UpTime

The newsletter for: RS-DOS, OS9, OSK, CoCos, and 68xxx's.

Volume 1, Issue 8 — April 1993

Editorial

Welcome again to our 8th issue of *UpTime*! There have been many goings on in the CoCo Community, first CoCoPro! had announced their closing and now I am sad to report what many of you might already know: *Falsoft* has announced that the May 1993 issue of *Rainbow* will be the final installment. *The Rainbow* has been with us for over 10 years, starting first as an informal publication much like *UpTime*, and growing as the CoCo Community grew. I am happy to say that I have had many great experiences with *The Rainbow*, and it can be said that the CoCo's well being is a direct result of the publication: if it were not for the magazine and its central point of attention, the CoCo would certainly not have as many supporters as it does today.

Where to go now? Well, I have heard a lot of talk and been asked a lot of questions about where the CoCo is going to go now— in fact, I have mentioned something about the CoCo's future in just about every column. And it basically boils down to this: the CoCo is going to go exactly where its supporters want it to go. The CoCo (and its vendor's support) will continue as long as there are active supporters who want to learn more and purchase more software. As I have mentioned before, we started *UpTime* just to have a central point for current information about the CoCo: where the next 'fests are, what products are coming out, and what vendors are offering. If you have any friends using their CoCos (and 68xxx machines), let them know about *UpTime*. Best of luck to our new advertisers, and I encourage anyone with some creative ideas to advertise in *UpTIme*; write for more information.

- Jordan Tsvetkoff

In this issue...

Editorial 1
Classifieds 12
CoCo Graphics 3
Disk Fix 7
Tandy Hi-Res 1
Upcoming Events 2
Who Gets Credit? 2

The Tandy Hi-Res Interface with RS-DOS

Since the article about the Hi-Res Interface code last month, I have decoded the OS-9 Level II routine. Microware did not use the timer interrupt but "cheated" by not keeping a constant number of cycles per count loop. This allowed a loop of 9 clock cycles for counts from 1 to 255 with more code added after the 255th count.

This would result in periodic glitches if the routine was used in a project like William Barden's CoCo oscilloscope for example. However, it is fine for reading joystick movements and the savings in clock cycles obviates the need for IRQ processing.

- Robert Gault
Secretary, CCOG Color Computer Owners Group of Detroit

UpTime

Editor: Jordan Tsvetkoff

UpTime is published 12 times a year by **JWT Enterprises**, 5755 Lockwood Blvd., Youngstown, OH, 44512. Yearly subscription rates are $15.00, or $7.50 in two installments. Foreign orders (except Canada and Mexico) add $7.00 postage.

Copyright © 1993 by JWT Enterprises. Quotation not permitted. Material may not be reproduced in whole or in part in any form whatsoever without the express written permission of JWT Enterprises.

Postmaster: Send address changes to *UpTime*, **JWT Enterprises**, 5755 Lockwood Blvd., Youngstown, OH, 44512. *Readers:* Direct all subscription inquiries, payments, and changes of address to *UpTime Subscriptions*, **JWT Enterprises**, 5755 Lockwood Blvd., Youngstown, OH, 44512.

Purpose: To provide information about products, services, and activities relating to the **Tandy Color Computer** and **OSK/ 68xxx-based machines**.

Submissions: Submissions of any form can be sent to *UpTime Submissions*, **JWT Enterprises**, 5755 Lockwood Blvd., Youngstown, OH, 44512. Please note that article/editorial submissions are preferred, although short program listings will also be considered. If reimbusment is requested, please indicate in writing with the initial submission.

To order a subscription to UpTime, please send a U.S. check or money order for $7.50 to:

UpTime, JWT Enterprises
5755 Lockwood Blvd.
Youngstown, OH 44512.

You will be billed for the second installment of $7.50. Canadian orders, $9.00 installments. Foreign orders, $11.00 installments.

Who Gets the Credit?

Have you ever gotten a neat little program (or maybe a large program) and nowhere within the program or REMmed lines were there any indication of who wrote it or where it came from? Where did it go?

Well, sometimes programmers do not bother to put their names in a program. More often then not, some turkey has removed it. Maybe they felt like they stole it and want to cover the evidence. Just how juvenile can you get?

When you get a nice public domain item, it is because someone not only enjoyed putting it together but is willing to share their ingenuity and give it out freely for you enjoyment. They do not ask a penny for your use. If Joe Smith from Dirtsville, Ohio put together a neat

Credit cont'd, page 8

UPCOMING EVENTS

2nd Annual Last CoCoFest
May 1st and 2nd, 1993
Holidome @ Elgin, IL (near Chicago)
15 min. from RainbowFest location.
Call 1-708-695-5000, mention "CoCoFest" or "Glenside" rates.

Sponsored by:
Glenside CoCo Club

Contact:
Tony Podraza
119 Adobe Circle
Carpentersville, IL 60110-1101
(708) 428-3576

Tickets:
Advance 2-day, $8 + SASE or 50¢ postage; $10 at the door
George Schneeweiss
RR2 Box 647
Forrest, IL 61741-2629

Sundog Systems Discount Special

15% off

Buy 2 or more CoCo 3 products and save 15% on each!

Coupon must be mentioned at time of order to receive discount. Offer excludes The Contras. Expires April 30, 1993. See prices and ordering information elsewhere in this issue.

Sundog Systems
P.O. Box 766
Manassas, VA 22111
703/330-8989

CoCo Graphics

Well, I hope you have figured out how the *cos* and *sin* functions are used to produce circles, arches, and ellipses. In this issue, I will explain how to draw specific angles using the *cos* and *sin* functions. This article assumes you are using a PMODE screen. You could adapt this program to work on the SET/RESET screen if you needed to, but you would also need to use the SET/RESET screen line drawing program I presented in my first article.

Drawing angles is complicated to explain, but is relatively easy to do. If you recall from my last article, we used *cos* and *sin* to find points on a circle. To draw an angle, all we have to do is find the degrees that we want on the circle and draw two rays from the center of the circle to the two points to form the angle.

Let's say we wanted to draw a 90° angle. First decide where the angle is going to be placed on the screen in terms of the *x* and *y* coordinates. Note that the *x* and *y* coordinates will be the vertex (center point) of the angle, and *cos* and *sin* are trigonometric functions so we will be using trigonometric measurements. Not only could we use the 0° and 90° measurements to get a 90° angle, but we could also use 180° and 270°, or 90° and 180°, or 135° and 255°, etc. Notice that if you subtract the smallest degree from the largest we always get 90°. The only time that this does not work is when the 0° is included within the angle. If you look at Figure 1, you will notice that using 315° and 45° will give us a 90° angle but 315 minus 45 does not equal 90. Since the 0° is included in the angle, we must do the check in a

Graphics cont'd, page 4

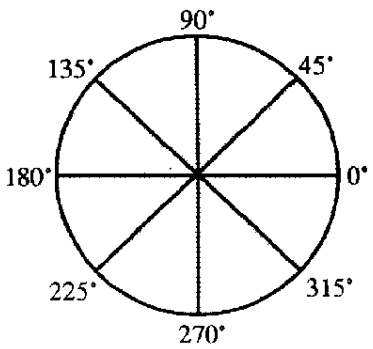


Figure 1
Trigonometreic Circle

ColorSystems

Quality OS-9 Software for your Color Computer 3 and the MM/1 from IMS

Variations of Solitaire - A game pack which includes **FIVE** variations of the popular one-person card game Solitaire! Includes **Pyramid** one of the most habit-forming, **Klondike**, the standard version of Solitaire, **Poker** which gamblers would enjoy, **Spider** were a single hand can take hours of play, and the popular gambling variation **Canfield**.

Game Pack - A game pack of **FIVE** popular board games adapted for your favorite computer! Includes **Othello, Yahtzee, KnightsBridge, Battleship,** and **Minefield**.

These two products come for both the **Color Computer 3** with **OS-9 Level 2** and at least 256K of memory or for the **MM/1** from IMS. Color Computer version is **$34.95** and the MM/1 version is **$49.95**. *(Multi-Vue is NOT required for the Color Computer Version!)*

WPShel - This is an impressive tool which allows those who do a lot of Word Processing on their Color Computer 3 to put all of their favorite tools under a single point and click environment. Requires OS-9 Level 2, system support from the *WindInt* module which comes with *Multi-Vue* and at least 256K of memory. Mouse and Printer are optional but desirous. Only **$22.00!!**

To Order Send a Check or Money Order to:

ColorSystems
P. O. Box 540
Castle Hayne, NC 28429
(919) 675-1706

North Carolina residents please include 6% sales tax. Shipping is free to the Continental US. For Alaska, Hawaii, Canada and Mexico, add $3 per item. For all other locations, add $5 per item. All non-US orders MUST be an International Postal Money Order in US Funds! Call or write today to request a **FREE** *catalog!*

Graphics cont'd from page 3

different way. First subtract the larger measure from 360. In this case it will be 360 minus 315, which is 45. Now we add the smaller measure to the result to get 90° (45+45).

When you have finished deciding what degrees you are going to use, make the smaller value D1 and the larger value D2. Then substitute all of the information into the following subroutine:

```
1000 REM D1=(smaller degree)
1001 REM D2=(larger degree)
1002 REM X=(x coordinate of
vertex)
1003 REM Y=(y coordinate of
vertex)
1004 REM L=(length of ray;
1-255)
1006 V=57.29577951
1008 A=L*COS(90+D1/V)+X
1010 B=-(L)*SIN(90+D1/V)+Y
1012 C=L*COS(90+D2/V)+X
1014 D=-(L)*SIN(90+D2/V)+Y
1016 LINE(X,Y)-(A,B),PSET
1018 LINE(X,Y)-
(C,D),PSET:RETURN
```

Before calling the routine, make sure you assign a value to *D1*, *D2*, *X*, *Y*, and *L* as explained in the REM lines of the routine. Then, when you need an angle to be drawn, use a *GOSUB 1000* to call the routine.

The routine works almost the same way it did in my last article, only it finds two specific point on the circle instead of all of the points on the circle. Notice that the length of the lines drawn (variable *L*) is actually the radius of the circle. The larger the circle, the longer the lines in the angle will be.

Well, that is it for this issue. Next time I will explain how to do two and three dimensional rotations using the *cos* and *sin* functions and some fancy animation techniques.

- David McNally

"They bought me a laptop computer...and took my desk away!"

UPGRADE National Diskletter! From: Mid Iowa & Country CoCo
We are a national reachout!

Our "UPGRADE" newsletter mailed on Disk, has become a real hit with MAX III graphics accompaning articles. The articles from RSDOS Basic programming, and hardware, to OS-9 by James Jones of Microware; dump to screen (TV, Mono, or RGB) or printer. Sometimes with the news before the big mags, and editorials you will not see in the commercial magazine. With many user tips and ideas.

Our Power Packed Domain Library: is purposly small relative to thousands available; because the few hundred disks there are carefully selected as "The Best Available"! Public Domain, Shareware, OS-9, & previously big named Orphaneware programs.

We also have a "Christian Software Sub-chapter". Which simply offers Christian oriented software and listings for those interested.

Where can you buy? Or sell that equipment you've just upgraded from? Your free ads will be in the middle of the community.

Be in touch for Middle America's Fest '93 in Des Moines, IA.

Have you noticed the 3rd part market producers (i.e. support) dropping like flies in late fall? The shrinking Rainbow? The support of your CoCo is rapidly being left up to YOU! As third party decreases; belonging to a CoCo group is your only support. Radio Shack and a long list of magazines have folded it in. If one more magazine folds,,, where will you look next month?

Our eight year record speaks very well to reaching out and serving members. A strong treasury assures confidence of delivery. Most members are out of town or out of state! Presently we have paid memberships in 23+ states and 3 provinces of Canada. Plus five clubs, and some dealers. Out 90% renewal rate says most all feel MI&CC is very worthwhile. Join up and see why: even user groups by vote; sign up with a paid membership!

Your membership will bring you all Newsletters, Library, Voting, and other privilages, for a year. ($3 Sample disk)

Mid Iowa and Country CoCo (non-profit group)
"Gathering the CoCo community"!
Do you want support tomorrow?
Then stay with a group that keeps you in touch!
Annual Membership: $16.00 US - $21.00 Canada

Say, "I saw it in **UpTime**" and receive,,,
an UPGRADE Disk plus added bonus disk via return mail!

Terry Simons (MI&CC Treas.), 1328 48th St.
Des Moines, IA 50311 (515) 279-2576 after 8:00 PM

News Release! News Release! News Release!

Here's the five W's:

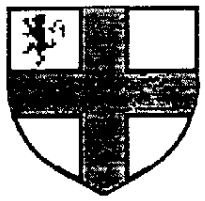
Who: Glenside CoCo Club of Illinois
What:: Second Annual "last" Chicago CoCoFest!
When: May 1st and 2nd, 1993
Where: Holiday Inn Elgin *(a Holidome recreation center)*
345 West River Road *(a city block from I-90 & Illinois 31S)*
Elgin, IL *(18 minutes driving time from the "fest" location of the 1980's)*
Overnight room rate $52 *(plus 10% tax)*
Call (708) 695-5000 for reservations.
Be sure to ask for the "Glenside" or "CoCoFest!" rates!
Why:
- to provide vendor support to the CoCo community
- to provide community support to the CoCo vendors
- to provide educational support to new users
- **TO HAVE AN OUTRAGEOUSLY GOOD TIME!**

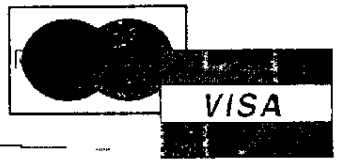
And now the' H' word, ***how much***?
- admission will be $10 at the door
- two day pass only (sorry, no one day passes!)
- advanced ticket sales, $8 plus SASE or $8 plus 50¢ P&H

Ticket Contact:	**General or Exhibitor Contact:**		
George Schneeweiss	*Tony Podraza*	*-or-*	*Carl Boll*
RR2 Box 647	119 Adobe Circle		(Vice-President, GCCI)
Forrest, IL 61741-2629	Carpentersville, IL 60110-1101		(Glenside CoCo Club of IL)
	Voice: (708) 428-3576		Voice: (312) 735-6087
	BBS: (708) 428-0436		BBS: 312-735-3355

Burke & Burke

P.O. Box 733 Maple Valley, WA 98038
ORDER DESK & TECHNICAL ASSISTANCE
(206) 432-1814





Native Mode for $34.95!

Burke & Burke's $34.95 PowerBoost kit replaces your CoCo's 6809 with a high- performance Hitachi HD63B09E microprocessor. PowerBoost comes with our exclusive "tuneup" program, which uses the HD63B09E's advanced instructions to speed up manu OS9 operations by an average of 40%. PowerBoost now includes software to run the 63B09E microprocessor in Native Mode for a 10% average speed increase over previous versions. Our implemen- tation of Native Mode updates only the REL, BOOT, OS9P1, OS9P2, and CC3DISK modules; other modules require no modification.

2nd Edition of "The 6309 Book", $29.95

If you write assembly language software, you'll find The 6309 Book an indispensible reference guide. The 2nd Edition describes the new addressing modes, as well as the new instructions, of the HD63B09E. Our $29.95 package includes the book, Native Mode DEBUG patches, a disassembler, and a new version of our XSM 6809/6309 assembler. XSM runs under OS9, but can output RS-DOS, OS9, or Motorola S-Records. XSM uses "FAR pointer" techniques to allow up to 64K of program symbols. NOTE: XSM DOES NOT INCLUDE OS9 EQUATE FILES, BUT CAN USE HEADERS PROVIDED WITH THE OS9 LEVEL 1 ASSEMBLER OR LEVEL 2 DEVELOPER'S KIT.

CoCo-XT Hard Disk Interfaces

Hundreds of Color Computer enthusiasts in the US, Canada, Europe, South America, and Australia love our affordable high-performance hard disk interfaces! Look at these features:

NO HALT • 1 or 2 hard drives • 30% faster than SASI • Uses PC-type hard disk drives & MFM / RLL controllers • 5 Meg to 120 Meg per drive • Does not use interrupts • Multi-PAK recommended • Works with 12 Volt Y-cables • Includes EZGen boot file editor for easy installation

Each interface includes a user manual and software for use with HYPER-I/O or OS9. The CoCo XT hard disk interface is $69.95. The CoCo XT-RTC model, $99.95, adds a battery-powered real time clock / calendar for OS9 and BASIC.

XT-ROM - allows OS9 startup from CoCo XT hard disk	**$19.95**
THEXDER-OS9 (requires THEXDER cartridge)	**$29.95**
SPRING SALE! $5 OFF THIS PRICE THROUGH MAY 31, 1993:	
PERTASCII - OS9 Multi-User & BBS word game	**$19.95**
OS9 World Class Chess (requires CYRUS cartridge)	**$29.95**
File System Repack - OS9 graphical disk defragmenter	**$29.95**
File Recovery System - Helps recover damaged OS9 disks	**$24.95**
EZGEN - Fast OS9 boot file editor (uses RAMDisk work files)	**$19.95**
WILD & MV - OS9 wildcard and file moving utilities	**$19.95**
ZCLOCK - Continuous date / time on Level 2 OS9 windows	**$9.95**
RSB - Complete CoCo BASIC, for OS9 (requires DECB ROM)	**$39.95**
Daggorpatch for RS-DOS (requires DAGGORATH cartridge)	**$9.95**
HYPER-I/O - Use 720K floppy disk, hard disk from BASIC	**$24.95**

Daggorpatch

Yet another does not return!

DAGGORPATCH puts the thrill back into your Dyna Micro Dungeons of Daggorath™ game cartridge by patching it to run from disk. Includes disk load & save, auto-repeat command, pause, DMP-100 screen dump, tape-to-disk, and more!

MC68B09E 2MHz uP	**$14.95**
HD63B09E 2MHz uP	**$19.95**
27128 EPROM (Blank)	**$9.95**

WA RESIDENTS ADD 8.2% SALES TAX. MC & VISA accepted. U.S. COD's add $3.75. Min. shipping $4.00 U.S. $5.00 to Canada. Please allow 2 weeks for delivery. Overnight or 2nd- day available for in-stock items. Software upgrades $5.00 each w/receipt, including U.S. shipping.. Call / write for free catalog!

DISK FIX.BAS:

```
5 REM THE DISK FIXER
10 REM BY DAVID MCNALLY
15 REM COPYRIGHT 1992
20 CLEAR 1000
25 DIM ER(34,18),GRAN(67),A$(90)
30 GOSUB 235:GOSUB 210
32 GOSUB 600
35 PT=66:CT=0
40 EXEC 44539
42 COLOR 0,0:GOSUB 605:COLOR 1,0
45 GOSUB 700
50 REM FIND BAD SECTORS
55 POKE 234,2:POKE 235,0
60 FOR T1=0 TO 34
65 FOR T2=1 TO 18
70 POKE 236,T1:POKE 237,T2
75 EXEC 55135
80 CT=CT+1:IF CT=5 THEN GOSUB 22
5:CT=0
85 IF PEEK(240)<>0 THEN ER(T1,T2
)=1
90 NEXT T2
95 NEXT T1
100 REM CONVERT TRACKS/SECTORS T
O GRANUALS
105 L=0
108 DRAW"BM70,150":A$="UPDATING
FAT TABLE...":GOSUB 540
110 FOR T1=0 TO 34
115 IF T1=17 THEN T1=18:PT=PT+4:
REM SKIP OVER DIRECTORY TRACK
120 FOR T2=1 TO 9
125 IF ER(T1,T2)=1 THEN GRAN(L)=
1
130 NEXT T2
135 L=L+1
140 FOR T3=10 TO 18
145 IF ER(T1,T2)=1 THEN GRAN(L)=
1
150 NEXT T3
155 L=L+1
160 NEXT T1
165 REM UPDATE FAT TABLE
170 G$=""
175 FOR YY=0 TO 67
180 IF GRAN(YY)=0 THEN G$=G$+CHR
$(&HFF)
185 IF GRAN(YY)=1 THEN G$=G$+CHR
$(&HC9)
190 NEXT YY
195 DSKI$ 0,17,2,X$,Y$
200 DSKO$ 0,17,2,G$,Y$
202 LINE(66,80)-(66+133,90),PSET
,BF
205 DRAW"BM70,150":COLOR 0,0:A$=
"UPDATING FAT TABLE...":GOSUB 54
0:COLOR 1,0:DRAW"BM18,150":A$="P
ROCESS COMPLETE.  CHECK ANOTHER?
 (Y/N)":GOSUB 540
206 PP$=INKEY$:IF PP$="" THEN 20
6 ELSE IF PP$="Y" THEN GOTO 30 E
LSE IF PP$="N" THEN CLS:NEW ELSE
 GOTO 206
208 GOTO 208
210 PMODE 4,1:PCLS0:SCREEN 1,1
215 LINE(66,80)-(66+133,90),PSET
,B
220 RETURN
225 LINE(PT,80)-(PT,90),PSET,BF
230 PT=PT+1:RETURN
235 PMODE 4,1:PCLS0:SCREEN 1,1
240 A$(32)="BR6
245 A$(33)="BR3UBU2NU3BD5
250 A$(34)="BR3BU2U2BR2D2BD2
255 A$(35)="BU3BR4U4BR2D4URL4RU2
LR4BD3
260 A$(36)="BR3R3U2L3U2R3L2NUD5B
RU6BRBD5
265 A$(37)="BR3E4BL3DBR3BD2D
270 A$(38)="BR3BU2R4L2D2H2R2U2BR
2BD2
275 A$(39)="BR4BU3D2BD3
280 A$(40)="BR5HU2EBD4
285 A$(41)="BR4EU2HBD4
290 A$(42)="BR3BUE2GHF2HNUNDNLNR
BR2BD2
295 A$(43)="BR3BU2R2LUD2BR
300 A$(44)="BR3DGEU
305 A$(45)="BR3BU2R3BD2
310 A$(46)="BR3NRBR2
315 A$(47)="BR3UE2UBD4
320 A$(48)="BR3U4R3D4L3BR3
325 A$(49)="BR3NU4
330 A$(50)="BR3NR3U2R3U2NL3BD4
335 A$(51)="BR3R3U2NL2U2NL3BD4
340 A$(52)="BR3BU4D2R3U2D4
345 A$(53)="BR3R3U2L3U2R3BD4
350 A$(54)="BR3NU2R3U2L3U2R3BD4
355 A$(55)="BR3BU4R3DGD2BR
360 A$(56)="BR3NU4R3U2NL3U2NL3BD
4
365 A$(57)="BR3R3U2L3U2R3D2BD2
370 A$(58)="BR3UBU2UBD4
375 A$(59)="BR3DGEUBU2NRBD2
380 A$(60)="BR5H2E2BD4
385 A$(61)="BR3BUR3BU2L3BD3BR3
390 A$(62)="BR3E2H2BR2BD4
395 A$(63)="BR3BU3UR3D2LBDDBR
400 A$(64)="BR3NR3U3ER2BD2LDRUD2
405 A$(65)="BR3U3ERFDNL3D2
410 A$(66)="BR3U4R2FGNL2FGL2BR3
415 A$(67)="BR4REGLHU2ERFBD3
420 A$(68)="BR3U4R2FD2GL2BR3
425 A$(69)="BR3NR3U2NR2U2R3BD4
430 A$(70)="BR3U2NR2U2R3BD4
435 A$(71)="BR3BU4BR3L2GD2FREULB
R2BD2
440 A$(72)="BR3U4D2R3U2D4
445 A$(73)="BR3R2LU4NLRBD4
450 A$(74)="BR3BUFREU3LR2BD4
455 A$(75)="BR3U2RNF2NE2LU2BR3BD
4
460 A$(76)="BR3NR3U4BR3BD4
465 A$(77)="BR3U4FRED4
470 A$(78)="BR3U4F3DNU4
475 A$(79)="BR2BUU2ERFD2GLNHBR
480 A$(80)="BR3U4R2FGL2BR2BD2
485 A$(81)="BR3BUU2ERFD2GNUNRLHB
R3BD
490 A$(82)="BR3U4R2FGL2RF2
495 A$(83)="BR3R2EHLHER2BD4
500 A$(84)="BR3BU4R2LD4BR
505 A$(85)="BR3NU4R3NU4
510 A$(86)="BR3BU4D3FRENU3BD
515 A$(87)="BR3NU4ERFNU4
520 A$(88)="BR3UE2UDGHUDF2D
525 A$(89)="BR3BU4DFEUDGD2BR
530 A$(90)="BR3NR2UE2UL2BR2BD4
535 RETURN
540 FORX=1TOLEN(A$):Y=ASC(MID$(A
$,X,1)):DRAWA$(Y):NEXT:RETURN
600 DRAW"BM50,5":A$="COLOR COMPU
TER DISK FIX V1.0":GOSUB 540
602 DRAW"BM35,15":A$="(C) 1992 C
OLOR COMPUTING SOFTWARE":GOSUB 5
40
604 DRAW"BM66,96":A$="0%        5
0%        100%":GOSUB 540
605 DRAW"BM30,150":A$="PRESS ANY
 KEY TO START THE DISK FIX!":GOS
UB 540
608 RETURN
700 POKE 234,2:POKE 235,0
702 POKE 236,17
704 FOR T=1 TO 18:POKE 237,T
706 EXEC 55135
708 IF PEEK(240)=0 THEN NEXT T:R
ETURN ELSE GOTO 750
750 DRAW"BM70,150":A$="DISK CAN
NOT BE FIXED!":GOSUB 540:EXEC 44
539:RUN
```

Disk Fix

Disk Fix is a simple utility program that will attempt to fix a disk that has I/O errors during the formatting process. To use the program, first try to reformat the disk that has an error on it. If it formats correctly, then you are all set. If an error occurs during the format, then load **Disk Fix** and type RUN. The computer will prompt you to insert the disk to be fixed. Insert the disk and press any key to start. The computer will then search through the disk keeping a record of all the locations that are bad. Then the FAT table will be updated so that the computer thinks the bad sectors are being used by a program; therefore, no attempt will be made to save data on the bad sectors of the disk. Note that this should be run *before* any files are placed on the disk.

Some things you should be aware of: a disk cannot be salvaged if the directory track is damaged, the program can not fix disks if they are formatted for 40 tracks or higher, and the *backup* command can not be used to copy the disk even after **Disk Fix** is used. If you want to copy the disk, you must use the copy command or a utility program that bypasses disk errors during copying.

- Dave McNally

JWT Enterprises

Optimize Utility Set 1:
➡ Optimize your floppies and hard drives quickly and easily! ➡ Includes utility to check file and directory fragmentation
➡ Works alone or with Burke & Burke repack utility. ➡ One step optimization for any Level 2 OS-9 system.
$29.95; Foreign Postage, add $5.00

Optimize Utility Set 2:
➡ Check and correct any disk's file and directory structures without any technical mumbo-jumbo.
➡ Run periodically to maintain the integrity of your disks as well as the reliability of your data.
➡ Especially useful before optimizing your disks
$19.95; Foreign Postage, add $3.00

Optimize Utility Set Pac:
➡ Get both packages together and save!
$39.95; Foreign Postage, add $4.00

Optimize **UpTime** NINE TIMES

Independant program submissions welcome!

UpTime: A monthly magazine for CoCo's and OSK machines
In each issue:
➡ Find out about new products and upgrades for your favorite computers
➡ Learn about what new technical breakthroughs are on the horizon
➡ Discover what programs really can do and what they cannot.
➡ Published monthly in a newsletter format.
One Year Subscription, two installments of $7.50,
Canadian Orders, two installments of $9.00, Foreign Orders, 2 X $11.00
Can also be paid in one installment

Back-Issues: From September 1992. Limited supplies.
$1.50 each; Foreign Orders, add $1.25 each
Bulk orders of six or more, $1.25 each, Foreign Orders add $1.00 each

Nine-Times: The bi-monthly disk magazine for OS-9 Level 2
In each issue:
- Helpful and useful programs
- C and Basic09 programming examples
- News, Help columns, and informative articles
- All graphic/joystick interface
- Can be used with a hard disk or ram disk

One Year Subscription, $34.95,
Canadian Orders, add $1.00, Foreign Orders, add $8.00

Back-Issues: From May 1989. Write for back issue contents
$7.00 each, Foreign Orders, add $2.00 each
Bulk orders of six or more, $5.00 each, Foreign Orders, add $1.50 each

Magazine Source: Full Basic09 code and documentation for the presentation shell used with Nine-Times
$25.95, Foreign Orders, add $5.00

[redacted]
JWT Enterprises
5755 Lockwood Blvd
Youngstown, OH 44512

Foreign postage excludes U.S. Territories and Canada. These products for OS-9 Level 2 on the CoCo 3. Sorry, no C.O.D.'s or credit cards; Foreign & Canadian orders, *please* use U.S. money orders. U.S. checks, allow 4 weeks for receipt of order. Ohio residents, please add 6% sales tax.

Copyright (C) 1993 OS-9 is a trademark of Microware Systems Corp. and Motorola, Inc.

FARNA Systems
904 2nd Avenue
Warner Robins
Georgia 31098-1029
Phone 912-328-7859
Bringing the best to the Color Computer!

Tandy's Little Wonder
(the Color Computer)
It started life as a simple terminal for farmers to use, but grew into an inexpensive yet powerful home computer. **This book relates the history of the CoCo through the pages of various CoCo magazines and provides "survival" information (current vendors, publications, support, repairs, etc.)**. Many long-time and knowledgeable CoCo advocates contributed- Alfredo Santos, Marty Goodman, Art Flexsor... to many to list here!
SIZE: 5.5"x8.5", approx., 160 pages.
Softbound: $20; Hardbound $30
AVAILABLE MAY 1993!
$2.50 S&H ($5 Canada/Foreign)

RASCAN VIDEO DIGITIZER-$175
320x200 to 640x200, color scans with 512K and filters. Scans in 15 seconds. No MPI.. uses joystick ports. Allow 8-10 weeks delivery (from Australia)

OS-9 INVOICE/INVENTORY MANAGER - $24.95
Print invoices by typing customer info and selecting item from inventory list. Requires Basic09, OS9 Level I or II. Multi-user, with source.

OS9 Quick Reference Guide-$6.95

Come see us at Chicago CoCoFest May 1st and 2nd!

LBB, Basic Book & Video Tape Organizer- $7.50 ea, $12.50 both
LBB is an address/phone database. VTO is for video tapes. Both print labels and lists.

Programming the 6809 - $22.95
assembly language book recommended by Motorola and Marty Goodman! Over 300 pages, illustrated.

Keep-Trak- $33.95
Double entry general ledger and accounts receivable accounting for all CoCos.

Omega File- $23.95
Menu driven, programmable database for all CoCos.

NEW GAMES!!

CROSS II ROAD
Cross Road II is a different twist on a classic game... Tic Tac Toe. This one has fantastic graphics and full digitized voice and music scores... CoCo TALKS! The Australian accent is fantastic! Requires 512K and one drive. Two players or play computer - $14.95

Mind Games RAM DISK
A collection of games for the CoCo 3. Run from integrated RAM DISK with 512K or load and run separately. 10 games include ColorCode, Follow Me, Pyramid Solitare, Line Up Four, Five Stacker, Poker Dots, Slidabout, Color Disposer, and Yahtzee. Only $10.95!

ADD $1.50 S&H ($2.50 Canada/Foreign)

Credit cont'd from page 2

routine, the least I can do is leave his name there as author for others, who may enjoy the program as well, to see. It is just a small thank you and having respect for your fellow man.

Can you ethically alter 'Public Domain' programs? About the only thing other authors and myself do expect is a little credit where credit is due. For example, two different CoCo groups chose to use one of my graphics for their club logos. That someone considered my work that worthwhile made me feel honored-except I really was not. One promptly removed my name from the graphic with never a mention of where it came from. The other went a step further. They made a couple of minor changes and placed someone else's name as the graphic author! I will be a little nicer and not mention their names. Besides, we at MI&CC. had, the key word here is *had*, a user who put together a disk each month for our group. I began noticing there was no indication of who the authors were or where the programs were coming from. What is more, I began seeing *his name* on programs that he could not have written, just because he re-wrote some of the PRINT statements or renumbered some lines. What the heck, he was just a kid, and anyone with teenager knows they can sometimes be a little selfish and immature. We did ask him nicely to stop.

But can you change a program? Why not? Speaking personally, of the many graphics and programs I placed into public domain, I give them out for the CoCo supporter's pleasure. And I fully expect them to be modified by anyone who can add or use them more to their benefit. I have modified quite a few myself. If the modification is significant, I will add under the author's names: *modified by — and the date.* Occasionally I have sent the updated version to the original author, and received nothing so far except positive comments.

- Terry Simons

Reprinted by permission from Mid Iowa & Country CoCo's UPGRADE Newsletter Disk.

Let me first introduce myself. My name is Chris Dekker and I wrote some of the OS9 products CoCoPro! was selling. Now that CoCoPro! is no longer around, I have decided to market these products myself. I am talking about the following packages: *Accounting level 2, Tools 3,* and *Quicklettter.*

The main reason for this decision is that this is the easiest way to provide for customer service, upgrades, etc. If you have any questions, please call or write to the address below.

As part of the changes, all three packages have been upgraded:

- **Accounting level 2** has not been substantially altered, but some wrinkles have been smoothed over
- **Tools 3** now includes anti-virus software, an archiving program, two more utilities: *alarm* and *append*, and a version of cobbler that allows you to change modules in the bootfile— it also saves the *shell* and *grfdrv* files to the new disk.
- **Quickletter** now includes list and merge utilities, an envelope writer, and setup files for some popular printers. Some of the original modules have been changed to speed up or expand their functions.

New Products coming soon:

- **Investing level 2** allows you to keep track of investments, calculate returns, track and analyze markets, etc.
- **Level II graphics:** a set of two disks containing a canvas program, printer drivers, font and pattern editors, a clipboard, programs that generate fractals from the julia and mandelbrot sets, and much more.

To receive one of the above mentioned upgrades send $5.00 plus your name, address, and proof of purchase. Prices for the upgraded packages are still:

Accounting Level 2 $34.95
Tools 3 $29.95
Quickletter $19.95

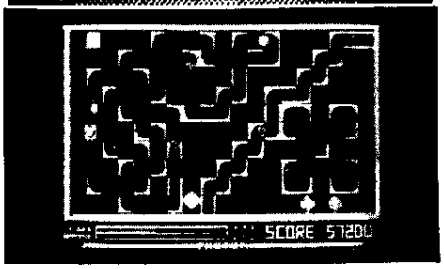
Chris Dekker
RR #4
Centerville NB E0J 1H0
Canada
(506)-276-4841

Pricing policy: all prices quoted in US dollars. Shipping and handling US/Canada $3.00, all others $5.00. Send cheque or money order— sorry, no CODs.

SUNDOG SYSTEMS

PHOTON

NEW!



Energy is everything; your home world depends on it. However, someone or something is slowly siphoning it away. As your world's champion, you must climb into the experimental Power Tank to challenge this nemesis and his minions. Your key lies with the ability to teleport solid mass. Use this to manipulate and explore the endless stronghold of the enemy, and to exploit the free-floating DUPES (Dense Units of Photon Energy) to destroy the menacing Plasma Droids. Be cautious, though, those DUPES can be deadly, too! Photon, a fantastic new arcade game for your CoCo3, contains spectacular 320x200 resolution, 16 color graphics, ultra-smooth 60 Hz animation, and loads of real-time music and sound effects. It will send your mind racing over endless possibilities, requiring quick decisions and reactions. Quite simply, Photon is incredibly addictive; it will deliver hours of excitement. Will you become your world's greatest hero, or just another energy slave? Req. 128K CoCo 3 and disk drive.

$34.95

GRAF 2.0 EXPRESS

NEW!

GrafExpress 2.0 is a complete graphics and music programming environment. From the beginner to the accomplished professional, you can use GrafExpress to create lightning fast arcade games, graphic applications and utilities, and windowing multimedia demonstrations! The GrafExpress package includes two incredible systems. GrafExpress 16 works on all monitor types and offers support in 12 graphic resolutions (from 128x192 to 320x225). GrafExpress 256 offers 6 resolutions (from 128x192 to 160x225 on a composite monitor) in an astounding 256 colors! Ever see a CoCo do that before? Both systems include standard graphics commands (CIRCLE, FILL, etc.) that blow away the competition. For example, the BOX command peaks out at over 2 MegaPixels/second; that's 300 times faster than BASIC! 255 separate sprites of up to 100x100 pixels each are supported with window clipping and high-res pixel level collision checking. The 8-octave/4-voice music synthesizer has independent envelope, waveform, and volume controls, a 7 + KHz sampling rate, and much more. Other features include text/graphics mixing, different font sizes, fast window copying and scrolling, picture save/load, easy implementation from both BASIC and assembly language, multiple screen animation, and support for 128K/512K, double speed, and the high-res joystick interface. The package also contains support programs that are worth the purchase price of GrafExpress alone! These include an introductory demo, a picture editor, a waveform editor, and an art program that supports 256 colors! GrafExpress also comes with a 50 page manual that fully explains all of its incredible features. If you do any graphics programming or simply want to see what your little CoCo is capable of, GrafExpress is a must! Req. 128K CoCo 3 and disk drive.

$34.95

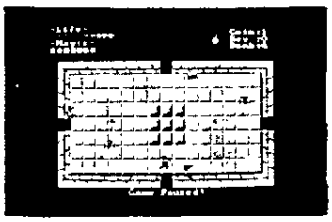
War Monger

NEW!

The world is in unrest. Power-hungry villains and evil warlords are readying their forces. It falls to you to lead your people against these armies, and only your best strategic plans can save the day. Fight the good fight in any era or locale. Play a simple game of capture the flag armed with water balloons, or climb into the cockpit of a 100 foot high armored warrior. Explore the deepest dungeons, defend your galaxy, or create your own scenarios with this incredible war game construction set/simulator. Your imagination is your only limit. You will deploy your forces with total control over hostile terrain while you scroll a graphic bird's-eye window over an immense world. War Monger has terrific 320x200 resolution, 16 color graphics and includes a tile editor to create or edit your own. Play against the computer, battle with another player, or simply watch the computer pit against itself. The enemy is everywhere. Are you ready to take on the challenge as the War Monger? Req. 128K CoCo 3 and disk drive.

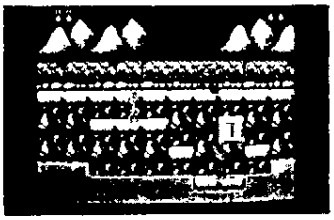
$29.95

The Quest for THELDA



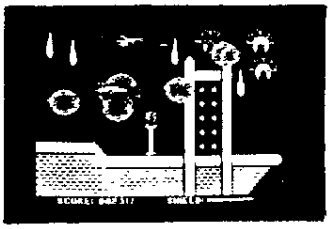
An immensely popular 128K CoCo 3 arcade/adventure. Over 500 screens of fast fantasy action and puzzle solving. Great graphics and sound effects. **$34.95.** Hint book only $4.95

THE CONTRAS



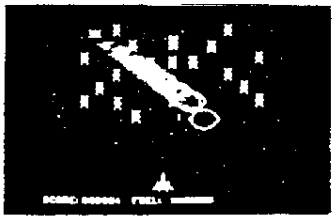
A 512K two player futuristic combat arcade game. Full screen 320x225 hardware scrolling and smooth animation. Back-ground music score and sound effects! 512K Coco3 only. **34.95.**
Shipping soon!

Crystal City



This was THE game of '91! Ultra-fast space action with hardware scrolling on a 128K CoCo 3. Wild sound effects and over 30 MegaBytes of amazing graphics! **34.95.**

ZENIX

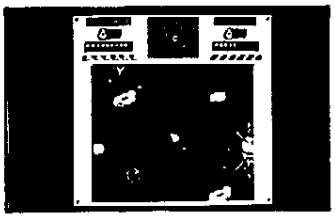


Lightning fast arcade game for the 128K CoCo 3. Terrific 320x225 graphics, back-ground music score and sound effects, and out-of-sight game play. **$29.95.**

ALSO AVAILABLE

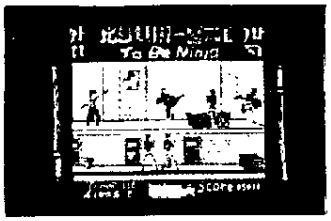
Warrior King	
CoCo 3	$29 95
In Quest of the Star Lord	
CoCo 3	$34 95
Hint Sheet	$ 3 95
Hall of the King 1, 2 or 3	
CoCo 1 · 3	$29 95 ea.
Hall of the King Trilogy	$74 95
White Fire of Eternity	
CoCo 1 · 3	$19 95
Dragon Blade	
CoCo 1 · 3	$19 95
Champion	
CoCo 1 · 3	$19 95
Paladin's Legacy	
CoCo 1 · 3	$24 95

Sinistaar



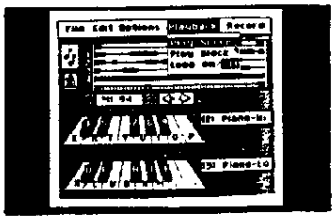
Everyone loves this 512K arcade game. 3 disks packed with spectacular graphics and eerie background digital sound effects. 512K CoCo 3 only. **$34.95.**

RYUU-SAI TO BE NINJA



The best selling 128K CoCo 3 martial arts arcade game. Now available in both RS-DOS and OS-9 versions. Play the incredible combat experience you've been missing under the operating system of your choice! **$29.95.**

SOUNDTRAX



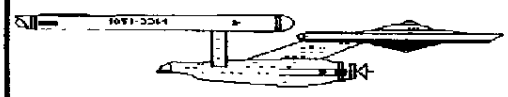
A polyphonic digital sound sequencing system for your 128K/512K CoCo 3 with a user-friendly point-and-click graphic editor. Create music scores with your own sounds or from the many we provide. **$34.95.**
Sample instrument disks: 6 sides of sampled sounds/instruments. Only $12.95 each or $29.95 for all three.

Visa, Mastercard, Check, Money Order and COD (USA only, please) accepted. All foreign orders must be sent in US currency. Money Orders. Include $2.50 for shipping in USA and Canada. $5.00 Foreign. $3.00 extra for COD orders. PA residents add 6% sales tax. Dealer inquiries welcome. Authors, we're looking for new software!

Sundog systems

SUNDOG SYSTEMS
P.O. Box 766 Manassas, VA 22111
703/330-8989

T&D Software : Our Final Frontier!



Our ten year mission has been to seek out new Coco software and boldly provide the biggest and best variety of Coco programs. Our mission is complete! Our subscription service has been stopped. This is your final chance to order!

Our Last ten Issues featured here.

ISSUE #111, SEPT. 1991	ISSUE #112, OCT. 1991	ISSUE #113, NOV. 1991	ISSUE #114, DEC. 1991	Issue #115 January 1992
PERSONAL FILE	BOWLER'S HELPER	GRADE BOOK	BORDER DESTROYER	FLIES
QUEST OF CHAOS	POOL PLAYER	BINGO CALLER	LOW RES 1 + 2	SPEECH HINTS
RETIREMENT ACCT.	MUSIC MAN	CAVERNS OF OH NO	THE CASTLE	MOUNTAIN WARS
ALPHABET SCRAM. 3	GUEST LIST	BEAUTY PAGEANT	SKETCH IV	SUP. COPY/KILL
POKER 3	SERPENT	TELESALE	ENEMY ATTACK	DARN
FINANCE BUNDLE	FOWARD DICE	CRYPTO	MATH SOLVER 2	MAZE
SILENCE SYNDROME	COCO TOOLS	CRIONAUNT WARIOR	DREAM ESCAPE AD.	DISK DIR.
MR. BILL	PAKFIX	PICTURE 3	TEST MAKER	BACKUP
COAST TO COAST	GNOME QUEST	SOLITAIRE PUZZLE	CODES 2, CODES 3	ROMAN CHECKER
GOPHER 3	BIRDS	FROGGY	MUNCHMAN	GNOME OUEST 2

Issue #116 February 1992	Issue #117 March 1992	Issue #118 April 1992	ISSUE #119 MAY 1992	ISSUE #120 JUNE 1992
CHOPPER	BOXES	VOCAB TESTER	LARGE	NAMEFILE
RICHER OR POOR	TIC TAC TOE 3	NURISHED	PICTURE MAKER	COMICS
MENU MAKER	MENU	EYE WITNESS	SQUARE	ALPHABET SOUP
THE CASTLE	MUNCHER	TEMP. CONV.	DISK CHECKER	BUDGET
HELP!!	RIDDLE	GREEN HOUSE	HINTS	LABELER
B.BALL DBASE	LOTTOGAME	ADDITION TEST	LOTTO PREDICTIONS	KAYAK ADV.
SNOW MOBILE	HCOPY 128 512	DEMON FIRE	POCKETBALL	JB-ROBOT
ASTROID SMASH	RAHUL'S QUEST 3	UFO HUNTER	RAMTEST	DESTROYER
DAFFI-NITION	CARS TYPEING	SHADOW WORLD	COCO DIR. MGR.	SATELITE
DREAMQUEST 3	PROTECT	SHOWDOWN	MUTANT ATTACK	CHRISTMAS CARD

Klingon to our back issues of subscription software

*All issues contain 10 ready to run programs.
*All original software includes documentation.
*We send first class! Free shipping!
*Personal checks welcome.
*Write for a free catalog.
*Programs are for a Coco 1, 2, or 3.

RAINBOW CERTIFICATION SEAL

It is logical to order some of these Public Domain disks now!

53 Public Domain Disks

Adventure 1-4
A1 - CIA, Dark Ship, Gargoyle, Kingdom, Knight
A2 - Odyssey, Pirates Sub, Wizard, Willard
A3 - Spook Cave, Shamrock, Magical
A4 - Tower Quest, Escape, Survival, ABC Gen

Utilities 1-8
Utilities 1-4
Music 1-7
Telecommunications 1-3
Graphics 1-14
Home Management 1-4
Education 1-4
GAMES 1-11

70 GRAPHIC DISKS!

Set #1	Set #2	Set #3	New Sets 4,5,6,7
Clipart Animals More	Celebrities Cartoons More	R-Rated Women Adults Only	Each set has a variety of: Business Clipart. Grin Graphics. Sports. Special Events Plus much more!

Prices:

Single Issue (Tape or Disk)...	$ 8.00 — $6.00
2-5 ISSUES.....	$ 6.00 — $5.00 Ea.
6-10 Issues.....	$ 5.00 — $4.50 Ea.
11 or more Issues.....	$ 4.50 — $4.00 Ea.
Graphic Sets.....	$20 — $15 Ea.
All 120 Single Issues.....	$250 — $125
All 53 Public Domain Disks.....	$145 — $75
All Graphic Stes.....	$140 — $70
All Our Softwarc(243Disks)...	$379.00 — $199

No Bones about it. These are the best prices yet!

Original Software

Public Domain

Graphic Disks Packages

Warp Speed them orders in TO:

T D Subscription Software
2490 Miles Standish Drive
Holland MI 49424
(616) 399-9648
Fax: (616) 396-2744

Name _____
Address _____
City _____ State ____ Zip ____
Credit Card # _____
Expiration _____ Total $_____

Please Circle : TAPE or DISK

KALA
software
3801 brown bark drive
greensboro, n.c. 27410
u.s.a.
919/294-1558
hours
8:00 a.m. — 7:00 p.m.
technical support
2:00 p.m. — 6:00 p.m.

All orders add $3.00 S/H
C.O.D. orders add an
additional $3.00

UltiMusic® Library

Kala Software's UltiMusic® Library is a collection of Classis Rock, Soft Rock, New Age & Jazz arrangements.

TRANSCRIBED SCORES:

The following scores are complete *"Off the Record"* arrangements. Every sound has been caputred to the best of our ability and arranged in such a way that best duplicates the original score.

THE BEATLES - Volume 1 ..... $ 9.95
THE BEATLES - Volume 2 ..... $ 9.95
THE BEATLES - Volume 3 ..... $ 9.95
THE BEATLES - Volume 4 ..... $ 9.95
BILLY 9.95
BILLY 9.95
THE ... Doub 2.95
LED 9.95
BLOC 9.95
STEE 9.95
ROCK 9.95
ROCK 9.95

See you all in Chicago May 1st and 2nd!

PIANO SCORES:

The following scores were arranged for 3 or 4 Channel MIDI keyboards. All arrangements were scored in the standard 2 or 3 stave format. However, each disk is *LOADED* with *GREAT* sounds.

THE BEATLES - Volume 1 ..... $ 12.95
THE BEATLES - Volume 2 ..... $ 12.95
UltiROCK - Volume 1 ..... $ 12.95
UltiROCK - Volume 2 ..... $ 12.95

SERIAL TO MIDI CABLE ..... $ 19.95

UltiMusE III
VER: 4.8.0

The Ultimate MIDI Music Notation Editor for the ColorComputer-3

$54.95

UltiMusE-III and **UltiMusE/K** are the most complete MIDI Music Notation Editor for either the 512k ColorComputer-3 or the new OSK machines. Compose detailed music scores to simple piano runs or just mouse in your favoriate sheet music score. The **UltiMusE** system is perfect for the novist music lover to the professional musician.
—— *It just doesn't get any better than this!*

$149.95

The Ultimate MIDI Music Notation Editor for the MM/1 and OSK machines

UltiMusE/K
VER: 10.0.0

The C Compiler for the CoCo has finally arrived...

CoCo-C

CoCo C is a complete RSDOS based C development package for the Color Computer not requiring the OS 9 Operating System. CoCo C consists of the following programs

Text Editor

A full featured screen oriented line editor for the CoCo 3 developed by Bob van der Poel. Powerful editing and cursor commands with auto indent and user defined macros make this a great editor for writing C or assembly language programs. A less sophisticated version for the CoCo 2 is also available

C Compiler

The CoCo-C Compiler is a full featured K&R style integer compiler specifically designed for RSDOS based systems. It has assembly language output, position independent code and can output ROM able code if desired. Added features allow you to mix C, assembly language and BASIC commands within your program!

Assembler

This symbolic assembler is capable of assembling files as large as available disk space. It supports a Motorola style syntax and outputs standard binary files ready for LOADM and EXEC. Options include list file output and generation of symbol table file

Library/Linker

The Library Linker is a utility which links the CoCo C's 90+ function library with your compiled binary file, creating a stand alone executable ML file

Command Coordinator

The Command Coordinator is CoCo-C's main program. Its user friendly menu driven screen smoothly switches back and forth between the Editor, Compiler, Assembler and Linker

The CoCo-C Compiler package includes BOTH CoCo 2 and CoCo 3 versions of ALL the programs listed above plus MORE! (Min. req. 64k)

Never before has there been an offer like this for the Color Computer !

Only $59.95
Plus $4.00 shipping & handling
(check, money order, or COD)

Infinitum Technology
P.O. Box 356
Saddle River, N.J. 07458
914-356-7688

Announcing

Icon Basic09

The next programming language for OS-9!

Icon Basic09 is a graphical user interface (GUI) to Basic09, which will make programming easier than ever! **Icon Basic09** takes an innovative approach by using graphic representations, or icons, to represent statements and keywords for writing Basic09 programs and procedures. Instead of constantly typing while writing a program, the user can simply **point & click** to choose the desired statement!

Icon Basic09 can also be very useful in studying procedures and programs written by others to learn how they operate. The package contains a full set of icons...or, you may edit or create icons using the included icon editor. Icon Basic09 requires a CoCo-3 with at least 256k, mouse or joystick, and OS-9 lv 2.

$20

Dual hi-res joystick adapter (Tandy/Colorware/lo-res)	**$40**
Hi & Lo-res joystick adapter	**$27**
HAWKsoft keyboard extension cable	**$25**
Domination ("Risk"-like wargame!)	**$18**
MyDOS full-featured DOS extension	**$15**

Hawksoft
PO Box 7112
Elgin, IL 60121-7112
(708) 742-3084 eves & ends

US and CDN S&H always included. Terms: MO, check, or COD.

CoCo Classifieds

Hardware

CoCos I/II WANTED! Buying good used or new condition! Oval Window Audio, 33 Wildflower Court, Nederland, CO. 80466, phone/FAX: (303)-447-3607.

To place an ad, simply print out your ad copy, specify which classification you wish it placed under, and send it to ***UpTime*** **Classifieds, 5755 Lockwood Blvd., Youngstown, OH, 44512** along with your name, address, phone number, and payment. We reserve the right to refuse any ad we deem inappropriate (such as offers to trade commercial software, vendor ads, etc.). Cost for an ad is $5 for the first 120 words, $3 for each additional 20 or portion thereof. Ad deadline is the 25th of each month for publication in the following month's issue. Ad copy will not be taken by phone. *UpTime* shall not be held responsible for any transactions that take place in this section.

'Nobody Knows the Data I've Seen . . .'

Advertiser's Index

Burke & Burke 5
ColorSystems 3
Dekker 8
FARNA Systems 7
Glenside Club 4
Hawksoft 11
Infinitum Technology . 11
JWT Enterprises 7
Kala 11
Mid Iowa & Country C'b . 4
Sundog Systems 9
T&D Software 10

UpTime
JWT Enterprises
5755 Lockwood Blvd.
Youngstown, OH 44512

Address correction requested