

Dynamic Color News

Radio Shack Color Computer
Magazine

\$1.95

MAY 1988
ISSUE #49



PROGRAMS

OS-9

ROM ROUTINES

HAM RADIO

DYPRINT

Now you can print **LARGE** signs for special occasions such as birthdays, parties, or yard sales. Even make your own **FOR SALE** signs when you need to sell that old car or lawnmower. **BANNER** uses standard print characters and is compatible with any printer. The characters are formed by a 21 x 27 dot pattern and are printed sideways across the paper. The basic character can be expanded up to 4 times for making large characters up to a full page.

MAXPRINT allows graphics to be blown up and printed on a standard printer. Any **PMODE** 4 picture can be printed. The program supports all 8 graphics pages for a total of 12288 bytes. **MAXPRINT** prints 8 characters per byte for a total of 98304 characters. Blow up pictures of friends and family generated by the DS-69B or other digitizer or make posters announcing sales or special events.

The **DYPRINT** package contains both **BANNER** and **MAXPRINT**. The cost is only \$19.95

COLOR COMPUTER 2 KIT (SPECIAL PURCHASE)

Now you can build your own Color Computer 2. These kits were designed for a school and are complete with a step by step instruction manual plus the normal Radio Shack operating manuals. They use 4164 memory chips and sockets are included for all integrated circuits. If you have an older CC-1 or CC-2 then this is an excellent source for spare parts. Replacement parts would cost more than this kit. CC-2 Kit \$59.95.

SOFTWARE

Available on Tape or Disk

TERMINAL PROGRAM

DYTERM -Allows a Color Computer to interface with Modems, Terminals, or other Computers using the ASCII port. 300- 2400 baud, 1 or 2 Stop bits, 7 or 8 bit words, variable parity. \$9.95

COCOMAX II

(Closeout)

The best graphics program for the Color Computer 2. Draw a picture, label it, rotate it, copy it, and shrink it. Then print it on a graphics printer. Needs a "Y" cable or multipack expander for disk version.

COCOMAX II disk version \$59.95
Y cable 24.95

DS-69B DIGITIZER

Capture pictures from your VCR or video camera. Display them on the COCO 3's high resolution screen. Label them with **COCO MAX** and print them on a graphics printer or save them on disk. 256 x 256 resolution, 64 levels of grey, & 8 images per second. Plug in ROM pack requires a multipack expander. Works with all color computer disk systems. DS-69B \$149.95.

CC-THERM 2

CC-THERM 2 is a dual digital thermometer for Radio Shack Color Computers. It consists of two thermistors wired to the end of 10' and 20' flat cables for measuring inside and outside temperatures. The other end of the cable is wired to a joystick plug. The thermistors can be mounted on a wall, inside equipment, or outside for temperature measurements. Basic software on tape or disk continuously prints the temperature in both Fahrenheit and Centigrade. T or D software. \$19.95

CC-LT (new)

Now you can measure both temperature and light. The joystick assembly includes a light and temperature sensor at the end of a 20' flat cable. Uses one joystick plug. T or D Software 19.95.

128K MEMORIES For D, E, F, 285, or CC-2
(Memory Manager Software Included)

MR-10A - Upgrade CoCo-2 Computers with two 4464 chips to 128K. Specify T or D Software. \$49.95.

MR-12 - Upgrade 8-chip 4164 type 64K computers to 128K. Specify T or D Software. \$49.95.

DECIMAL ML ASSEMBLER

DISASM is a 6809 Assembler-Disassembler that allows machine codes to be assembled using English mnemonics & decimal arithmetic. It supports all 6809 codes and is especially useful for beginners. \$9.95.

VIDEO REVERSER

for the CC-2

Reduces eye strain by producing bright characters on a dark background. Integrated circuit mounts on the 6847 chip. Minor soldering required. \$9.95.

MEMORY MANAGER

(for the Color Computer 2)

Did you know that the 64K Color Computer 2 and earlier computers have an extra 32K that is generally not used? Our Memory Manager allows basic or machine language programs to be run in either 32K bank. Banks are exchanged with an EXEC command. Also the second bank can be used as a ramdisk to store programs. This makes cassette operation faster than a disk. A third option configures the computer for the all ram mode allowing data or programs to be stored in the upper memory. The Memory Manager software is available on either cassette or disk. \$19.95.

MEMORY SAVER II

Have you ever had a power failure or brownout to wipe out your program? The Memory Saver II is a battery backup assembly that prevents loss of programs due to power failures. It mounts under the keyboard and works with all color computers. Consists of gel rechargeable battery, control circuit, & miniature toggle switch. Will power a color computer for up to a couple of hours during a power failure. Price reduced. \$39.95

Add \$3 S/H Checks, VISA, & MC.

Dynamic Electronics Inc., Box 896, Hartselle, AL 35640

DYNAMIC COLOR NEWS

ON

Disk or Tape

Now you can have all of our editorials and programs for your tape or disk library. Programs are ready to load and run. We have a variety of programs such as games, geneology, home management, business, and utility programs. The editorials are saved with a 32 column width as a word processor file so you can review them on your screen or print them on your printer. Software is included for viewing the editorials. Combine each part of a series to form a booklet on each subject.

If you are interested in programming then study the examples given in our programming series. Example programs are included on disk or tape. We are covering both basic and assembly (machine language) programming. Suppose you want to use the extra memory in a 64K color computer. Then review the editorials and examples on managing the extra memory and run the memory manager programs.

Do you want to learn to interface your computer using the joystick port? We had a series on this with example programs for making a voltmeter, thermometer, ohmmeter, and light meter.

If your interest is ham radio then we have articles each month since August 1986. We covered Morse code, Antenna design, DX stations, Morse Keyer, Morse Terminal, and Radio Teletype with support programs.

We support the color computer 3 and have given programs for using the memory manager, graphics and error trapping.

All programs are ready to run and complement the editorials in the magazine. We have covered many subjects and there is much more to come. All of our back issues are available on disk or tape. See our cumulative index for a list of subjects. We also have program collections of key programs from past issues. See our advertisement in this issue.

COST

	USA & Can.	Foreign (Air)
1 year	\$60.00	\$75.00
6 months	35.00	49.00
1 month	6.95	8.95

Back issues are at the same rate. See our Cummulative index for subjects.

 * Please sign me up for one year for DYNAMIC COLOR NEWS. I want *
 * to receive instruction on programming, Computer Theory, Operating *
 * Techniques, Computer Expansion, plus information on New Products, *
 * Product Reviews, Programs and Answers to Questions. * * * * *
 * Magazine Subscription \$18 USA, \$20 Canada \$30 other foreign. *
 * Back issues \$1.95 each, 3 for \$5, 12 for \$18 including shipping. *
 * Disk or Tape Subscriptions are \$60 USA & Canada, (\$75) foreign. *
 * Single Copy \$6.95 (8.95), 6 for \$35 (49.00), 12 for \$60 (75.00) *
 * Send back issues _____ * * * * *
 * 10% club discounts for 5 or more subscriptions. * * * * *
 * Name _____ Mail payment to * * * * *
 * Address _____ Dynamic Electronics Inc * * * * *
 * City _____ P. O. Box 896 * * * * *
 * State & Zip _____ Hartselle, AL 35640 * * * * *
 * Enclosed is a check _____ Number _____ Exp. _____ * * * * *
 * charge to VISA _____ MC _____ * * * * *

DYNAMIC COLOR NEWS is published monthly by DYNAMIC ELECTRONICS, INC., P.O. Box 896, Hartselle, AL 35640, phone (205) 773-2758. Bill Chapple, BA, BSE President; Dean Chapple, Sec. & Treas.; John Pearson, Ph. D. Consultant.

Entire Contents (c) by DYNAMIC ELECTRONICS INC., 1988. DYNAMIC COLOR NEWS is intended for the private use of our subscribers and purchasers. All rights reserved. Contents of this magazine may not be copied in whole or in part without written permission from DYNAMIC ELECTRONICS INC. Subscriptions are \$18/yr for U.S.A. \$20 Canada & Mexico, \$30 other foreign.

The purpose of this magazine is to provide instruction on Basic & Machine Language programming, Computer theory, operating techniques, computer expansion, plus provide answers to questions from our subscribers.

The submission of questions, operating hints, and solutions to problems to be published in this magazine are encouraged. All submissions become the property of Dynamic Electronics if the material is used. We reserve the right to edit all material used and not to use material which we determine is unsuited for publication.

We encourage the submission of Basic and Machine Language Programs as well as articles. All Programs must be well documented so the readers can understand how the program works. We will pay for programs and articles based upon their value to the magazine. Material sent will not be returned unless return postage is included. Basic & ML programs should be sent on a tape or disk & comments should be sent as a DAT or TXT file.

```
*****
*
*   DYNAMIC COLOR NEWS
*
*   May 1988
*
*   Editor and Publisher
*   Bill Chapple W4GQC
*
*   Secretary
*   Dean Chapple
*
*****
```

CONTENTS

```
* Advance (Game) . . . . . 4
* The Marriage of Machine
  Language & Basic . 12
* Superspell (Program) . . . 15
# OS-9 & Basic 09 . . . . . 20
* Sink The Ships (Game) . . . 25
* Basketball Math (game) . . . 28
* Taking Control (Part 8) . . . 31
* Editor's Comments . . . . . 35
* Ham Radio & Computers . . . 37
* Ham Math Program . . . . . 37
* Product Reviews . . . . . 44
* Questions & Answers . . . . 45
  Bulletin Boards, Clubs,
  Advertiser's Index . . . . 47
* Included in DCN on Disk or Tape.
# OS-9 Programs included in DCN
  on DISK.
```



This is a monopoly type game where you try to be the first player to go around the board 10 times. There are pitfalls and rewards along the way. The blue box means good news and the red box means bad news. If you land on your opponents square then he moves back ten spaces. Instructions are printed on the screen for each player. This program is provided as a courtesy of T & D Subscription Software (See their ad on page 8) and is used by permission.

```

1 'THE GAME OF advance (C) 1987      T&D SOF
   TWARE
2 'CONCEIVED AND PROGRAMMED BY      BILL BE
   RNICO   AUGUST, 1987
3 '
4 '
10 CLS5:A=PEEK(116)*256+PEEK(117)-20:X=INT
   (A/256):Y=A-(X*256):POKE113,85:POKE114,
   X:POKE115,Y:FORI=A TO A+17:READ B:POKE
   I,B:NEXT I:DATA 18,182,255,3,138,1,183,
   255,3,189,173,33,189,172,239,126,173,15
   8:PMODE4,1:PCLS0:SCREEN1,1:PMODE3:PCLS2
20 PMODE4:COLOR0,1:LINE(108,90)-(134,100),
   PRESET,BF:DRAW"COBM112,98U6R3FDGL3R2F2D
   BR3NR4U3NR3U3R4BD6BR4NR3U6R3FD4G":IFINK
   EY$<>CHR$(13)THEN20
30 CLEAR800:CLS:PRINT"CAN YOU USE THE HIGH
   SPEED POKE [POKE 65495,0]? (Y/N)
40 A$=INKEY$:IF A$=""THEN40
50 IF A$="Y"THENPOKE65495,0:GOTO70
60 IF A$="N"THENPOKE65494,0:GOTO70ELSE40
70 CLS:INPUT"PLAYER ONE'S NAME";N$(1):INPU
   T"PLAYER TWO'S NAME";N$(2)
80 IF LEFT$(N$(2),1)=LEFT$(N$(1),1)THENCLS:
   PRINT"BOTH PLAYER'S NAMES CANNOT STARTW
   ITH THE SAME FIRST LETTER. ONE OF YOU W

```

```

   ILL HAVE TO USE ANOTHER NAME.",,,,,,,,,,"
   HIT ANY KEY TO START OVER":EXEC44539:GO
   TO30
90 IF LEN(N$(1))>6THENN$(1)=LEFT$(N$(1),6):
   PRINT:PRINT:PRINT"PLAYER #1'S NAME TOO
   LONG","SHORTENED TO ";N$(1)
100 IF LEN(N$(2))>6THENN$(2)=LEFT$(N$(2),6)
   :PRINT:PRINT:PRINT"PLAYER #2'S NAME TOO
   LONG","SHORTENED TO ";N$(2)
110 DD$="BM=HH; ,=VV;":Y$=LEFT$(N$(1),1):Z$
   =LEFT$(N$(2),1):PRINT@484,"HIT ENTER TO
   CONTINUE";:IF INKEY$<>CHR$(13)THEN110
120 CLS:PRINT"HIT ANY KEY TO FLIP COIN TO
   SEE WHO WILL GO FIRST.":EXEC44539
130 CF=RND(100):IF CF>49THEN PRINT@128,"HEA
   DS, "N$(1)" GOES FIRST":FORC=1TO1500:NE
   XTC
140 IF CF<50THENPRINT@128,"TAILS, "N$(2)" G
   OES FIRST":FORC=1TO1500:NEXTC
150 CLS:PRINT"HOW MUCH IS EACH SPACE WORTH
   ?",,,"A.) 1 CENT",,"B.) 10 CENTS",,"C.)
   1 DOLLAR",,"D.) 10 DOLLARS",,"E.) 100
   DOLLARS",,,"SELECT (A-E)
160 S$=INKEY$:IF S$=""THEN160
170 IF S$="A"THEN CC=100ELSEIF S$="B"THEN CC
   =10ELSEIF S$="C"THEN CC=1ELSEIF S$="D"THE
   N CC=.1ELSEIF S$="E"THEN CC=.01ELSE160
180 H=12:V=10:D$="BL4BUR22D22L22U22E4R22NG
   4D22NG4U22L22G4BF3":HH=128:VV=96:RI$=DD
   $+"R20NH2G2":LE$=DD$+"L20NE2F2":UP$=DD$
   +"U20NG2F2":DO$=DD$+"D20NH2E2":UR$=DD$+
   "E14NL3D3":LR$=DD$+"F14NU3L3":LL$=DD$+
   "G14NR3U3":UL$=DD$+"H14NR3D3
190 DIM A$(90):PMODE4,1:PCLS1:SCREEN1,1:COL
   OR0,1:A$(32)="BR5":A$(44)="BRBD4RD2GBU7
   BR5":A$(48)="BRRFD3GLHU3EBR5":A$(49)="B
   R2ND5NGBR3":A$(50)="BDERFDGLGDR3BU5BR3"
   :A$(51)="BDERFGFDGLHBU4BR6":A$(52)="D2R
   3NU2D3BU5BR3":A$(53)="NR3D2R2FDGLHBU4BR
   6

```

Dynamic Color News May 1988

```

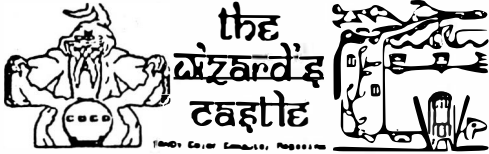
200 A$(54)="BR2LGDR2FDGLHUBU3BR6":A$(55)="
R3DG3DBU5BR6":A$(56)="BDERFGFDGLHUEBU2B
R5":A$(57)="BDNDERFD2NL2D2BU5BR3":A$(58)
="BR2DBD2DBU4BR3":A$(65)="BRRBFD2ND2L3
ND2U2UBR6":A$(66)="R2FGNLFDDL2U5BR6":A
$(67)="BR3BDHLGD3FREBU4BR3":A$(68)="R2F
D3GL2U5BR6
210 A$(69)="NR3D2NR2D3R3BU5BR3":A$(70)="NR
3D2NR2D3BU5BR6":A$(71)="BRNR2GD3FR2U2NL
BU3BR3":A$(72)="D2ND3R3ND3U2BR3":A$(73)
="BRR2GD4NLRBU5BR3":A$(74)="BR3D4GLHBU4
BR6":A$(75)="D2NF3DNE3D2BU5BR6":A$(76)=
"D5R3BU5BR3":A$(77)="ND5FDE2ND5BR3":A$(
39)="BR2ND2B
220 A$(78)="ND5F3D2U5BR3":A$(79)="D5R3U5L3
BR6":A$(80)="ND5R2FDGL2BU3BR6":A$(81)="
ND5R3D3BD2NL3HBU4BR5":A$(82)="ND5R2FGL2
F3BU5BR3":A$(83)="BRNR2GFRFDGLHBU4BR6":
A$(84)="R4L2ND5BR5":A$(85)="D4FREU4BR3"
:A$(86)="D4BFE2U3BR3":A$(87)="D5EUF2U5B
R3
230 A$(40)="BR2GD3FBU5BR3":A$(41)="BRFD3GB
U5BR4":A$(47)="BD5UE3UBR3":A$(45)="BD2R
3BU2BR3":A$(63)="BDERFG2BDBU5BR5":A$(8
8)="DNF2BR3NUG3NDBR3DBU5BR3":A$(89)="DF
RND3REUBR3":A$(90)="R3DG3DR3BU5BR3":A$(
46)="BD4BR2DBU5BR3":DT$="RDLU2R2D3L3U3F
":CB$="R10D6
240 A$(36)="BR2ND5DNRLGFRFGL2BU5BR6":DRAW"
BMO,0R255D191L255U191D24R255D24L255D24R
255D24L255D24R255D24L255D24R255L32ND24U
191L32D191L32U191L32D191L32U191L32D191L
32U191":LINE(32,25)-(222,167),PRESET,BF
250 LINE(32,25)-(222,167),PRESET,BF:CIRCLE
(240,12),3:CIRCLE(111,180),3
260 DRAW"BM73,9"+CB$+"BM234,81"+CB$+"BM11,
153"+CB$:POKE178,2:PAINT(75,10),,0:POKE
178,1:PAINT(236,82),,0:POKE178,0:PAINT(
13,154),0,0:DRAW"BM233,178NF3NE3RNE3NF3
UNR10D2NR10UR3NU3ND3R12L5NE3NF3RNE3NF3R
NE3NF3RNE3NF3RNE3NF3
270 A$="INSTRUCTIONS?(Y/N)":DRAW"BM70,40"
:GOSUB1240
280 I$=INKEY$:IFI$="Y"THENGOSUB1760ELSEIFI
$="N"THEN290ELSE280
290 A$=N$(1):DRAW"BM60,140":GOSUB1240:A$=N
$(2):DRAW"BM141,140":GOSUB1240:DRAW"BM6
0,147R50BR30R50":A$="LAPS:":DRAW"BM60
,150":GOSUB1240:DRAW"BM141,150":GOSUB12
40:A$="SPACES:":DRAW"BM60,158":GOSUB124
0:DRAW"BM141,158":GOSUB1240
300 GOSUB400:GOSUB830:IFC$>49THEN310ELSE74
0
310 GOSUB370:LINE(35,26)-(220,138),PRESET,
BF:A$=N$(1)+",PRESS "+Y$+"TO ROLL DIC
E":DRAW"BM40,28C0":GOSUB1240
320 R$=INKEY$:IFR$<>Y$THEN320
330 L=RND(6):DRAW"BM85,43"+D$:A=L:GOSUB116
0:R=RND(6):DRAW"BM135,43"+D$:A=R:GOSUB1
160:T=R+L:A$=N$(1)+"ADVANCES"+STR$(T)+
"SPACES":DRAW"BM52,70":GOSUB1240:Z=Z+T
:GOSUB400:GOSUB370:GOSUB820
340 IF B=G THEN J=J-10:GOSUB1260:GOSUB1910
:GOSUB1280:GOSUB830:GOSUB820
350 IFR=L THENDD=DD+1:A$=N$(1)+"ADVANCES"
+STR$(T)+"SPACES":DRAW"BM52,70C1":GOSU
B1240:GOSUB1370:A$=STR$(DD)+"DOUBLES..
.GO AGAIN":DRAW"BM63,70C0":GOSUB1240:FO
RAQ=1TO1000:NEXTAQ:GOTO310
360 DD=0:GOTO740
370 IFZ>279 THENQ=10:GOSUB1260:PLAY"O1T60C
EGBO2DFAO3CEGBO4DFAO5CEGB":C=(Z-J)/CC:A

```

```

$=STR$(Q)+"LAPS COMPLETED":DRAW"BM75,8
5C0":GOSUB1240:A$=N$(1)+"WINS $"+STR$(
C):DRAW"BM80,100C0":GOSUB1240:A$="PLAY
AGAIN(Y/N)?:DRAW"BM75,115":GOSUB1240
:GOTO1250
380 IFZ>251THENQ=9ELSEIFZ>223THENQ=8ELSEIF
Z>195THENQ=7ELSEIFZ>167THENQ=6ELSEIFZ>1
39THENQ=5ELSEIFZ>111THENQ=4ELSEIFZ>83TH
ENQ=3ELSEIFZ>55THENQ=2ELSEIFZ>27THENQ=1
390 RETURN
400 A$=Y$:DRAW"BM3,2C1":GOSUB1240:DRAW"BM4
4,2":GOSUB1240:DRAW"BM76,2":GOSUB1240:D
RAW"BM108,2":GOSUB1240:DRAW"BM140,2":GO
SUB1240:DRAW"BM172,2":GOSUB1240:DRAW"BM
204,2":GOSUB1240:DRAW"BM249,2":GOSUB124
0:DRAW"BM249,34":GOSUB1240:DRAW"BM249,5
8":GOSUB1240
410 DRAW"BM249,82":GOSUB1240:DRAW"BM249,10
6":GOSUB1240:DRAW"BM249,130":GOSUB1240:
DRAW"BM249,154":GOSUB1240:DRAW"BM249,18
4":GOSUB1240:DRAW"BM205,184":GOSUB1240:
DRAW"BM173,184":GOSUB1240:DRAW"BM141,18
4":GOSUB1240:DRAW"BM109,184":GOSUB1240
420 DRAW"BM77,184":GOSUB1240:DRAW"BM45,184
":GOSUB1240:DRAW"BM4,184":GOSUB1240:DR
AW"BM4,154":GOSUB1240:DRAW"BM4,130":GOSU
B1240:DRAW"BM4,106":GOSUB1240:DRAW"BM3,
81":GOSUB1240:DRAW"BM4,57":GOSUB1240:DR
AW"BM4,33":GOSUB1240
430 IFZ<0THENZ=0
440 IFZ=0ORZ=28ORZ=56ORZ=84ORZ=112ORZ=140O
RZ=168ORZ=196ORZ=224ORZ=252ORZ=280THENH
=3:V=2:B=0:GOSUB730:GOTO720
450 IFZ=1ORZ=29ORZ=57ORZ=85ORZ=113ORZ=141O
RZ=169ORZ=197ORZ=225ORZ=253THENH=44:V=2
:B=1:GOSUB730:GOTO720
460 IFZ=2ORZ=30ORZ=58ORZ=86ORZ=114ORZ=142O
RZ=170ORZ=198ORZ=226ORZ=254THENH=76:V=2
:B=2:GOSUB730:GOSUB1260:GOSUB1290:GOSUB
1280:GOTO720
470 IFZ=3ORZ=31ORZ=59ORZ=87ORZ=115ORZ=143O
RZ=171ORZ=199ORZ=227ORZ=255THENH=108:V=
2:B=3:GOSUB730:GOTO720
480 IFZ=4ORZ=32ORZ=60ORZ=88ORZ=116ORZ=144O
RZ=172ORZ=200ORZ=228ORZ=256THENH=140:V=
2:B=4:GOSUB730:GOTO720
490 IFZ=5ORZ=33ORZ=61ORZ=89ORZ=117ORZ=145O
RZ=173ORZ=201ORZ=229ORZ=257THENH=172:V=
2:B=5:GOSUB730:GOTO720
500 IFZ=6ORZ=34ORZ=62ORZ=90ORZ=118ORZ=146O
RZ=174ORZ=202ORZ=230ORZ=258THENH=204:V=
2:B=6:GOSUB730:GOTO720
510 IFZ=7ORZ=35ORZ=63ORZ=91ORZ=119ORZ=147O
RZ=175ORZ=203ORZ=231ORZ=259THENH=249:V=
2:B=7:GOSUB730:GOSUB1410:GOTO720
520 IFZ=8ORZ=36ORZ=64ORZ=92ORZ=120ORZ=148O
RZ=176ORZ=204ORZ=232ORZ=260THENH=249:V=
34:B=8:GOSUB730:GOTO720
530 IFZ=9ORZ=37ORZ=65ORZ=93ORZ=121ORZ=149O
RZ=177ORZ=205ORZ=233ORZ=261THENH=249:V=
58:B=9:GOSUB730:GOTO720
540 IFZ=10ORZ=38ORZ=66ORZ=94ORZ=122ORZ=150
ORZ=178ORZ=206ORZ=234ORZ=262THENH=249:V
=82:B=10:GOSUB730:GOSUB1260:GOSUB1300:G
OSUB1280:GOTO720
550 IFZ=11ORZ=39ORZ=67ORZ=95ORZ=123ORZ=151
ORZ=179ORZ=207ORZ=235ORZ=263THENH=249:V
=106:B=11:GOSUB730:GOTO720
560 IFZ=12ORZ=40ORZ=68ORZ=96ORZ=124ORZ=152
ORZ=180ORZ=208ORZ=236ORZ=264THENH=249:V
=130:B=12:GOSUB730:GOTO720
570 IFZ=13ORZ=41ORZ=69ORZ=97ORZ=125ORZ=153

```



"The WIZARD'S CASTLE" is a very special 'TANDY' 'Color Computer' magazine. We devote our entire magazine to the 'CoCo family'. Our articles include columns like: "Wizard's Corner", "Letters to the Editor", "Questions for the Wizard", "Pencil-Pals", "Wizard's Castle Scoreboard", "Word Search", "Post-It-Notes", "Programmers Corner", "Software Reviews", "Hardware Reviews", "Doctor CoCo", "Hardware Modifications", "Adventure Hints", and "BBS Updates". If you have been looking for a smaller more 'PERSONAL' version of a CoCo 'MAG' then we're 'EXACTLY' what you've been looking for. Remember we're exclusively for owners of any of Tandy's Color Computers. We support CoCo's 1, 2, and 3.

- Please send me 12 POWER PACKED issues
- of: "The WIZARD'S CASTLE" magazine
-
- USA ONLY!! for only \$10.00 per yr
- Canada ONLY! for only \$15.00 per yr
- Overseas for only \$30.00 per yr

FOR
 RUSH!
 ORDER
 SEE
 BELOW

.....
 • Please mail orders to:
 • "The WIZARD'S CASTLE"
 • Dept. #18
 • 1737 Farmville Road
 • Shelby, NC 28150
 •

Name:
 Address:
 City: St: Zip:
 Phone: (.....) -

 # We now have a 'BBS' devoted to #
 # 'Uploading' articles into our #
 # offices. You can place orders #
 # here also. BBS# (704)434-2629 #
 #####



Are you always running out of disks???? Do you dread paying \$1.50 or more per disk? Now, the answer to all of your disk problems can be answered here at the 'CASTLE'. We are offering only premium quality DSDD diskettes at under \$1.00 each. These are 'TOP QUALITY' guaranteed disks. If you ever get a bad one, just send it back for replacement. We will sell these disks in quantities of 10, 25, 50, or even 100 per pk. Prices each will be cheaper depending upon amount purchased. This brand of disks is one all of our members have used for over four years. We hardly ever find '1' bad disk for every purchase we make. If you are tired of paying top dollar for

disks then try just one order from us. You don't have anything to lose and only \$MONEY\$\$ to save.

- Please send me:
-
- 10 DSDD Disks for only \$ 7.50 total
- 25 DSDD Disks for only \$15.00 total
- 50 DSDD Disks for only \$25.00 total
- 100 DSDD Disks for only \$45.00 total

SAVE!
 \$MONEY\$\$
 ORDER
 THE
 DISKS
 TODAY!!

.....
 • Please mail orders to:
 • "The WIZARD'S CASTLE"
 • Disks Dept. #18
 • 1737 Farmville Road
 • Shelby, NC 28150
 •

Name:
 Address:
 City: St: Zip:
 Phone: (.....) -

NOTICE!
 #####
 # We now have a 'BBS' devoted to #
 # 'Uploading' articles into our #
 # offices. You can place orders #
 # here also. BBS# (704)434-2629 #
 #####

Dynamic Color News May 1988

```

ORZ=181ORZ=209ORZ=237ORZ=265THENH=249:V
=154:B=13:GOSUB730:GOTO720
580 IFZ=14ORZ=42ORZ=70ORZ=98ORZ=126ORZ=154
ORZ=182ORZ=210ORZ=238ORZ=266THENH=249:V
=184:B=14:GOSUB730:GOSUB1260:GOSUB1320:
GOSUB1280:GOTO720
590 IFZ=15ORZ=43ORZ=71ORZ=99ORZ=127ORZ=155
ORZ=183ORZ=211ORZ=239ORZ=267THENH=205:V
=184:B=15:GOSUB730:GOTO720
600 IFZ=16ORZ=44ORZ=72ORZ=100ORZ=128ORZ=15
6ORZ=184ORZ=212ORZ=240ORZ=268THENH=173:
V=184:B=16:GOSUB730:GOTO720
610 IFZ=17ORZ=45ORZ=73ORZ=101ORZ=129ORZ=15
7ORZ=185ORZ=213ORZ=241ORZ=269THENH=141:
V=184:B=17:GOSUB730:GOTO720
620 IFZ=18ORZ=46ORZ=74ORZ=102ORZ=130ORZ=15
8ORZ=186ORZ=214ORZ=242ORZ=270THENH=109:
V=184:B=18:GOSUB730:GOSUB1410:GOTO720
630 IFZ=19ORZ=47ORZ=75ORZ=103ORZ=131ORZ=15
9ORZ=187ORZ=215ORZ=243ORZ=271THENH=77:V
=184:B=19:GOSUB730:GOTO720
640 IFZ=20ORZ=48ORZ=76ORZ=104ORZ=132ORZ=16
0ORZ=188ORZ=216ORZ=244ORZ=272THENH=45:V
=184:B=20:GOSUB730:GOTO720
650 IFZ=21ORZ=49ORZ=77ORZ=105ORZ=133ORZ=16
1ORZ=189ORZ=217ORZ=245ORZ=273THENH=4:V=
184:B=21:GOSUB730:GOTO720
660 IFZ=22ORZ=50ORZ=78ORZ=106ORZ=134ORZ=16
2ORZ=190ORZ=218ORZ=246ORZ=274THENH=4:V=
154:B=22:GOSUB730:GOSUB1260:GOSUB1310:G
OSUB1280:GOTO310
670 IFZ=23ORZ=51ORZ=79ORZ=107ORZ=135ORZ=16
3ORZ=191ORZ=219ORZ=247ORZ=275THENH=4:V=
130:B=23:GOSUB730:GOTO720
680 IFZ=24ORZ=52ORZ=80ORZ=108ORZ=136ORZ=16
4ORZ=192ORZ=220ORZ=248ORZ=276THENH=4:V=
106:B=24:GOSUB730:GOTO720
690 IFZ=25ORZ=53ORZ=81ORZ=109ORZ=137ORZ=16
5ORZ=193ORZ=221ORZ=249ORZ=277THENH=3:V=
81:B=25:GOSUB730:GOTO720
700 IFZ=26ORZ=54ORZ=82ORZ=110ORZ=138ORZ=16
6ORZ=194ORZ=222ORZ=250ORZ=278THENH=4:V=
57:B=26:GOSUB730:GOTO720
710 IFZ=27ORZ=55ORZ=83ORZ=111ORZ=139ORZ=16
7ORZ=195ORZ=223ORZ=251ORZ=279THENH=4:V=
33:B=27:GOSUB730:GOTO720
720 RETURN
730 A$=Y$:DRAW"COBM=H; , =V; ":SOUND150,1:GOS
UB1240:RETURN
740 GOSUB800:LINE(35,26)-(220,138),PRESET,
BF:A$=N$(2)+", PRESS"+Z$+" TO ROLL DIC
E":DRAW"BM40,28C0":GOSUB1240
750 R$=INKEY$:IFR$<>Z$THEN750
760 L=RND(6):DRAW"BM85,43"+D$:A=L:GOSUB116
0:R=RND(6):DRAW"BM135,43"+D$:A=R:GOSUB1
160:T=R+L:A$=N$(2)+ " ADVANCES"+STR$(T)+
" SPACES":DRAW"BM52,70":GOSUB1240:J=J+T
:GOSUB830:GOSUB800:GOSUB820
770 IF G=B THEN Z=Z-10:GOSUB1260:GOSUB1900
:GOSUB1280:GOSUB400:GOSUB820
780 IFR=L THENDD=DD+1:A$=N$(2)+ " ADVANCES"
+STR$(T)+ " SPACES":DRAW"BM52,70C1":GOSU
B1240:GOSUB1390:A$=STR$(DD)+ " DOUBLES. .
.GO AGAIN":DRAW"BM63,70C0":GOSUB1240:FO
RAQ=1TO1000:NEXTAQ:GOTO740
790 DD=0:GOTO310
800 IFJ>279 THENK=10:GOSUB1260:PLAY"O1T30C
EGBO2DFAO3CEGBO4DFAO5CEGB":W=(J-Z)/CC:A
$=STR$(K)+ " LAPS COMPLETED":DRAW"BM75,8
5C0":GOSUB1240:A$=N$(2)+ " WINS $" +STR$(
W):DRAW"BM80,100":GOSUB1240:A$="PLAY AG
AIN (Y/N) ?":DRAW"BM75,115":GOSUB1240:G
OTO1250
810 IFJ>251THENK=9ELSEIFJ>223THENK=8ELSEIF
J>195THENK=7ELSEIFJ>167THENK=6ELSEIFJ>1
39THENK=5ELSEIFJ>111THENK=4ELSEIFJ>83TH
ENK=3ELSEIFJ>55THENK=2ELSEIFJ>27THENK=1
ELSEReturn
820 LINE(100,149)-(128,165),PRESET,BF:A$=S
TR$(Q):DRAW"BM102,150":GOSUB1240:A$=STR
$(Z):DRAW"BM102,158":GOSUB1240:LINE(180
,149)-(208,165),PRESET,BF:A$=STR$(K):DR
AW"BM182,150":GOSUB1240:A$=STR$(J):DRAW
"BM182,158":GOSUB1240:RETURN
830 A$=Z$:DRAW"BM25,17C1":GOSUB1240:DRAW"B
M44,17":GOSUB1240:DRAW"BM76,17":GOSUB12
40:DRAW"BM108,17":GOSUB1240:DRAW"BM140,
17":GOSUB1240:DRAW"BM172,17":GOSUB1240:
DRAW"BM204,17":GOSUB1240:DRAW"BM226,17"
:GOSUB1240:DRAW"BM226,34":GOSUB1240:DRA
W"BM226,58
840 GOSUB1240:DRAW"BM226,82":GOSUB1240:DRA
W"BM226,106":GOSUB1240:DRAW"BM226,130":
GOSUB1240:DRAW"BM226,154":GOSUB1240:DRA
W"BM226,170":GOSUB1240:DRAW"BM205,170":
GOSUB1240:DRAW"BM173,170":GOSUB1240:DRA
W"BM141,170":GOSUB1240:DRAW"BM109,170":
GOSUB1240
850 DRAW"BM77,170":GOSUB1240:DRAW"BM45,170
":GOSUB1240:DRAW"BM25,170":GOSUB1240:DR
AW"BM25,153":GOSUB1240:DRAW"BM25,129":G
OSUB1240:DRAW"BM25,105":GOSUB1240:DRAW"
BM25,81":GOSUB1240:DRAW"BM25,57":GOSUB1
240:DRAW"BM25,33":GOSUB1240
860 IFJ<0THENJ=0
870 IFJ=0ORJ=28ORJ=56ORJ=84ORJ=112ORJ=140O
RJ=168ORJ=196ORJ=224ORJ=252ORJ=280THENH
=25:V=17:G=0:GOSUB1230:GOTO1150
880 IFJ=1ORJ=29ORJ=57ORJ=85ORJ=113ORJ=141O
RJ=169ORJ=197ORJ=225ORJ=253THENH=44:V=1
7:G=1:GOSUB1230:GOTO1150
890 IFJ=2ORJ=30ORJ=58ORJ=86ORJ=114ORJ=142O
RJ=170ORJ=198ORJ=226ORJ=254THENH=76:V=1
7:G=2:GOSUB1230:GOSUB1260:GOSUB1330:GOS
UB1280:GOTO1150
900 IFJ=3ORJ=31ORJ=59ORJ=87ORJ=115ORJ=143O
RJ=171ORJ=199ORJ=227ORJ=255THENH=108:V=
17:G=3:GOSUB1230:GOTO1150
910 IFJ=4ORJ=32ORJ=60ORJ=88ORJ=116ORJ=144O
RJ=172ORJ=200ORJ=228ORJ=256THENH=140:V=
17:G=4:GOSUB1230:GOTO1150
920 IFJ=5ORJ=33ORJ=61ORJ=89ORJ=117ORJ=145O
RJ=173ORJ=201ORJ=229ORJ=257THENH=172:V=
17:G=5:GOSUB1230:GOTO1150
930 IFJ=6ORJ=34ORJ=62ORJ=90ORJ=118ORJ=146O
RJ=174ORJ=202ORJ=230ORJ=258THENH=204:V=
17:G=6:GOSUB1230:GOTO1150
940 IFJ=7ORJ=35ORJ=63ORJ=91ORJ=119ORJ=147O
RJ=175ORJ=203ORJ=231ORJ=259THENH=226:V=
17:G=7:GOSUB1230:GOSUB1510:GOTO1150
950 IFJ=8ORJ=36ORJ=64ORJ=92ORJ=120ORJ=148O
RJ=176ORJ=204ORJ=232ORJ=260THENH=226:V=
34:G=8:GOSUB1230:GOTO1150
960 IFJ=9ORJ=37ORJ=65ORJ=93ORJ=121ORJ=149O
RJ=177ORJ=205ORJ=233ORJ=261THENH=226:V=
58:G=9:GOSUB1230:GOTO1150
970 IFJ=10ORJ=38ORJ=66ORJ=94ORJ=122ORJ=150
ORJ=178ORJ=206ORJ=234ORJ=262THENH=226:V
=82:G=10:GOSUB1230:GOSUB1260:GOSUB1340:
GOSUB1280:GOTO1150
980 IFJ=11ORJ=39ORJ=67ORJ=95ORJ=123ORJ=151
ORJ=179ORJ=207ORJ=235ORJ=263THENH=226:V

```


=106:G=11:GOSUB1230:GOTO1150
 990 IFJ=120RJ=400RJ=680RJ=960RJ=1240RJ=152
 ORJ=1800RJ=2080RJ=2360RJ=264THENH=226:V
 =130:G=12:GOSUB1230:GOTO1150
 1000 IFJ=130RJ=410RJ=690RJ=970RJ=1250RJ=15
 30RJ=1810RJ=2090RJ=2370RJ=265THENH=226:
 V=154:G=13:GOSUB1230:GOTO1150
 1010 IFJ=140RJ=420RJ=700RJ=980RJ=1260RJ=15
 40RJ=1820RJ=2100RJ=2380RJ=266THENH=226:
 V=170:G=14:GOSUB1230:GOSUB1260:GOSUB136
 0:GOSUB1280:GOTO1150
 1020 IFJ=150RJ=430RJ=710RJ=990RJ=1270RJ=15
 50RJ=1830RJ=2110RJ=2390RJ=267THENH=205:
 V=170:G=15:GOSUB1230:GOTO1150
 1030 IFJ=160RJ=440RJ=720RJ=1000RJ=1280RJ=1
 560RJ=1840RJ=2120RJ=2400RJ=268THENH=173
 :V=170:G=16:GOSUB1230:GOTO1150
 1040 IFJ=170RJ=450RJ=730RJ=1010RJ=1290RJ=1
 570RJ=1850RJ=2130RJ=2410RJ=269THENH=141
 :V=170:G=17:GOSUB1230:GOTO1150
 1050 IFJ=180RJ=460RJ=740RJ=1020RJ=1300RJ=1
 580RJ=1860RJ=2140RJ=2420RJ=270THENH=109
 :V=170:G=18:GOSUB1230:GOSUB1510:GOTO115
 0
 1060 IFJ=190RJ=470RJ=750RJ=1030RJ=1310RJ=1
 590RJ=1870RJ=2150RJ=2430RJ=2711THENH=77
 :V=170:G=19:GOSUB1230:GOTO1150
 1070 IFJ=200RJ=480RJ=760RJ=1040RJ=1320RJ=1
 600RJ=1880RJ=2160RJ=2440RJ=272THENH=45:
 V=170:G=20:GOSUB1230:GOTO1150

1080 IFJ=210RJ=490RJ=770RJ=1050RJ=1330RJ=1
 610RJ=1890RJ=2170RJ=2450RJ=273THENH=25:
 V=170:G=21:GOSUB1230:GOTO1150
 1090 IFJ=220RJ=500RJ=780RJ=1060RJ=1340RJ=1
 620RJ=1900RJ=2180RJ=2460RJ=274THENH=25:
 V=153:G=22:GOSUB1230:GOSUB1260:GOSUB135
 0:GOSUB1280:GOTO740
 1100 IFJ=230RJ=510RJ=790RJ=1070RJ=1350RJ=1
 630RJ=1910RJ=2190RJ=2470RJ=275THENH=25:
 V=129:G=23:GOSUB1230:GOTO1150
 1110 IFJ=240RJ=520RJ=800RJ=1080RJ=1360RJ=1
 640RJ=1920RJ=2200RJ=2480RJ=276THENH=25:
 V=105:G=24:GOSUB1230:GOTO1150
 1120 IFJ=250RJ=530RJ=810RJ=1090RJ=1370RJ=1
 650RJ=1930RJ=2210RJ=2490RJ=277THENH=25:
 V=81:G=25:GOSUB1230:GOTO1150
 1130 IFJ=260RJ=540RJ=820RJ=1100RJ=1380RJ=1
 660RJ=1940RJ=2220RJ=2500RJ=278THENH=25:
 V=57:G=26:GOSUB1230:GOTO1150
 1140 IFJ=270RJ=550RJ=830RJ=1110RJ=1390RJ=1
 670RJ=1950RJ=2230RJ=2510RJ=279THENH=25:
 V=33:G=27:GOSUB1230:GOTO1150
 1150 RETURN
 1160 IFA=1THENDRAW"BR7BD8"+DT\$
 1170 IFA=2THENDRAW"BR2BD2"+DT\$+"BR10BD12"+
 DT\$
 1180 IFA=3THENDRAW"BR2BD2"+DT\$+"BR5BD6"+DT
 \$+"BR5BD6"+DT\$
 1190 IFA=4THENDRAW"BR2BD2"+DT\$+"BR10BD12"+
 DT\$+"BU12"+DT\$+"BD12BL10"+DT\$

SPECIAL DEAL ON 500 PROGRAMS!

GET 50 DISKS OR 50 CASSETTE TAPES FULL OF OVER 500 PROGRAMS. HERE IS WHAT YOU'LL RECEIVE:

- * Over 250 Utility/Home Application Programs including a Word Processor, DataBase, Spreadsheet, Account Manager, 2 Basic Compilers, Terminal Programs, ROM Copies, Mail List, Machine Language Tutorials, Plus Much More!
- * Over 200 exciting games including Warlords, Star Trek, Super Vaders, Solar Conquest, Horse Races, Football, Baseball, Frog Jump, Invader, Plus Much More! (Many machine language games)
- * Over 30 adventures including The College Adventure, Dungeon Master, Space Lab, Ice World, Ship Wreck, Zigma Experiment. Plus 32K Graphic Adventures.

EACH INDIVIDUAL ISSUE SOLD FOR \$9.00 EACH OR \$450 FOR ALL 50 ISSUES. WE SLASHED THE PRICE TO ONLY 149⁹⁹

REG. \$450

NOW \$149⁹⁹

★THIS MONTH ONLY★

Buy this package of 500 programs and receive a free 6 month subscription. (A \$35 value)



Available on COCO 1, 2 and 3!
 All Programs Include Documentation!



THE GREATEST SOFTWARE DEAL ON EARTH JUST GOT BETTER!

THAT'S RIGHT! THIS MONTH WE'VE DROPPED OUR YEARLY SUBSCRIPTION RATE AN UNBELIEVABLE *10.00 TO ENTICE YOU INTO SUBSCRIBING WITH US. GET 12 DISKS OR TAPES A YEAR CONTAINING OVER 120 QUALITY PROGRAMS. A SUBSCRIPTION TO T & D SOFTWARE CONSISTS OF 10 READY-TO-LOAD PROGRAMS DELIVERED BY FIRST CLASS MAIL EVERY MONTH. NO WE ARE NOT THE SAME AS THE RAINBOW ON TAPE. IN FACT, MANY SUBSCRIBERS HAVE WRITTEN IN AND SAID THAT WE ARE MUCH BETTER THAN RAINBOW ON TAPE!



	TAPE OR DISK	THIS MONTH ONLY
1 YEAR (12 Issues)	28.00	60.00
6 MO. (6 Issues)	18.00	35.00
1 ISSUE	3.00	8.00

Michigan Residents Add 4%
 *Overseas Add \$10 to Subscription Price
 Personal Checks Welcome!

- * 16K-64K Color Computer
- * Over 4000 Satisfied Customers
- * Back Issues Available From
- * July '82 (Over 500 Programs)

OUR LATEST ISSUE CONTAINED

1. Accounts Receivable
2. Work Mate
3. Calendar
4. Invasion
5. Trip Adventure
6. Foot Race
7. Flippy the Seal
8. Screen Calculator
9. Able Builders
10. Super Error 2

T & D SUBSCRIPTION SOFTWARE, 2490 MILES STANDISH DR., HOLLAND, MI 49424 (616) 399-9648

```

1200 IFA=5THENDRAW"BR2BD2"+DT$+"BR10BD12"+
    DT$+"BU12"+DT$+"BD12BL10"+DT$+"BU6BR5"+
    DT$
1210 IFA=6THENDRAW"BR2BD2"+DT$+"BD6"+DT$+"
    BD6"+DT$+"BR10"+DT$+"BU6"+DT$+"BU6"+DT$
1220 RETURN
1230 A$=Z$:DRAW"COBM=H; ,=V; ":SOUND191,1:GO
    SUB1240:RETURN
1240 FORX=1TOLEN(A$):Y=ASC(MID$(A$,X,1)):D
    RAW$(Y):NEXT:RETURN
1250 GH$=INKEY$:IFGH$="Y"THENRUNELSEIFGH$=
    "N"THENCLS:POKE65494,0:ENDELSE1250
1260 COLOR0,1:WW=84:XX=109:YY=171:ZZ=106
1270 FORJK=1TO30:LINE(WW,XX)-(YY,ZZ),PSET,
    B:LINE(WW,XX)-(YY,ZZ),PRESET,B:WW=WW-1:
    XX=XX-1:YY=YY+1:ZZ=ZZ+1:EXEC43345:NEXTJ
    K:LINE(WW,XX)-(YY,ZZ),PSET,B:RETURN
1280 FORJK=1TO30:LINE(WW,XX)-(YY,ZZ),PSET,
    B:LINE(WW,XX)-(YY,ZZ),PRESET,B:WW=WW+1:
    XX=XX+1:YY=YY-1:ZZ=ZZ-1:EXEC43345:NEXTJ
    K:LINE(80,105)-(173,110),PRESET,BF:GOSU
    B370:RETURN
1290 LINE(57,82)-(198,133),PSET,B:POKE178,
    2:PAINT(55,80),,0:POKE178,0:RS=RND(6)+1
    :A$="GO AHEAD"+STR$(RS)+" SPACES":DRAW"
    BM79,105":GOSUB1240:Z=Z+RS:GOSUB400:RET
    URN
1300 LINE(57,82)-(198,133),PSET,B:POKE178,
    1:PAINT(55,80),,0:POKE178,0:SR=RND(6)+1
    :A$="GO BACK"+STR$(SR)+" SPACES":DRAW"B
    M83,105":GOSUB1240:Z=Z-SR:GOSUB400:RETU
    RN
1310 LINE(57,82)-(198,133),PSET,B:PAINT(55
    ,80),0,0:A$="...BONUS TIME...":DRAW"BM8
    4,100":GOSUB1240:A$="TAKE ANOTHER TURN"
    :DRAW"BM77,110":GOSUB1240:FORAQ=1TO1000
    :NEXTAQ:RETURN
1320 LINE(57,82)-(198,133),PSET,B:A$="SLID
    E AHEAD TO":DRAW"BM85,100":GOSUB1240:A$
    ="NEXT CORNER":DRAW"BM95,110":GOSUB1240
    :Z=Z+7:GOSUB400:RETURN
1330 LINE(57,82)-(198,133),PSET,B:POKE178,
    2:PAINT(55,80),,0:POKE178,0:RS=RND(6)+1
    :A$="GO AHEAD"+STR$(RS)+" SPACES":DRAW"
    BM79,105":GOSUB1240:J=J+RS:GOSUB830:RET
    URN
1340 LINE(57,82)-(198,133),PSET,B:POKE178,
    1:PAINT(55,80),,0:POKE178,0:SR=RND(6)+1
    :A$="GO BACK"+STR$(SR)+" SPACES":DRAW"B
    M83,105":GOSUB1240:J=J-SR:GOSUB830:RETU
    RN
1350 LINR(57,82)-(198,133),PSET,B:PAINT(55
    ,80),0,0:A$="...BONUS TIME...":DRAW"BM8
    4,100":GOSUR1240:A$="TAKE ANOTHER TURN"
    :DRAW"BM77,110":GOSUB1240:FORAQ=1TO1000
    :NEXTAQ:RETURN
1360 LINE(57,82)-(198,133),PSET,B:A$="SLID
    E AHEAD TO":DRAW"BM85,100":GOSUB1240:A$
    ="NEXT CORNER":DRAW"BM95,110":GOSUB1240
    :J=J+7:GOSUB830:RETURN
1370 IFDD<3THENLINE(50,68)-(200,90),PRESET
    ,BF:A$="3 DOUBLES IN A ROW":DRAW"BM56,7
    0C0":GOSUB1240:A$="LOSE ONE WHOLE LAP":
    DRAW"BM56,80":GOSUB1240:Z=Z-28:GOSUB400
    :GOSUB370:GOSUB820:GOTO360
1380 IFDD<3THENRETURN
1390 IFDD=3THENLINE(50,68)-(200,90),PRESET
    ,BF:A$="3 DOUBLES IN A ROW":DRAW"BM56,7
    0C0":GOSUB1240:A$="LOSE ONE WHOLE LAP":
    DRAW"BM56,80":GOSUB1240:J=J-28:GOSUB830
    :GOSUB800:GOSUB820:GOTO790
1400 IFDD<3THENRETURN
1410 LINE(35,38)-(220,138),PRESET,BF:A$="K
    EEP OR PASS (K/P) ?":DRAW"BM65,90":GOSU
    B1240
1420 KP$=INKEY$:IFKP$="K"THEN1430ELSEIFKP$
    ="P"THEN1530ELSE1420
1430 GOSUB1720:A$="HIT S TO STOP SPINNING"
    :DRAW"BM65,50":GOSUB1240
1440 GOSUB1610
1450 IFINKEY$<>"S"THEN1440
1460 GOSUB1630
1470 A$="HIT S TO STOP SPINNING":DRAW"BM65
    ,50C1":GOSUB1240
1480 SS=SS*2:SW=RND(100):IFSW>49THEN1500
1490 A$=N$(1)+" ADVANCES"+STR$(SS)+" SPACE
    S":DRAW"BM55,50C0":GOSUB1240:Z=Z+SS:FOR
    YU=1TO1000:NEXTYU:LINE(35,26)-(220,138)
    ,PRESET,BF:GOSUB400:RETURN
1500 A$=N$(1)+" LOSES"+STR$(SS)+" SPACES":
    DRAW"BM60,50C0":GOSUB1240:Z=Z-SS:FORYU=
    1TO1000:NEXTYU:LINE(35,26)-(220,138),PR
    ESET,BF:GOSUB400:RETURN
1510 LINE(35,38)-(220,138),PRESET,BF:A$="K
    EEP OR PASS (K/P) ?":DRAW"BM65,90":GOSU
    B1240
1520 KP$=INKEY$:IFKP$="K"THEN1530ELSEIFKP$
    ="P"THEN1430ELSE1520
1530 GOSUB1720:A$="HIT S TO STOP SPINNING
    ":DRAW"BM65,50":GOSUB1720
1540 GOSUB1610
1550 IFINKEY$<>"S"THEN1540
1560 GOSUB1630
1570 A$="HIT S TO STOP SPINNING":DRAW"BM65
    ,50C1":GOSUB1240
1580 SS=SS*2:SW=RND(100):IFSW>49THEN1600
1590 A$=N$(2)+" ADVANCES"+STR$(SS)+" SPACE
    S":DRAW"BM55,50C0":GOSUB1240:J=J+SS:FOR
    YU=1TO1000:NEXTYU:LINE(35,26)-(220,138)
    ,PRESET,BF:GOSUB830:RETURN
1600 A$=N$(2)+" LOSES"+STR$(SS)+" SPACES":
    DRAW"BM60,50C0":GOSUB1240:J=J-SS:FORYU=
    1TO1000:NEXTYU:LINE(35,26)-(220,138),PR
    ESET,BF:GOSUB830:RETURN
1610 DRAW"CO"+RI$:GOSUB1750:DRAW"C1"+RI$:G
    OSUB1750:DRAW"CO"+LR$:GOSUB1750:DRAW"C1
    "+LR$:GOSUB1750:DRAW"CO"+DO$:GOSUB1750:
    DRAW"C1"+DO$:GOSUB1750:DRAW"CO"+LL$:GOS
    UB1750:DRAW"C1"+LL$:GOSUB1750:DRAW"CO"+
    LE$:GOSUB1750:DRAW"C1"+LE$:GOSUB1750
1620 DRAW"CO"+UL$:GOSUB1750:DRAW"C1"+UL$:G
    OSUB1750:DRAW"CO"+UP$:GOSUB1750:DRAW"C1
    "+UP$:GOSUB1750:DRAW"CO"+UR$:GOSUB1750:
    DRAW"C1"+UR$:GOSUB1750:RETURN
1630 SS=RND(8):ON SS GOSUB1640,1650,1660,1
    670,1680,1690,1700,1710:RETURN
1640 DRAW"CO"+UP$:RETURN
1650 DRAW"CO"+UR$:RETURN
1660 DRAW"CO"+RI$:RETURN
1670 DRAW"CO"+LR$:RETURN
1680 DRAW"CO"+DO$:RETURN
1690 DRAW"CO"+LL$:RETURN
1700 DRAW"CO"+LE$:RETURN
1710 DRAW"CO"+UL$:RETURN
1720 LINE(35,38)-(220,138),PRESET,BF:LINE(
    90,59)-(165,133),PSET,B:CIRCLE(128,96),
    25:DRAW"BM126,63"+A$(49)+"BM148,73"+A$(
    50)+"BM156,93"+A$(51)+"BM150,112"+A$(52
    )+"BM126,124"+A$(53)+"BM104,112"+A$(54)
    +"BM96,93"+A$(55)+"BM104,73"+A$(56)
1730 GOSUB370:GOSUB800
1740 A$="DOUBLE POINT VALUE":DRAW"BM78,40C

```

```

0":GOSUB1240:RETURN
1750 EXEC43345:RETURN
1760 LINE(32,25)-(222,167),PRESET,BF:A$="T
HIS IS THE GAME OF 'ADVANCE':DRAW"BM42
,30":GOSUB1240:A$="THE OBJECT OF THE GA
ME IS TO":DRAW"BM42,50":GOSUB1240:A$="B
E THE FIRST PLAYER TO TRAVEL":DRAW"BM42
,60":GOSUB1240:A$="AROUND THE BOARD TEN
TIMES."
1770 DRAW"BM42,70":GOSUB1240:A$="IT'S NOT
AS EASY AS IT SOUNDS.":DRAW"BM42,80":GO
SUB1240:A$="THERE ARE PITFALLS AND REWA
RDS":DRAW"BM42,90":GOSUB1240:A$="ALONG
THE WAY. FOR EXAMPLE,":DRAW"BM42,100":G
OSUB1240:A$="THE BLUE BOX MEANS GOOD NE
WS.
1780 DRAW"BM42,110":GOSUB1240:A$="THE PLAY
ER WILL ADVANCE A FEW":DRAW"BM42,120":G
OSUB1240:A$="SPACES IF THEY LAND ON IT.
THE":DRAW"BM42,130":GOSUB1240:A$="RED
BOX MEANS BAD NEWS.":DRAW"BM42,140":GOS
UB1240:A$="HIT ANY KEY TO CONTINUE
1790 DRAW"BM60,158":GOSUB1240:EXEC44539:LI
NE(32,25)-(222,167),PRESET,BF:A$="IF A
PLAYER LANDS ON THE RED":DRAW"BM42,30":
GOSUB1240:A$="BOX, THEY MUST GO BACK A
FEW":DRAW"BM42,40":GOSUB1240:A$="SPACES
. LANDING ON THE BLACK":DRAW"BM42,50":G
OSUB1240
1800 A$="BOX WILL ALLOW YOU ONE FREE":DRAW
"BM42,60":GOSUB1240:A$="TURN. LANDING O
N THE BLACK":DRAW"BM42,70":GOSUB1240:A$
="ARROW WILL ALLOW A PLAYER TO":DRAW"BM
42,80":GOSUB1240:A$=" 'SLIDE' AHEAD TO T
HE NEXT":DRAW"BM42,90":GOSUB1240
1810 A$="CORNER, A GAIN OF 7 SPACES.":DRAW
"BM42,100":GOSUB1240:A$="LANDING ON EIT
HER ONE OF THE":DRAW"BM42,110":GOSUB124
0:A$="SMALL CIRCLES WILL ALLOW THE":DRA
W"BM42,120":GOSUB1240:A$="PLAYER TO EIT
HER 'KEEP' OR":DRAW"BM42,130":GOSUB1240
1820 A$=" 'PASS' THIS PLAY.":DRAW"BM42,140"
:GOSUB1240:A$="HIT ANY KEY TO CONTINUE"
:DRAW"BM60,158":GOSUB1240:EXEC44539:LIN
E(32,25)-(222,167),PRESET,BF:A$="IN EIT
HER CASE, A DIAL WILL":DRAW"BM42,30":GO
SUB1240:A$="APPEAR ON THE SCREEN WITH
1830 DRAW"BM42,40":GOSUB1240:A$="NUMBERS F

```

```

ROM ONE TO EIGHT.":DRAW"BM42,50":GOSUB1
240:A$="AN ARROW WILL CONTINUE TO SPIN"
:DRAW"BM42,60":GOSUB1240:A$="AROUND INS
IDE IT. HITTING 'S':DRAW"BM42,70":GOS
UB1240:A$="WILL STOP THE ARROW RANDOMLY
1840 DRAW"BM42,80":GOSUB1240:A$="ON A NUMB
ER. THE PLAYER WILL":DRAW"BM42,90":GOSU
B1240:A$="HAVE DOUBLE THAT AMOUNT ADDED
":DRAW"BM42,100":GOSUB1240:A$="TO OR SU
BTRACTED FROM THEIR":DRAW"BM42,110":GOS
UB1240:A$="NUMBER OF SPACES, SO IT MIGH
T
1850 DRAW"BM42,120":GOSUB1240:A$="SOMETIME
S BE GOOD STRATEGY TO":DRAW"BM42,130":G
OSUB1240:A$=" 'PASS' TO THE OTHER PLAYER
IF":DRAW"BM42,140":GOSUB1240:A$="HIT A
NY KEY TO CONTINUE":DRAW"BM60,158":GOSU
B1240:EXEC44539:LINE(32,25)-(222,167),P
RESET,BF
1860 A$="YOU LAND ON THIS SPACE.":DRAW"BM4
2,30":GOSUB1240:A$="IF A PLAYER SHAKES
DOUBLES,":DRAW"BM42,40":GOSUB1240:A$="T
HEY GET ANOTHER TURN. IF THEY":DRAW"BM4
2,50":GOSUB1240:A$="SHAKE 3 CONSECUTIVE
DOUBLES,":DRAW"BM42,60":GOSUB1240
1870 A$="THAT PLAYER LOSES ONE WHOLE":DRAW
"BM42,70":GOSUB1240:A$="LAP. IF A PLAYE
R LANDS ON A":DRAW"BM42,80":GOSUB1240:A
$="SPACE ALREADY OCCUPIED, HE CAN":DRAW
"BM42,90":GOSUB1240:A$="SEND THE OTHER
PLAYER BACK":DRAW"BM42,100":GOSUB1240
1880 A$="TEN SPACES.":DRAW"BM42,110":GOSUB
1240:A$="(R)EVIEW INSTRUCTIONS":DRAW"BM
65,135":GOSUB1240:A$="OR (S)TART GAME":
DRAW"BM70,145":GOSUB1240
1890 I$=INKEY$:IFI$="R"THEN1760ELSEIFI$="S
"THENLINE(32,25)-(222,167),PRESET,BF:RE
TURNELSE1890
1900 LINE(57,82)-(198,133),PSET,B:POKE178,
1:PAINT(55,80),,0:POKE178,0:A$=N$(2)+"
SENDS "+N$(1):DRAW"BM75,100":GOSUB1240:
A$="BACK 10 SPACES":DRAW"BM89,110":GOSU
B1240:RETURN
1910 LINE(57,82)-(198,133),PSET,B:POKE178,
1:PAINT(55,80),,0:POKE178,0:A$=N$(1)+"
SENDS "+N$(2):DRAW"BM75,100":GOSUB1240:
A$="BACK 10 SPACES":DRAW"BM89,110":GOSU
B1240:RETURN

```

ALL PROGRAMS COCCO 1 OR 2

CHECKERBOARD FILESORT

32 OR 64K FILE PROGRAM...\$16.95 / Cassette — BOTH VERSIONS INCLUDE:
ML ROUTINES FOR DATA, EDIT, SORT, REVIEW, SEARCH, ERROR TRAPPING. MANY HARDCOPY OPTIONS.

P.O. BOX 6464
BAKERSFIELD, CA 93356

13	80	54	17	21	75	18	36	63	9
62	Bakersfield KENO V1.2								41
3									33
72	49	11	29	44	38	55	27	16	1

32 OR 64K KENO SIMULATION
Cassette... \$12.95 Disk... \$13.95

GRPH200 GRPH200 GRPH200 GRPH200

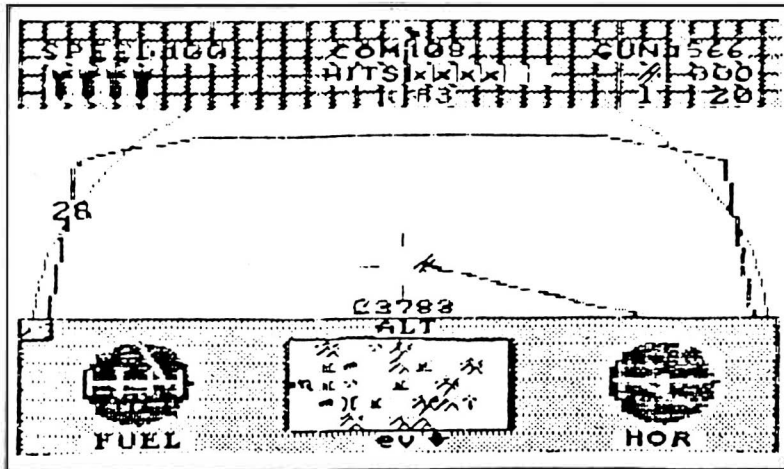
ML GRAPHICS DUMP FOR DMP-200
16 / 32 / 64K Cassette... \$15.95 16 / 32 / 64K Disk... \$16.95

ENJOY A STIMULATING GAME OF KENO. A GRAPHIC DELIGHT FILLED WITH REALISTIC, EXCITING ACTION. PICK 1 TO 15 SPOTS. COMPLETELY RANDOM WINNERS. PREPARE FOR AN EXTREMELY CHALLENGING GAME. CAN YOU BREAK THE HOUSE?

ML GRAPHICS DUMP FOR THE DMP-200. POSITION GRAPHIC PAGES 1-4, 5-8, OR 1-8 ANY PLACE ON PAPER. MENU PROMPTS! STANDARD, CONDENSED, OR COMPRESSED. PRINTOUTS IN NORMAL, ELONGATED, DOUBLE-, OR TRIPLE-SIZE.

SEND CHECK OR MONEY ORDER. CALIF. RESIDENTS ADD 6% SALES TAX
WE WILL MODIFY PROGRAMS TO WORK WITH YOUR PRINTER - NO EXTRA!

MORE FROM ARK ROYAL!



ACE S is a high resolution, completely machine language game of aerial warfare in WWI. Player flies on many missions to bomb enemy targets including airfields, enemy headquarters, anti-aircraft batteries, bridges and factories, but not player's own air base. He must dodge mountains and dogfight with the enemy's best, including, if unlucky, members of the dreaded Flying Circus. After he shoots down five planes he becomes an ACE and receives special consideration; but the game is far from finished. **ACE S** averages about 82 targets and over 100 enemy aircraft per game.

ACE S plays in real time and displays flight simulated dash and controls. Operates from the keyboard. Included in the display is a high resolution mini-screen featuring terrain, targets, and player's relative ground position. There are 8 zones in each map which changes as player flies over it. Game Save. (It could take days to win!) In addition, **NEWMAP** is included to allow for the creation of a zillion new maps. **ACE S** was created in part with AGS, developed by Ken Schunk. For all CoCo's.

WAR AT SEA: Wooden Ships simulate ship to ship battles during the 18th Century. Player controls a number of sailing ships from different nations and must pit his seamanship against the computer or another player.

RED ALERT: a starship combat simulator. Object of the game is to defeat the computer controlled enemy vessel by using your ship's capacities, strategic maneuvers, and your own smarts.

NEW

ACE S: WWI Aerial Warfare (CC64K D HR ML)	\$29
RED ALERT: Star Ship Warfare (CC64K D HR MLS J)	\$27
WAR AT SEA: Wooden Ships (CC64K D HR MLS J)	\$25
Pro Football: Strategy Gridiron game (CC3 128K HR B)	\$20
Okinawa: The Big Invasion (Screen Dump inc) (CC64K D HR ML)	\$27
Blitzkrieg West: A Bigger Bulge (CC64K D HR ML)	\$27
Bataan: Historical & Hypothetical games in one (CC64K D HR ML)	\$29
Desert Fox: Rommel (CC64K D HR MLS)	\$27
Task Force: Modern Naval War in the Med (CC64K D HR MLS J)	\$27
D DAY: The 6th of June (CC64K HR ML)	\$25
Battle Hymn: Battle of Gettysburg (CC64K D HR ML)	\$25
Company Commander: Squad Level Wargame (CC32K SG MLS)	\$25
(House to House Module included in Company Commander)	
Additional Modules for Company Company 3 0	
River Crossing	\$17
Gemini	\$17
Cauldron	\$17
Beach Head	\$17
Fire One! Submarine Simulation (CC3 D HR B)	\$25
Fire & Steel: Waterloo Campaign (CC64K D HR MLS)	\$22
Luftflotte: Battle of Britain (CC32K SG MLS)	\$25
Stalingrad: The turning point. (CC64K HR ML)	\$25
Final Frontier: War in Space (CC32K D HR MLS)	\$25
Barbarossa: The War in Russia (CC64K HR ML)	\$22
RedStar: Nato vs Warsaw Pact (CC32K D HR ML)	\$22
DarkHorse: Redstar Sequel (CC64K D HR ML)	\$22
Midway: The Turning Point in the Pacific (CC32K HR MLS)	\$20
Escape From Denna: Dungeons! (CC32K SG MLS)	\$15
Tunis: War in the Desert (CC32K SG B)	\$15
Battle of the Bulge 1 or 2 player (CC32K SG B)	\$15
Phalanx: Alexander the Great (CC32K HR ML)	\$15
Rubicon II: Invasion game (CC32K SG B)	\$10
Guadalcanal: America Strikes Back (CC32K SG MLS)	\$10
Waterloo: Napoleon (CC32K SG MLS)	\$10
Bomber Command: Strategic Bombing Mission (CC32K SG MLS)	\$10
Kamikaze: Naval War in the Pacific (CC32K HR B)	\$10
Starblazer: Strategy Star Trek (CC32K SG MLS)	\$10
Mission Empire: Build an Empire in Space (CC32K SG B)	\$10
Galactic Taipan: Economics in Space (CC32K SG B)	\$10
Keyboard General: Bi-monthly newsletter yearly sub	\$15

Barbarossa, Luftflotte, Battle Hymn (256K) available Tandy 1000

New for the Tandy 1000

Gray Storm Rising: War in the North Atlantic \$25

Codes: CC — Color Computer, all versions CC3 — CoCo 3 only
 D — Disk only (no D means program available tape or disk)
 HR — High Resolution SG — Semigraphics ML — Machine Language
 MLS — Machine Language Subroutines B — Basic J — Joystick

Write for free catalog!

Prices include shipping to USA and Canada. Others add \$3.00. COD's available in USA only, add \$3.50. Personal Checks accepted with no delays in USA. Others must send M.O. or Bank Draft in U.S. funds. Programs shipped within 24 hours except on weekends. Sorry, no bankcards. Color Computer and Tandy 1000, TM Tandy Corp.

Florida residents add 6% sales tax.

Canadians may order direct from: **M & M Software**, Post Office Box 1945, Slave Lake, Alberta T06 2A0. Write M & M Software for information.

ARK ROYAL GAMES
 P.O. Box 14806
 Jacksonville, FL 32238
 (904) 786-8603



The Marriage of Machine Language & Basic

by
John Galus

Last month John discussed applications for calling machine language subroutines from basic. He has written 8 example programs which are included here. Each program contains comments that describe what the program does. For more details refer to last month's article. - Editor.

```

10 '#####
20 'LISTING #1
30 'CLEAR THE SCREEN
40 'CALL ML ROUTINE
50 'USR COMMAND
60 'BY JOHN GALUS
70 'FOR DYNAMIC COLOR NEWS
80 '#####
90 'CLEAR ROOM FOR ROUTINE
100 CLEAR200,&H7EFF
110 X=&H7000
120 'DEFINE USER LOCATION
130 DEFUSRO=&H7000
140 'PLACE ROUTINE IN RAM
150 CLS:PRINT"PUTTING ROUTINE IN
    MEMORY"
160 READ A$:IF A$="XX" THEN 190
170 A=VAL("&H"+A$)
180 POKE X,A:X=X+1:GOTO160
190 PRINT"PRESS ANY KEY TO EXECU
    TE ROUTINE"
200 IF INKEY$=""THEN200
210 'CALL SUBROUTINE
220 Z=USR(0)
240 DATA C6,60,8E,4,0,E7.80,8C.5
    ,FF,23,F9,39,XX

10 '#####
20 'LISTING #2
30 'PASSING ONE ARGUMENT
40 'ROUTINE SQUARES NUMBER
50 'PASSED BY USR FUNCTION
60 'BY JOHN GALUS

```

```

70 'FOR DYNAMIC COLOR NEWS
80 '#####
90 'CLEAR ROOM FOR ROUTINE
100 CLEAR200,&H7EFF
110 X=&H7000
120 'DEFINE USER LOCATION
130 DEFUSRO=&H7000
140 'PLACE ROUTINE IN RAM
150 CLS
160 READ A$:IF A$="XX" THEN CLS:
    GOTO190
170 A=VAL("&H"+A$)
180 POKE X,A:X=X+1:GOTO160
190 INPUT"ENTER NUMBER TO SQUARE
    ";S
200 'CALL SUBROUTINE
210 Z=USR(S)
220 PRINT"NUMBER SQUARED EQUALS
    ";Z:PRINT
230 GOTO190
240 DATA BD,BC,5F,BD,BA,CC,39,XX

```

```

10 '#####
20 'LISTING #3
30 'PASSING ONE STRING ARGUMENT
40 'ROUTINE EXPANDS A STRING
50 'PASSED BY USR FUNCTION
60 'BY JOHN GALUS
70 'FOR DYNAMIC COLOR NEWS
80 '#####
90 'CLEAR ROOM FOR ROUTINE
100 CLEAR200,&H7EFF
110 X=&H7000
120 'DEFINE USER LOCATION
130 DEFUSRO=&H7000
140 'PLACE ROUTINE IN RAM
150 CLS
160 READ A$:IF A$="XX" THEN CLS:
    GOTO190
170 A=VAL("&H"+A$)
180 POKE X,A:X=X+1:GOTO160
190 INPUT"ENTER STRING TO EXPAND
    ";S$
200 'CALL SUBROUTINE

```

Dynamic Color News May 1988

```
210 Z$=USR(S$)
230 PRINT:GOTO190
240 DATA E6,84,5D,27,12,10,AE,2,
      A6,A0,AD,9F,A0,2,86,20,AD,9F,
      A0,2,5A,26,F1,39,XX
```

```
10 '#####
20 'LISTING #4
30 'PASSING ONE INTERGER NUMERIC
40 'ARGUMENT AND RETURNING ONE
50 'ARGUMENT USING ROM ROUTINES
60 'BY JOHN GALUS
70 'FOR DYNAMIC COLOR NEWS
80 '#####
90 'CLEAR ROOM FOR ROUTINE
100 CLEAR200,&H7EFF
110 X=&H7000
120 'DEFINE USER LOCATION
130 DEFUSRO=&H7000
140 'PLACE ROUTINE IN RAM
150 CLS
160 READ A$:IF A$="XX" THEN CLS:
      GOTO190
170 A=VAL("&H"+A$)
180 POKE X,A:X=X+1:GOTO160
190 INPUT"NUMBER TO FIND SQUARE
      ROOT OF ";S
200 'CALL SUBROUTINE
210 Z=USR(S)
220 PRINT"SQUARE ROOT IS ";Z
230 PRINT:GOTO190
240 DATA BD,B3,ED,8E,FF,FF,CE,0,
      1,34,40,30,1,10,AE,E4,31,3E,1
      0,AF,E4,E3,E4,25,F2,1F,10,35,
      40,7E,B4,F4,XX
```

```
10 '#####
20 'GET/PUT ROUTINE
30 'PASS PARAMETERS IN STRING
40 'FOUR PARAMETERS
50 'XPOS,YPOS,PLAYER #,GET/PUT F
      LAG
60 '1 TO 10 PLAYERS
70 'BY JOHN GALUS
80 'FOR DYNAMIC COLOR NEWS
90 '#####
100 'RESERVE MEMORY FOR PROGRAM
110 CLEAR200,&H6FFF
120 DEFUSRO=&H7000
130 X=&H7000
140 L=0:A=0
150 READ A$:IF A$="XX"THEN 190
160 A=VAL("&H"+A$):POKE X,A:X=X+
      1:GOTO150
```

```
170 'STRING USED TO HOLD PARAMET
      RS
180 'GET FIGURE ONE BYTE WIDE AN
      D 12 BYTES LENGTH /0=GET
190 P1$=CHR$(0)+CHR$(0)+CHR$(0)+
      CHR$(0)
200 PMODE4,1:PCLS:SCREEN1,0
210 'DRAW BOX
220 LINE(0,0)-(10,10),PSET,BF
230 'PASS PARAMETERS TO GET BOX
240 L=VARPTR(P1$):Z=USR(L)
250 'NEW PARAMETERS PUT=1
260 P2$=CHR$(100)+CHR$(100)+CHR$
      (0)+CHR$(1)
270 'PUT BOX AT NEW POSITION
280 L=VARPTR(P2$):Z=USR(L)
290 GOTO290
300 DATA BD,B3,ED,1F,2,E6,A4,C1,
      4,26,30,EE,22,A6,C0,97,BE,A6,
      C0,97,C0,34,40,BD,92,98
310 DATA 35,40,1F,12,8E,70,47,A6
      ,C0,C6,C,3D,3A,C6,C,A6,C4,80,
      1,26,2,20,B,A6,A4,A7,80,31,A8
320 DATA 20,5A,26,F6,39,A6,80,A7
      ,A4,31,AA8,20,5A,26,F6,39,XX
```

```
10 '#####
20 'GET/PUT ROUTINE
30 'PASS PARAMETERS IN STRING
40 'FOUR PARAMETERS
50 'XPOS,YPOS,PLAYER #,GET/PUT F
      LAG
60 '1 TO 10 PLAYERS
70 'BY JOHN GALUS
80 'FOR DYNAMIC COLOR NEWS
90 '#####
100 'RESERVE MEMORY FOR PROGRAM
110 CLEAR200,&H6FFF
120 DEFUSRO=&H7000
130 X=&H7000
140 L=0:A=0
150 READ A$:IF A$="XX"THEN 190
160 A=VAL("&H"+A$):POKE X,A:X=X+
      1:GOTO150
170 'STRING USED TO HOLD PARAMET
      RS
180 'GET FIGURE ONE BYTE WIDE AN
      D 12 BYTES LENGTH /0=GET
190 P1$=CHR$(0)+CHR$(0)+CHR$(0)+
      CHR$(0)
200 PMODE4,1:PCLS:SCREEN1,0
210 'DRAW BOX
220 LINE(0,0)-(10,10),PSET,BF
230 'PASS PARAMETERS TO GET BOX
240 L=VARPTR(P1$):Z=USR(L)
```

```

250 'NEW PARAMETERS PUT=1
260 P2$=CHR$(100)+CHR$(100)+CHR$(
(0)+CHR$(1)
270 'PUT BOX AT NEW POSITION
280 L=VARPTR(P2$):Z=USR(L)
290 GOTO290
300 DATA BD,B3,ED,1F,2,E6,A4,C1,
4,26,30,EE,22,A6,C0,97,BE,A6,
C0,97,C0,34,40,BD,92,98
310 DATA 35,40,1F,12,8E,70,47,A6
,C0,C6,C,3D,3A,C6,C,A6,C4,80,
1,26,2,20,B,A6,A4,A7,80,31,A8
320 DATA 20,5A,26,F6,39,A6,80,A7
,A4,31,A8,20,5A,26,F6,39,XX

```

```

10 '#####
20 'LISTING #7
30 'PASSING ONE STRING ARGUMENT
40 'ROUTINE EXPANDS A STRING
50 'PASSED BY USR FUNCTION
60 'ROUTINE IS PLACED IN STRING
70 'USING THE VARPTR FUNCTION
80 'BY JOHN GALUS
90 'FOR DYNAMIC COLOR NEWS
100 '#####
#
110 X=0:L=0
120 'DUMMY STRING USED TO HOLD R
OUTINE
130 S$="HCLSE]'/SUBSOUND*MOTO
RSOUNDDATA *MOTOROUNDZ&LOCAT
E9"
200 CLS
210 INPUT"ENTER STRING TO EXPAND
";I$
220 'FIND ROUTINE LOCATION
230 L=VARPTR(S$):X=PEEK(L+2)*256
+PEEK(L+3)
240 DEFUSR0=X
250 'CALL SUBROUTINE
260 Z$=USR(I$)
270 PRINT:GOTO210

```

```

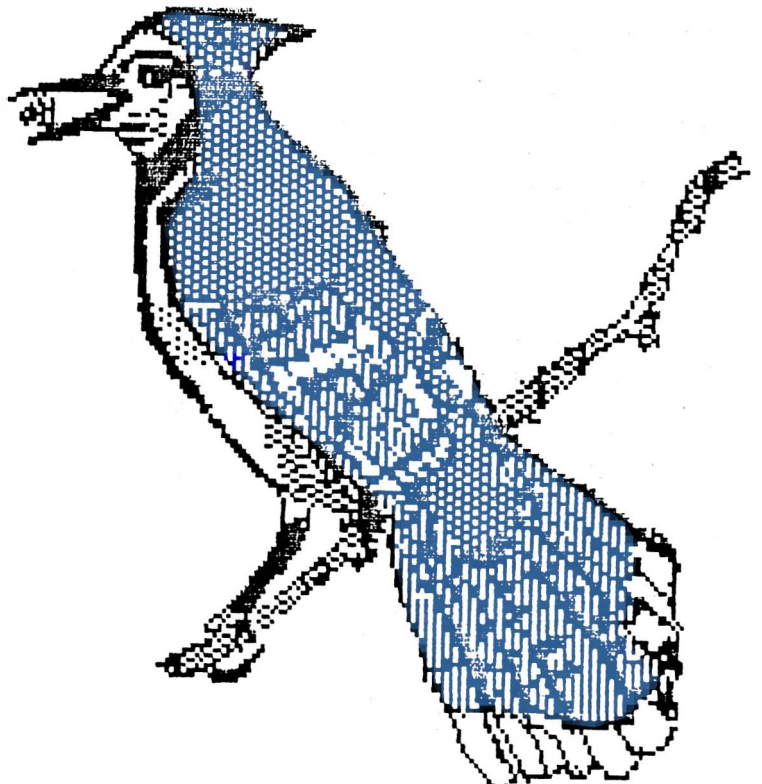
10 '#####
20 'LISTING #8
30 'PASSING ONE STRING ARGUMENT
40 'ROUTINE EXPANDS A STRING
50 'PASSED BY USR FUNCTION
60 'ROUTINE IS PLACED IN REM
70 'IN FIRST PROGRAM LINE
80 'LEAVE NO SPACE AFTER LINE
90 'NUMBER AND FIRST REM
100 'BY JOHN GALUS
110 'FOR DYNAMIC COLOR NEWS

```

```

120 '#####
130 'PLACE ROUTINE IN REM
140 'REM MUST BE ONE FIRST LINE
150 'OF BASIC PROGRAM
160 'FIND LOCATION OF REM LINE
170 'ADD 6 TO SKIP LINE NUMBER
180 'AND REM
190 X=PEEK(25)*256+PEEK(26)+6
200 READ A$:IF A$="XX" THEN CLS:
GOTO230
210 A=VAL("&H"+A$)
220 POKE X,A:X=X+1:GOTO200
230 INPUT"ENTER STRING TO EXPAND
";I$
240 'FIND ROUTINE LOCATION
250 X=PEEK(25)*256+PEEK(26)+6
260 DEFUSR0=X
270 'CALL SUBROUTINE
280 Z$=USR(I$)
290 PRINT:GOTO230
300 DATA E6,84,5D,27,12,10,AE,2,
A6,A0,AD,9F,A0,2,86,20,AD,9F,
A0,2,5A,26,F1,39,XX

```



**Blue
Jay**

SUPERSPELL

by
Jesse Sanders

This educational program will allow you to improve your spelling. Word files can be created and saved to a disk. Files can be loaded from a disk. Words can be added to a file and the new file saved to a disk. This is a basic program and can be modified for a cassette. The word with the proper spelling is flashed on the screen. The time can be selected. For really fast operation select times less than a second such as .2 or .4. The program is user friendly and only requires selecting the options from the menu. The maximum length of a spelling file is 100 characters. If you need to improve your spelling then try this program.

```

^k;
10 C=128+16*(3-1)+0:A$=CHR$(C)
20 FOR X=1TO50
30 CLS0
40 PRINT@235,"superspell"A$;A$;A$;
  $;A$;A$;A$;A$;A$;A$;A$;A$;
50 CLS
60 PRINT@235,"SUPERSPELL"
70 FORT=1TO10:NEXTT:NEXTX
80 CLS
90 'COPYRIGHT (C) 1988
100 'DYNAMIC ELECTRONICS INC
110 '*****BY JESSE SANDERS*****
  *
120 '*****P.O. BOX 84*****
  *
130 '*****CHIMNEY ROCK*****
  *
140 '*****COLORADO 81127*****
  *
150 DIMN(100):DIMW$(100)
160 CLS:PRINTTAB(12)"MENU"

```

```

170 PRINTTAB(8)"1. MAKE LIST"
180 PRINTTAB(8)"2. PRACTICE LIST"
  "
190 PRINTTAB(8)"3. SAVE LIST"
200 PRINTTAB(8)"4. LOAD A LIST"
210 PRINTTAB(8)"5. VEIW CURRENT
  LIST"
220 PRINTTAB(8)"6. ADD TO CURR.
  LIST"
230 PRINTTAB(8)"7. END"
240 INPUT">>";A
250 ON A GOTO 260,350,420,480,57
  0,590,660
260 CLS:PRINT:INPUT"HOW MANY WOR
  DS IN YOUR LIST";N
270 IF N=0THEN GOTO 160
280 FOR X=1TON
290 INPUT"WORD";W$(X)
300 NEXT
310 CLS
320 FORR=1TON:PRINTW$(R),:NEXT
330 LINE INPUT"ARE THESE CORRECT
  (Y/N)";L$
340 IF L$="Y" THEN GOTO160 ELSE
  GOTO 260
350 CLS:PRINT:PRINT"HOW MANY SEC
  ONDS TO FLASH":INPUTT
360 T=T*500:FORQ=1TON
370 PRINT W$(Q):FORT2=1TOT:NEXTT
  2
380 CLS:INPUT"SPELL WORD";Z$
390 IF W$(Q)=Z$ THEN PRINT"GOOD
  JOB" ELSE PRINT"MISPELLED"
400 NEXT Q
410 INPUT"TRY AGAIN";A$:IF A$="Y"
  " THEN 350 ELSE 160
420 INPUT"NAME OF FILE";N$:N$=N$
  +"/DAT":OPEN"O",#1,N$
430 FOR Q=1TON
440 WRITE #1,W$(Q)
450 NEXT Q
460 CLOSE#1
470 GOTO 160
480 INPUT"NAME OF FILE";N$:N$=N$

```


These are collections of programs from Dynamic Color News. Number after program is the issue number.

DCN-1

* 64K all RAM. * 2- bank address file. Alarm Clock, Loan Interest, Character Generator. * Bank Switching.
* CC-2 Memory managers

DCN-2

Check Book Program., Ball Team Sort Program., Card Shuffling, Student Study Program, Address File.

DCN-3

Restore-Recover program lost after NEW command, Fast Food, Bar Graph, Memory Peek & Poke, Graphics draw.

DCN-4

Address File with Sort up to 100 names, Morse Code Generator, Star Constellations, Dueling Cannons.

DCN-5

COLOR COMPUTER 3 PROGRAMS

CC-3 Memory Manager- Switch 8K blocks #38, CC-3 Error Trapping- Program to print error message #37, CC-3 Graphics #38, CC-3 Graphics Save #40

DCN-6

Accounts Payable- Business program #38, Dog Race (game) #40, Compound Interest-Figure best investment deal. #40, Address File Disk Sort (up to 100 names) #40, Invoice Program- Example for writing your own #36.

DCN-7

Meteors (game) #41, Graphics print-Use regular print for large picture #42, Parachute (game) #42, Music (Peace)- Hear quality computer music. #43, Geneology-Keep records of your family tree #39.

DCN-8

Oware (Game) #36, Save the Maiden (Word game) #43, Printer Utilities - Print information on screen to printer #44, Graphics Screen Dump Program #44.

Programs are \$5.95 each tape or disk. Add \$1 shipping. Checks, VISA & MC.

**DYNAMIC ELECTRONICS
BOX 896 (205) 773-2758
HARTSELLE, AL 35640**

```

+ "/DAT":OPEN "I",#1,N$
490 N=0
500 IF EOF(1)=-1 THEN 550
510 N=N+1
520 INPUT #1, W$(N)
530 PRINT W$(N)
540 GOTO500
550 CLOSE #1
560 PRINT"THERE ARE "N " WORDS":
INPUT"PRESS ENTER TO CONTINUE
";XX
570 CLS:FORX=1TON:PRINTW$(X),:NE
XT
580 PRINT"THERE ARE "N "WORDS":I
NPUT"PRESS ENTER";XX:GOTO160
590 PRINT"THERE ARE NOW "N" WORD
S ON YOUR LIST":Z=N
600 INPUT"HOW MANY WORDS TO ADD"
;V
610 V=V+N:Z=Z+1
620 FORN=Z TO V
630 INPUT"WORD";W$(N)
640 NEXT:N=V
650 GOTO 160
660 END
    
```

OPERATING HINT

Protect Bad Disk Files: If your computer latches up while saving a file to disk, reset the computer. All programs can be recovered except the one that was being saved before the computer latched up. Remove the disk and put a write protect tab on it. This will prevent writing to it which will destroy some or all of the files. Now you can copy the files one by one onto another disk using the extended disk basic copy command.

Dynamic Color News is now available on tape or disk for \$6.95 for 1 month, \$35 for 6 months, & \$60 for 12 months.

DYNAMIC ELECTRONICS INC.

PUBLIC DOMAIN SOFTWARE

This large collection of programs will allow you to quickly expand your library. All programs are on disk and programs with a * can be supplied on tape. Some programs require a joystick. Instructions are included in some collections as DAT or TXT files

PD-15

GRAPHICON PICTURE
DISK-3 REQUIRES
PIXFILES/BAS FROM
PD-12 & JOYSTICK

* PD-1 GAMES

MENU BAS 0 B 1
BEAST BAS 0 B 1
BEAST DAT 1 A 1
BOBO BAS 0 B 3
GUNNER BAS 0 B 2
HOW BAS 0 B 3
LANDER BAS 0 B 3
LIFE BAS 0 B 3
MAX BAS 0 B 3
POKER BAS 0 B 2
BIORITHM BAS 0 B 3
BLACKBOX BAS 0 B 2
BLOCKADE BAS 0 B 1
BUSJUMP BAS 0 B 1
CHUTE BAS 0 B 2
GO BAS 0 B 3
HANGMAN BAS 0 B 2
OTHELLO BAS 0 B 2
TARTUS BAS 0 B 1
TARTUS2 BAS 0 B 1

DSK-6

SPELL & FIX- FIND
SPELLING ERRORS
IN TXT DISK FILES

MENU BAS 0 B 1
MANUAL TXT 1 A 12
SPELLFX2 BAS 0 B 1
SPELLFX2 BIN 2 B 6
SPELLFIX BAS 0 B 1
DICT TXT 1 A 33
COREDICT TXT 1 A 1
SAMPLE TXT 1 A 1
BUILD BAS 0 B 1
LIST BAS 0 B 1
RESET BAS 0 B 1
APPEND BAS 0 B 1
ADDWORDS BIN 2 B 3

FRTHDOC2 TXT 1 A 7
FRTHDOC3 TXT 1 A 1
FRTHDOC4 TXT 1 A 7
32KFORTH BIN 2 B 4
NEWFORTH BIN 2 B 3
WE BAS 0 B 1

PICTURES GCM 1 B 68

PD-16

GRAPHICON PICTURE
DISK-4 REQUIRES
PIXFILES/BAS FROM
PD-12 & JOYSTICK

PICTURES GCM 1 B 68

* PD-2 GAMES

MENU BAS 0 B 1
RUBIC BAS 0 B 5
FRACTAL BAS 0 B 1
KALSCOPE BAS 0 B 2
TARTUS BAS 0 B 1
TARTUS2 BAS 0 B 1
WORLD3D BAS 0 B 4
LIFE BAS 0 B 2
ADVENT BAS 0 B 4
ADVENT DOC 1 A 2
HURKLE BAS 0 B 2
REVERSE BAS 0 B 2
GUESSFR BAS 0 B 2
SCRAMBLE BAS 0 B 3
PIZZA BAS 0 B 2
CINQUAIN BAS 0 B 2

PD-7 DISK UTILITIES

MENU BAS 0 B 1
BASIC64 BIN 2 B 1
BSEARCH BIN 2 B 1
DISKCOMP BIN 2 B 1
DISKTEST BIN 2 B 3
DISKWASH BAS 0 B 1
DOS64K BAS 0 B 2
DSDBOOT BIN 2 B 1
LIST BIN 2 B 2
PRINT BIN 2 B 3
PRINTDIR BAS 0 B 1
RECOVER BIN 2 B 1
ROMBACK BAS 0 B 1
ROMFIX BIN 2 B 1

PD-11 MCPAINT

A COMPLETE GRAPHICS
DEVELOPMENT PROGRAM
WITH INSTRUCTIONS

RUN-ME BAS 0 B 1
MCPAINT BIN 2 B 11
ICONS SYS 2 B 3
MCDOC DOC 1 A 11
PRINTDOC BAS 1 A 1
GLASDEMO BIN 2 B 6
STARS BIN 2 B 2
1940S SET 2 B 1
BLOOD SET 2 B 1
BOLD SET 2 B 1
FANCY SET 2 B 1
GREEK SET 2 B 1
GREEKU SET 2 B 1
HEBREW SET 2 B 1
OLDENG SET 2 B 1
TYPING SET 2 B 1
EPSON DRV 2 B 1
EPSON2 DRV 2 B 1
ANIMATE BAS 0 B 1
ANIMAT BIN 2 B 1
BANNER BAS 0 B 2
MCUTIL BIN 2 B 1

PD-17 DISK UTILITIES

64KBHW BAS 0 A 1
AUTOSTRT BAS 0 B 1
BAKDIR BAS 0 A 3
BIN>BAS BAS 0 A 1
CASLABL BAS 0 B 1
CURSOR BAS 0 B 1
CUSTOM BAS 0 B 3
CUSTOMIZ BAS 0 B 1
DIR BIN 2 B 1
DIR32 BAS 0 A 2
DIR32C DOC 1 A 3
DIRLISTR BAK 0 B 1
DIRLISTR BAS 0 B 1

PD-18 TAPE TO DISK
DISK UTILITIES

DIRSORT BAS 0 A 1
DISK-DIR BAS 0 A 1
DISKLABL BAS 0 A 1
LOADSOLU BAS 0 B 1
MENU BAS 0 B 1
PDIR BAS 0 A 1
SORT BAS 0 B 1
SORTPRT BAS 0 B 1
SORTSAVE BAS 0 A 1
SOULTION BIN 2 B 1
SUPERBAC BIN 2 B 1
T2D BIN 2 B 2
TIMER BAS 0 B 1
TPTODSK BIN 2 B 1

* PD-3 GAMES

MENU BAS 0 B 1
AANDAN BAS 0 B 2
STARTREK BAS 0 B 9
TREKINST BAS 0 B 3
SEQUENCE BAS 0 B 2
ALPHABET BAS 0 B 3
GEOGRAPH BAS 0 B 4
FLASH BAS 0 B 4
BAGELS BAS 0 B 3
OREGON BAS 0 B 9
MULTIPLY BAS 0 B 2

PD-8 DISK UTILITIES

SCRN51 BAS 0 B 1
SCRN51 BIN 2 B 1
SCRNDEMO BAS 0 B 2
SDC BIN 2 B 1
SQUEEZE BIN 2 B 1
SSDBOOT BIN 2 B 1
TAPE2DSK BAS 0 B 1
TIMER BIN 2 B 2
UNLOCK BIN 2 B 1
BACKUP BIN 2 B 1
BACKUP1 BIN 2 B 1
MORE RIN 2 B 3
SPEAK BIN 2 B 3
PCLEARFX BIN 2 B 1
MULTBACK BIN 2 B 1
MULTBACK DOC 1 A 1

* PD-12

PHODE 4 PICTURES

CHURCH, ROSES, HOUSE
RUN "PIXFILES"
JOYSTICK IS REQUIRED

XIXCMP BAS 0 A 3
OUTPOST BAS 0 A 3
OUTPOST BIN 2 B 3
SFIELD BAS 0 A 2
SFIELD BIN 2 B 3
PIXFILES BAS 0 B 3
TRUCK BIN 2 B 3
MODEM BIN 2 B 3
HORSE BIN 2 B 3
MISSION BIN 2 B 3
CLOISTER BIN 2 B 3
RAIN BIN 2 B 3
EAGLE BIN 2 B 3
ROSES BIN 2 B 3
CHURCH BIN 2 B 3
GARDEN BIN 2 B 3
PRES BIN 2 B 3
LONI4 BAS 0 A 3

* PD-19 GAMES

3DMAZE BAS 0 A 2
BOXES BAS 0 B 1
CLOSE EN BAS 0 B 2
CRITICAL BAS 0 B 1
GAMMON BAS 0 B 3
GOLDMINE BAS 0 A 3
HOCKEY BAS 0 A 1
HOGJOWL BAS 0 A 8
HORSERAC BAS 0 A 3
JUMPING BAS 0 B 1
KALIDESC BAS 0 B 1
MASTHIND BAS 0 B 1
MEMORY BAS 0 B 1
MOONBASE BAS 0 B 2
NAMES BAS 0 B 4
OTHELLO BAS 0 B 4

* PD-4 ML GAMES

MENU BAS 0 B 1
PONG BIN 2 B 1
SQUASH BIN 2 B 2
BLOCKADE BIN 2 B 2
GERM BIN 2 B 1
WIGWORM BIN 2 B 2
GRID BIN 2 B 2
ZEROG BIN 2 B 2
3DTICTAC BIN 2 B 7
HOPBOP BIN 2 B 5
ICEWAR BAS 0 B 6
CIVILWAR BAS 0 B 4
TICTACTO BIN 2 B 7

PD-9

TERMINAL PROGRAMS

MENU BAS 0 B 1
TELETERM BIN 2 B 3
TELETERM CAS 2 B 3
TTHelp DAT 1 A 4
MTERM BIN 2 B 6
MTERM VIP 1 A 19
MTERCONFIG BAS 0 B 3
MTERM+ BIN 2 B 6
DATATRDE BIN 2 B 3
KERMIT BAS 1 A 1
KERMIT BIN 2 B 2
HAYESAE BIN 2 B 4
HAYESAE DOC 1 A 6

PD-13

GRAPHICON PICTURE
DISK-1. REQUIRES
PIXFILES/BAS FROM
PD-12 & JOYSTICK

PICTURES GCM 1 B 68

* PD-20 GAMES

PEG BAS 0 B 3
RABBIT BAS 0 B 1
SAFE BAS 0 B 2
SAUACER BAS 0 B 1
SHOOTEM BAS 0 B 2
SIMMON BAS 0 A 1
SLITHER BAS 0 A 2
SPACE WA BAS 0 B 4
STAR TRE BAS 0 B 1
SUBCHASE BAS 0 B 2
SUBDESTR BAS 0 B 2
SUNDANCE BAS 0 B 2
TANKS BAS 0 B 2
TOWER BAS 0 B 2
UNDROVER BAS 0 B 1

* PD-5 GAMES

MENU BAS 0 B 1
CAVE BAS 0 B 4
WARGAME BAS 0 B 2
WARGAME BIN 2 B 1
WARGAME2 BAS 0 B 5
WARROOM BIN 2 B 3
NORAD BAS 0 B 3
ANDREA BAS 0 B 5
CURSE BAS 0 B 4
GARGOYLE BAS 0 B 6
KINGTUT BAS 0 B 7
TAIPAN BAS 0 B 6

PD-10

COLOR COMP. FORTH

MENU BAS 0 B 1
FORTHMAN UL1 2 B 7
FORTHMAN UL2 2 B 7
FORTHMAN UL3 2 B 1
FORTH BIN 2 B 3
EDIT DAT 1 A 3
FRTHDOC1 TXT 1 A 7

PD-14

GRAPHICON PICTURE
DISK-2. REQUIRES
PIXFILES/BAS FROM
PD-12 & JOYSTICK

PICTURES GCM 1 B 68

PD-21 MUSIC

PLAY MUSIC THROUGH
YOUR TV OR MONITOR.
COMPOSE & EDIT MUSIC

ORCH BIN 2 B 8
ORCH DOC 1 A 3
GCHVRT BIN 2 B 2
GHOSBUST MUS 4 M 3
STELMO MUS 4 M 2
MASH MUS 4 M 2
BOND1 MUS 4 M 2
2001 MUS 4 M 2
ARIA MUS 4 M 2
INVENTI MUS 4 M 1
BATTSTAR MUS 4 M 2
BOND2 MUS 4 M 2
CLOENECT MUS 4 M 2
SCARBORO MUS 4 M 1
FUGUEINC MUS 4 M 1
MINUET MUS 4 M 1
LONGTIME MUS 4 M 2
MESSIAH MUS 4 M 3

* PD-22 MUSIC-1

LOADM "NAME/MUS"
EXEC TO PLAY MUSIC
THROUGH TV OR MON.

ADDPLAY BAS 0 B 1
DEPLAY BAS 0 B 1
MSQUEZ BAS 0 B 2
ALSOSPAK MUS 2 B 5
BOOGIE MUS 2 B 6
CIRCUS MUS 2 B 5
CLOWN MUS 2 B 2
CLOWNS MUS 2 B 4
HAYDEN MUS 2 B 8
JBGODD MUS 2 B 4
PEACE MUS 2 B 2
PEACH MUS 2 B 5
PUFF MUS 2 B 6
GOODDIEY MUS 2 B 4

* PD-23 MUSIC-2

LOADM "NAME/MUS"
EXEC TO PLAY MUSIC
THROUGH TV OR MON.

ADDPLAY BAS 0 B 1
DEPLAY BAS 0 B 1
MSQUEZ BAS 0 B 2
RAIN MUS 2 B 2
SONATA3 MUS 2 B 3
STRAY MUS 2 B 4
FOGGY MUS 2 B 4
FUNERAL MUS 2 B 3
HARDDAY MUS 2 B 2
INVENT MUS 2 B 2
INVENT11 MUS 2 B 3
INVENT15 MUS 2 B 3
INVENT7 MUS 2 B 3
INVENT8 MUS 2 B 2
JOPLIN MUS 2 B 4
KHAN MUS 2 B 6

* PD-24 MUSIC-3

LOADM "NAME/MUS"
EXEC TO PLAY MUSIC
THROUGH TV OR MON.

ADDPLAY BAS 0 B 1
DEPLAY BAS 0 B 1
MSQUEZ BAS 0 B 2
PEANUTS MUS 2 B 3
ROCK MUS 2 B 5
ROXANNE MUS 2 B 5
SCHERZO MUS 2 B 2
TEACH MUS 2 B 2
PIANOMAN MUS 2 B 5
STRANGER MUS 2 B 5
CAMELOT MUS 2 B 4

CHACONNE MUS 2 B 8
DIAMOND MUS 2 B 3
DOWNROAD MUS 2 B 4
FANTASY1 MUS 2 B 2

* PD-25 MUSIC-4

LOADM "NAME/MUS"
EXEC TO PLAY MUSIC
THROUGH TV OR MON.

FANTASY2 MUS 2 B 3
GRENGRAS MUS 2 B 4
HUMOR MUS 2 B 4
INCROW MUS 2 B 3
STARWARS MUS 2 B 2
SUITEGM MUS 2 B 6
SUPERMAN MUS 2 B 2
WHENIM64 MUS 2 B 4
ROOTBEER MUS 2 B 7
WAYUARE MUS 2 B 3
AXELF MUS 2 B 2
TOCATA MUS 2 B 3

* PD-26 LAST WILL

LOAN BAS 0 B 1
LASTWILL BAS 0 B 6
IMEGA BAS 0 B 3
AWARI BAS 0 B 1
BACARAT BAS 0 B 2
BAGELS BAS 0 B 1
BLACKJAC BAS 0 B 1
CHUCK BAS 0 B 1
CONCENTR BAS 0 B 1
CUBES BAS 0 B 2

* PD-27 GAMES

DEFUZE BAS 0 B 1
DR ZEE BAS 0 B 1
FLIPFLOP BAS 0 B 1
GO-FISH BAS 0 B 2
HANGMAN BAS 0 B 2
HIGHLOW BAS 0 B 1
JACKPOT BAS 0 B 1
KEYS BAS 0 B 1
L E M BAS 0 B 3
LUNARLD BAS 0 B 2
NUMBERS BAS 0 B 1
OBSTACLE BAS 0 B 1
POOLGAME BAS 0 B 4
RETURN BAS 0 B 1
REVERSI BAS 0 B 2
STARTREK BAS 0 B 2
TTREK BAS 0 B 3

PD-28 COMM. CC-TALK,
BBS, TERM

BBS'S DAT 1 A 1
CCT IO 2 B 1
CCTALK BAS 0 B 1
CNFG40V1 BAS 0 A 5
CNFG40V2 BAS 0 A 4
CTLKEY BAS 1 A 1
MTERM1 DOC 1 A 11
MTERM2 DOC 1 A 8
MTERM40 BIN 2 B 8
REDIAL BAS 0 A 1
PACREDIA BAS 0 A 1

PD-29 COMM, WORD
PRO, GAMES

GOSTSHIP BAS 0 B 8
INT RATE BAS 0 B 2
INVTANL FC 0 B 4
MENU BAS 0 B 4
MOTOJUMP BAS 0 B 3
SCREEN MAX 2 B 6
SCREEN1 BIN 2 B 3
SCREEN2 BIN 2 B 3
SCREEN2 MAX 2 B 6
STRINGTU BAS 0 B 4
TTERM DSK 2 B 4

USING BAS 0 B 3
WF-DOC JP 0 B 2
WORDFILE JP 0 B 4
PARM1 DAT 1 A 1

PD-30 CHECK BOOK,
UTILITIES

CHECKBOK BAS 0 B 4
CHECKBOK DOC 1 A 9
DIRR CMD 2 B 1
DVIEW BAS 0 B 1
FILEMAID BAS 0 B 2
LISTER BAS 0 B 1
PAINTPOT BAS 0 B 4
SCREEN MAX 2 B 6
SCREEN1 BIN 2 B 3
SCREEN2 BIN 2 B 3
SCREEN2 MAX 2 B 6
SPECZAP BAS 0 B 5
TAPETYPE BIN 2 B 1
TTERM DSK 2 B 4
DVIEW DSK 0 B 1
MENU BAS 0 B 4

PD-31

PIRATES TREASURE -
As you explore the
cave looking for the
treasure, a picture
appears on the screen
as you go from room
to room. These pic-
tures are loaded from
disk. A computer with
a disk drive is re-
quired and a ramdisk
is preferred.

PD-32

Color Computer 3
moving pictures.
Consists of a
beautiful waterfall
and a colorful
bouncing ball.

WATRFALL BAS 0 B 1
WATRFALL BIN 2 B 1
WATRFALL MOE 1 B
BALL BAS 0 B 1
BALL2 BAS 0 B 1
BOUNCE BIN 2 B 1
BALL2 HR1 2 B 4
BALL2 HR2 2 B 4
BALL2 HR3 2 B 4
BALL2 HR4 2 B 4

PD-33

EDUCATIONAL PROGRAMS

ABBREV BAS 0 B 4
ABCPPOP BAS 0 B 3
ALPHAAL BAS 0 B 1
EDUCATE BAS 0 B 1
HANGP BAS 0 B 1
HOMONYM BAS 0 B 1
SPELWORD BAS 0 B 1
MATH BAS 0 B 2
DRILL BAS 0 B 2
MLTP BAS 0 B 1
ROUND BAS 0 B 2
AREA BAS 0 B 6
METCONV BAS 0 B 3
NUMBERS BAS 0 B 2
SIEVE BAS 0 B 1

PD 34

!! BULLETIN BOARD!!
With this software
you can run your own
bulletin board at
300 or 1200 baud.
Instructions are
included.

SCF EDI 0 B 3
SMF EDI 0 B 4
SUL EDI 0 B 4
SMP EDI 0 B 2
64K BAS 0 B 1
STARTUP BAS 0 B 2
COTERM BIN 2 B 1
USER SYS 0 B 6
COBBS SYS 0 B 9
STARTI DOC 1 A 5
USER DOC 1 A 1
COBBSREV DOC 1 A 5
OPERAT DOC 1 A 7
SMH EDI 0 B 3
MENU DOC 1 A 11

PD 35

ADDRESS FILES AND
FINANCE PROGRAMS

PHONE BAS 0 B 1
LABELPRT BAS 0 B 1
LETTER BAS 0 B 3
MAILST BAS 0 B 1
WORDPROC BAS 0 B 3
MAILST BAS 0 B 2
PHONLST BAS 0 B 1
MINIWORD BAS 0 B 2
LNWIDTH BAS 0 B 1
CHKWRITE BAS 0 B 2
CHKANAL BAS 0 B 4
PRNTCHK BAS 0 A 1
CHECKS BAS 0 B 4
CHKSTUB BAS 0 B 1
TOTALS DAT 1 A 1
CHECKS DAT 1 A 1
GRAPH BAS 0 B 4
LOAN BAS 0 B 3
CALC BAS 0 B 1
PAYMENT BAS 0 B 1
CASHJNL BAS 0 B 3
AMORT BAS 0 B 3

PD 36

COMP.SCIENCE PGMS 1:
These programs are
tutorials on basic
programming.

COMPSC1 BAS 0 B 8
COMPSC2 BAS 0 B 3
COMPSC3 BAS 0 B 9
COMPSC4 BAS 0 B 6
COMPSC5 BAS 0 B 9
COMPSC6 BAS 0 B 6
GETPUT BAS 0 B 2

PD 37

COMP. SCIENCE PGMS 2:
These programs are
tutorials on basic
programming.

IFTHEN BAS 0 B 8
EXTENDED BAS 0 B 2
GETPUT BAS 0 B 2
COMPSC18 BAS 0 B 8
COMPSC19 BAS 0 B 5
COMPSC17 BAS 0 B 7
EXTDEMO BAS 0 B 3

* PD 38

EDUCATIONAL PROGRAMS
These programs are
excellent learning
tools for school
children.

ABBREV BAS 0 B 4
ABCPPOP BAS 0 B 3
ALPHAAL BAS 0 B 1
EDUCATE BAS 0 B 1
HANGP BAS 0 B 1
HOMONYM BAS 0 B 1
SPELWORD BAS 0 B 2
MATH BAS 0 B 2
DRILL BAS 0 B 2
MLTP BAS 0 B 1
ROUND BAS 0 B 2
AREA BAS 0 B 5
METCONV BAS 0 B 3
NUMBERS BAS 0 B 2

PD 39

ADDRESS FILES AND
FINANCE PROGRAMS

PHONE BAS 0 B 1
LABELPRT BAS 0 B 1
LETTER BAS 0 B 3
MAILST BAS 0 B 1
WORDPROC BAS 0 B 3
MAILST BAS 0 B 2
PHONLST BAS 0 B 1
MINIWORD BAS 0 B 2
LNWIDTH BAS 0 B 1
CHKWRITE BAS 0 B 2
CHKANAL BAS 0 B 4
PRNTCHK BAS 0 A 1
CHECKS BAS 0 B 4
CHKSTUB BAS 0 B 1
TOTALS DAT 1 A 1
CHECKS DAT 1 A 1
GRAPH BAS 0 B 4
LOAN BAS 0 B 3
CALC BAS 0 B 1
PAYMENT BAS 0 B 1
CASHJNL BAS 0 B 3
AMORT BAS 0 B 3

*PD-40

TAPE-DSK & DSK-TAPE
With these programs
you can copy a disk
to tape or a tape to
disk.

T2D BIN 2 B 2
DTCOPY BIN 2 B 1
DSK-TP BAS 0 B 1
DISKLIST BAS 0 B 1
DIRLIST BAS 0 B 2
DISKDUMP BAS 0 B 1
CASSDIR BAS 0 B 1

Pictures can be loaded
with CoCo MAX or our
PIXFILES/BAS program.
They can be printed on
a graphics printer.
See Dynamic Color News
issue #44 for a graph-
ics screen dump pro-
gram. Our DYPRINT
package allows large
screen pictures to
be printed using
standard print.

All program collections are available on disk. Collections with a * are also available on tape.

1-4 \$4.95, 5-9 \$4.50, 10 - \$4.00

Add \$1 shipping. Specify Tape or Disk. Checks, VISA, or MC

DYNAMIC ELECTRONICS
BOX 888 (205) 773-2758
HARTSELLE, AL 35640

* PD-41
Picture files

STAMPS MAX 2 B 3
STARTREK MAX 2 B 3
ST-TREK2 MAX 2 B 3
SCHOOL MAX 2 B 3
SATURN MAX 2 B 3
ESCHER MAX 2 B 3
LABOR MAX 2 B 3
MASK MAX 2 B 3
BUG BOX MAX 2 B 3
SPACE MAX 2 B 3
EASTER MAX 2 B 3
SPACE 2 MAX 2 B 3
POPEYE MAX 2 B 3
GARFIELS MAX 2 B 3
BEETLE B MAX 2 B 3
POLO MAX 2 B 3
HAGAR MAX 2 B 3
X-PAD MAX 2 B 3
CASTLK MAX 2 B 3
MUSIC TV MAX 2 B 3
COCO MAX 2 B 3

* PD-42
Picture files

TITLES MAX 2 B 3
PIXFILES BAS 0 B 3
THOLIAN MAX 2 B 3
3001AD MAX 2 B 3
F15 MAX 2 B 3
QUEEN MAX 2 B 3
BRONCOS MAX 2 B 3
STARTREK MAX 2 B 3
ROOM MAX 2 B 3
RAMBO MAX 2 B 3
OWL MAX 2 B 3
ENTERPR MAX 2 B 3
STAR-T3 MAX 2 B 3
NCC-1701 MAX 2 B 3
SAT-2 MAX 2 B 3
ATMOSP MAX 2 B 3
STARWARS MAX 2 B 3
ORIENTAL MAX 2 B 3

* PD-43
Picture files

STAMP MAX 2 B 3
STRIPE MAX 2 B 3
WOMAN MAX 2 B 3
BLUEJAY MAX 2 B 3
LUCY MAX 2 B 3
OLD ENO MAX 2 B 3
MENU1 MAX 2 B 3
OWL MAX 2 B 3
VAN GOG MAX 2 B 3
WOMAN1 MAX 2 B 3
PSH MAX 2 B 3
DUCKPOND MAX 2 B 3
RANGER MAX 2 B 3
PLANET MAX 2 B 3
CHRSTMAS MAX 2 B 3
PEACE MAX 2 B 3
WOMAN3 MAX 2 B 3
HAWK MAX 2 B 3
PHASER MAX 2 B 3
PIXFILES BAS 0 B 3

PD-44
Terminal program with documentation. This will work with the CoCo-3. Instructions are included.

MTRM43 BIN 2 B 3
CONFIG43 BAS 0 B 4
MTSTART BAS 0 B 4
MTERM1 DOC 1 A 11
MTERM2 DOC 1 A 8
MTERM3 DOC 1 A 7
DOS BOOT DAT 1 A 1
* 0 B 1
** 1 A 1
READDOC BAS 0 B 1

* PD-45
Picture Files

DRAGON MAX 2 B 3
HOT LIPS MAX 2 B 3
ANIMALS MAX 2 B 3
CLOWN F MAX 2 B 3
FISH MAX 2 B 3

3 MEN .MAX 2 B 3
S MAP MAX 2 B 3
BUGS MAX 2 B 3
CFISH MAX 2 B 3
HERO MAX 2 B 3
WHAP MAX 2 B 3
GSCOTT MAX 2 B 3
STATES MAX 2 B 3
HORSE MAX 2 B 3
CROSS MAX 2 B 3
FOODW MAX 2 B 3
RSTONE MAX 2 B 3
COCO MAX 2 B 3
ALIEN MAX 2 B 3
PIXFILES BAS 0 B 3

* PD-46
Talk and Music Files
(C)LOADM "FILE" then EXEC.

TALK BIN 2 B 11
TALK2 BIN 2 B 11
WILLTELL BIN 2 B 9
MUSICBOX BIN 2 B 1
BEATLES BIN 2 B 4
JUMP BIN 2 B 5
GRELN BIN 2 B 5
GHOST BIN 2 B 4
JINGLX BIN 2 B 3
WORLD BIN 2 B 5
CTRYROAD BIN 2 B 2

* PD-47
Miscellaneous Pgs

T BAS 0 B 2
SANTEE2 BAS 0 B 1
MILEAGE BAS 0 B 1
M BAS 0 B 1
DIGITS BAS 0 B 1
NUMBLIST BAS 0 B 1
COUNT BAS 0 B 1
SC BAS 0 B 1
DRAWTEXT BAS 0 B 1
SAMPLE BAS 0 B 1
GRSCRWRT BAS 0 B 2
HRTEXT2 BAS 0 B 3
DRAW BAS 0 B 2
WRITER BAS 0 B 1
TYPEBET BAS 0 B 2
WRITEBET BAS 0 B 2
TEXT2 BAS 0 B 2
SANTEE BAS 0 B 2
SHUTTLE BAS 0 B 1
AJOCK BAS 0 B 1
PLATFORM BAS 0 B 1
MAZE BAS 0 B 4
DISKZAPR BAS 0 B 2
ZAP BAS 0 B 3
DETHSHIP BAS 0 B 3
BACKUP35 BAS 0 B 1
BOOT BAS 0 B 1
SCRNLIST BAS 0 B 1
DOSSTART BAS 0 B 1
LABEL BAS 0 B 2
DSKDSABL BAS 0 B 1
NOFREEQ BAS 0 B 1
FORMATER BAS 0 B 1
ROMRAM BIN 2 B 1
SUPDUP BIN 2 B 1
TESTTEXT BAS 0 B 1

* PD-48
Miscellaneous Pgs

EXTBAS BAS 0 B 3
DISAPPEAR BAS 0 B 1
PAINT BAS 0 B 1
DATA BIN 2 B 1
DATA2 BIN 2 B 1
SCRDATA BIN 2 B 1
FILL2 BIN 2 B 2
QUADDRAW BAS 0 B 1
CELTIC BAS 0 B 2
ALL RAM BAS 0 B 1
CHARGEN BIN 2 B 1
ROMRAM BIN 2 B 1
OBSTACLE BAS 0 B 1
64K RAM BAS 0 B 1
COLOSEL BAS 0 B 1
TRIQ BAS 0 B 4
ALGEBRA BAS 0 B 4
PLAY BAS 0 B 1
STATECAP BAS 0 B 2
MLSOUNDS BAS 0 B 1
ROTATION BAS 0 B 2

PARABOLA BAS 0 B 2
INSTAPIC BAS 0 B 1
CLOVER BAS 0 B 1
HAT-PLOT BAS 0 B 1
WHEEL 1 BAS 0 B 1
LETTER-R PAR 1 A 1
3-LINES ROT 1 A 1
TRAPZOID ROT 1 A 2
PYRAMID ROT 1 A 2
CUBE ROT 1 A 3
51X24 BAS 0 B 2
WINDOW BAS 0 B 5
GGPRTSU BAS 0 B 1
KALEIDO BAS 0 B 1
OK83APRT BAS 0 B 1
NUMCNVTR BAS 0 B 1
ADVRTN BAS 0 B 1

* PD-49
Miscellaneous Pgs.

BC BIN 2 B 10
PEDRO BIN 2 B 11
BLOCKADE BAS 0 B 3
REPEAT BAS 0 B 1
AIRPLANX BAS 0 B 1
BUSTOUT BAS 0 B 1
GOLF BAS 0 B 7
CITY BAS 0 B 2
AIR-RAID BAS 0 B 2
MAZE BAS 0 B 4
DUALDUP BIN 2 B 2
DIRMAP BAS 0 B 3
CHESS BAS 0 B 5
WHATZIT BAS 0 B 4
BATLSHIP BAS 0 B 3
SP*ROCKS BAS 0 B 1

* PD-50
Miscellaneous PGMS

GOBBLER BAS 0 B 2
PYTHON BAS 0 B 2
LUNAR BAS 0 B 2
LUNALANA BAS 0 B 1
AMAZING BAS 0 B 2
BALLOON BAS 0 B 1
VAPORWRM BAS 0 B 2
ABM BAS 0 B 3
BULLSEYE BAS 0 B 1
CRASH BAS 0 B 1
DOTS BAS 0 B 3
E-16 BAS 0 B 3
KRYPTON ART 2 B 3
KRYPTON BAS 0 B 1
KRYPTON GAM 0 B 1
NUKEATTK BAS 0 B 2
ASTEROID BAS 0 B 1
PRIX BAS 0 B 2
ONE BIN 2 B 3
TWO BIN 2 B 3
THREE BIN 2 B 3
FOUR BIN 2 B 3
TEMPEST BAS 0 B 2
SNAKE BAS 0 B 2
SCORE DAT 1 A 1
OTHELLO BAS 0 B 4
ROCKS BAS 0 B 3
LANDER BAS 0 B 2

* PD-51
Games & Programs

DRAGRACE BAS 0 B 1
WORMER BAS 0 B 2
SIMON BAS 0 B 2
RIDER BAS 0 B 2
MISSILE BAS 0 B 3
LETSHOOT BAS 0 B 2
SHOOTGAL BAS 0 B 2
MISSILE2 BAS 0 B 3
FENCE BAS 0 B 3
BANDIT BAS 0 B 1
CHICKEN BAS 0 B 2
MAXIMUM BAS 0 B 3
FLIGHT BAS 0 B 2
COVERUP BAS 0 B 2
WORLDMAP BAS 0 B 4
POUNCE BAS 0 B 1
HARTIANS BAS 0 B 2
FINDIT BAS 0 B 3
SCRAMBLE BAS 0 B 5
BOUNBABY BAS 0 B 2
CHICK BAS 0 B 3
BOBO BAS 0 B 3
RUBIC BAS 0 B 4
MCJUMP BAS 0 B 3

PD-56

Glossary, Memory
Maps, Programs

COCO VIP 1 A 4
VIP ON 3 VIP 1 A 1
BEEF VIP 1 A 1
MCTRM3 VIP 1 A 1
GLOSSARY VIP 1 A 7
POKEPEEK VIP 1 A 17
WIDTH VIP 1 A 1
COCO 3 VIP 1 A 17
MISSLES BAS 0 B 2
CLOCK BAS 0 B 1
JET BAS 0 B 4

* PD-57
Picture Files

VAMPIRE PIC 2 B 3
ATLANTA BAS 0 B 3
NOGHOST PIC 2 B 3
AIRPORT BAS 0 B 4
S EASTON BAS 0 B 4
15MLSTEP BAS 0 B 4
HAGAR PIC 2 B 3
SUNSET BAS 0 B 3
S NICKS BAS 0 B 4
SNOOPY1 BAS 0 B 3
HICKEY BIN 1 B 8
DONALD BIN 2 B 8
SNOOPY2 BAS 0 B 4
SNOOPY3 BAS 0 B 4
SNOOPY4 BAS 0 B 4

* PD-58
Miscellaneous Pgs.

DISKLIST BAS 0 B 1
DIRLIST BAS 0 B 2
ML ADDR BAS 0 B 1
DISKDUMP BAS 0 B 1
PRINUTIL BAS 0 B 2
CALPRINT BAS 0 B 3
ALPHSONG BAS 0 B 1
PAINT BAS 0 B 1
DOGPICT BAS 0 B 2
EVADER BAS 0 B 1
NUKATTC BAS 0 B 2
BASICHAP BAS 0 B 3
JOYPAINT BAS 0 B 1
PUMPKIN BAS 0 B 1
HOMOYHS BAS 0 B 1
ABBREV BAS 0 B 4
CONVERT BAS 0 B 3
CASSDIR BAS 0 B 1
CVERT BAS 0 B 1
FLASCARD BAS 0 B 1
MESSAGE BAS 0 B 1
RELOCAT BAS 0 B 1
COUNT BAS 0 B 1
CALENDAR BAS 0 B 1
DOGS BAS 0 B 1
DOGFIGHR BAS 0 B 1
BEAST BAS 0 B 1

* PD-59
GAMES, UTILITIES

64X64F BAS 0 B 1
RND# S BAS 0 B 1
SCROLLER BAS 0 B 1
COCOBUG BAS 0 B 2
DRWBOARD BAS 0 B 1
SPACE BAS 0 B 1
DIR-ADDR BAS 0 B 1
BACKGAMN BIN 2 B 2
CHESS BIN 2 B 3
BATTLE BIN 2 B 2
GERM BIN 2 B 1
BLEEP BAS 0 B 2
TICKER BAS 0 B 3
LEAKYTAP BAS 0 B 3
UTOPIAN BAS 0 B 4
COLORDOT BAS 0 B 3
STAYALIV BAS 0 B 2
TIMEFLT BAS 0 B 3
NAVYGUNS BAS 0 B 2
ATACHAN BAS 0 B 3
CALENDAR BAS 0 B 1
POKER2S BAS 0 B 1
VIEWERS BAS 0 B 1
STUFF BAS 0 B 1

* PD-52
Picture files

COCO MAX 2 B 6
COL COCO MAX 2 B 6
MOOSHEAD MAX 2 B 6
COKE MAX 2 B 6
CUBS MAX 2 B 6
REDS MAX 2 B 6
BREAKERS MAX 2 B 6
USFL MAX 2 B 6
SPACE BIN 2 B 3
QIZMO MAX 2 B 3
DINASOUR MAX 2 B 3

* PD 53
Picture Files

INDIAN MAX 2 B 6
HOMECOME MAX 2 B 6
GRIN BIN 2 B 3
TARD BIN 2 B 3
STUD BIN 2 B 3
COMET BIN 2 B 3
DESERT BIN 2 B 3
FOOD BIN 2 B 3
SMIRK BIN 2 B 3
PLAYA BIN 2 B 3
HELLO BIN 2 B 3
GROVER BIN 2 B 3
DRIVE IN BIN 2 B 3
TIME BIN 2 B 3
KOALA BIN 2 B 3
PATTERN BIN 2 B 3
HAGAR BIN 2 B 3
CHIPS BIN 2 B 3

* PD 54
Picture Files

PENTAGON PIC 2 B 3
GRID 2 PIC 2 B 3
SNOWFLAK PIC 2 B 3
CONETUNL PIC 2 B 3
4-POINT PIC 2 B 3
BALISTR MAX 2 B 3
CARTOON MAX 2 B 3
HUELEWIS MAX 2 B 3
STARTREK MAX 2 B 3
HOUSE1 MAX 2 B 6
HOUSE2 MAX 2 B 6
LIFECYCL MAX 2 B 6
COCOMAQ MAX 2 B 3
MASCASLT MAX 2 B 3
COLUMBIA MAX 2 B 3
POLO MAX 2 B 3
ET BAS 0 B 7
WHEEL 1 PIC 2 B 3

* PD-55
Picture Files

PARKERPT MAX 2 B 3
TOWER PIC 2 B 3
TOWER2 PIC 2 B 3
SCREEN PIC 2 B 3
BOMB PIC 2 B 3
ANDRON PIC 2 B 3
SALE PIC 2 B 3
CHIPS PIC 2 B 3
TUNLROAD BIN 2 B 3
LONEROAD BIN 2 B 3
CITYROAD BIN 2 B 3
LAKEROAD BIN 2 B 3
CROSSROAD BIN 2 B 3
BLACK BIN 2 B 3
CAL1 BIN 2 B 3
CAL2 BIN 2 B 3
CAL3 BIN 2 B 3
3-LEAF PIC 2 B 3
5-STARS PIC 2 B 3
SPHERE PIC 2 B 3
15-LEAF PIC 2 B 3

OS-9 & BASIC09

by
Norm Maticc

We are please to have Norm Maticc continue our OS-9 and Basic09 series. Norm is an Electronics Engineer and has been a color computer enthusiast for many years. He believes that the OS-9 operating system with Basic09 is super. Questions on his editorials will be answered in our Questions and Answers section. - Editor

We have all at one time or another played an adventure game on our computers. The adventure puts us in a strange new environment, where we have to examine things and learn by trial and error. After we spend some time in this environment we start to get comfortable with it and we progress through the adventure to its completion.

OS-9 also puts us in a strange new environment. In this environment, we know as an operating system, there are things to examine and much that can be learned by trial and error. As we spend time in this environment we will become comfortable with it. So without further ado let's put our back-up copies of OS-9 in our disk drives, type DOS, and begin the adventure.

If all went well we should have an OS-9 prompt staring out at us from the screen. If you used the startup file that comes with the system, the prompt should be at the bottom of a rather full screen in the 32 column by 16 line mode. As a starting point let's clear the screen, to alleviate the confus-

ion factor. This is done with the OS-9 display command. It will do for you what the CLS command does in basic. Type in the following command (my command line includes the OS-9 prompt which should already be on your screen), and press enter. OS-9 can take either lowercase or uppercase commands.

```
OS9:display c
```

This should clear your screen and move the prompt to the top of your screen. If you typed the command without the space between display and c then you received an error message. OS-9 is very sensitive about spacing. To find out what the number following the error message stands for you can look it up in appendix A of the OS-9 Commands Reference section of your manual or you can have OS-9 tell you with the ERROR command. Suppose we receive an error #216. We can type in the command line below and press enter and OS-9 will return Path Name Not Found.

```
OS9:error 216
```

That's fine but, what is a path name? OS-9 sets up the files on your disk as directories, sub-directories (directories within other directories) or files. At the top of this structure is the root directory. The root directory of your system disk contains sub-directories, such as CMDS, and files, such as startup. An ac-

cepted convention for OS-9 is to name your directories and sub-directories in uppercase letters and your files in lowercase letters. While this practice is not necessary it does make things easier to sort out when you ask for a directory of your disk. To get a directory for the disk in drive 0 of your system type the following command and press enter.

```
OS9:dir
```

This command lists the names of all sub-directories and files in the root directory. This is by no means a complete listing of all the files on your system disk. There are many files listed under the CMDS directory, but see this list we must specify a pathname so OS-9 will understand what it is we wish to see. Type in the command below to get a directory of the CMDS directory. Note that although the CMDS directory is in uppercase letters OS-9 does not care if we use uppercase or lowercase letters to specify its pathname.

```
OS9:dir cmds
```

The pathname could also contain the name of the device, the file we wished to examine was on. The command line below performs the same function as the previous line.

```
OS9:dir /d0/cmds
```

Although this is of passing interest to use if we use drive 0 for all our computing, it is extremely useful if we have more than one drive. By defining the device the file is on we can access files on other drives, by specifying the proper pathname. The slashes preceding the D0 device name and the CMDS directory name are a necessary part of the command.

Now that we know how to ex-

plore our new environment a little let's find out where we are. OS-9 operates with two different directories, an execution directory and a data directory. To determine what our execution directory is we simply type the command below and press enter.

```
OS9:pxd
```

It tells us our present execution directory is the CMDS directory. This makes sense, because if we again examine this directory we will see the names of many of the commands we are becoming familiar with. When we type one of these commands at the OS9 prompt the system loads it into memory from the disk and executes the command. If we type the following command and press enter, we find out what the present data directory is.

```
OS9:pwd
```

This tells us that our present data directory is the root directory, designated by the /d0. Most of the time we will not need to know this information because we will generally be working out of the directory the system comes up in. It is good information to have if we ever get lost and need to know where we are. Now let's turn our attention to creating a directory of our own and storing a file in our newly created directory.

The command to create a directory is MAKDIR, a name that is straight forward and easy to remember. The other thing we need is a directory name to go with our command. Let us name our directory TEMP, and let's use capital letters to name the directory. Now if we do a dir command it will be easy to spot that TEMP is indeed a directory. Type in the following command and press enter.

OS9:makdir TEMP

If you type dir at the OS-9 prompt you will see our directory listed in capital letters with the other directories and files in the root directory of drive 0. Now we will build a file in our new directory. Our new file will allow us to clear the screen using the display c command. To get this new file in the TEMP directory we will have to specify a pathname. We also have to come up with a filename for our file to be. We will call the file CLS after the BASIC command that performs the same type of function. The BUILD command will allow us to do this. Once again type the following command and press enter but be prepared to be confronted by a question mark prompt.

OS9:build /d0/temp/cls

The disk drive will grind for awhile and then a ? prompt will

appear on the screen. Directly following the prompt type the following command and press enter.

? display c

When you press enter after this command the drive will again grind away for a short while and then another ? prompt will appear. At this prompt just hit the enter key again and this will tell the system to terminate the building of the file. When the drive is finished your new file is complete and ready to use. To use the new file we have to type in its full pathname. Type the following command line and press enter. You should get a nice cleared screen after a small delay for loading of the file.

OS9:/d0/temp/cls

Obviously the typing of the complete pathname is more work

➔ IT'S HERE!! ⬅

Superb Software At Low, Low Prices!!!

PD Pak - \$59.95

Over 400 public domain programs. Features 5-voice music, graphics, utilities, games. Many are better than commercial programs!!! Increase your software library at less than 15 cents per file!! There's no other deal as good as this one, so don't pass it up!

Master Disk Catalog - \$18.76

Catalog up to 14000 (no misprint!) disk files at once!! Features Add, Delete, 5-column print, and screen print. Excellent for *LARGE* libraries. Req. 16K CoCo, disk. CoCo 3 Compatible!

Digital Driver - \$18.47

A very good BBS driver for any BBS. Features Host ON/OFF, Scroll protect, String mask, ON CARRIER CHANGE GOTO, and TONS more! 300 bps with serial port only. Req. 64K CoCo, disk, modem. CoCo 3 Compatible!!

The CoCo Can - \$4.99

A collection of over 300 POKES, PEEKs, and EXECs, some of which have never been published before! Covers CPU, Disk, Commands, Graphics, and MUCH, MUCH more. Was compiled from 30 programmers personal notes, so you know it's worth it!

Send check or money order to:

*10 day
money back
guarantee

Digital Innovations
1859 East 8th Street
Mesa, AZ 85203-6649

QUALITY
is our business!

Please make payment payable to ANDREW BARTELS

than the typing of the display c command, but if we change the present data directory we can just type the three letter file name to get the screen cleared. Type the command below and press enter.

```
OS9:chd /d0/temp
```

Now if you type CLS the drive will grind for a second or two and the screen will clear.

```
OS9:cls
```

We can also use our pwd command to see that we are no longer in the root directory. We are now in our TEMP directory. To get back to the root directory we simply use our CHD command and specify our pathname.

```
OS9:chd /d0
```

Let's consider one last command, the DELDIR command. This will allow use to get rid of our newly created directory if we so desire. Make sure you have used the CHD /D0 command above. If you enter the following command, OS-9 will delete your directory and the files contained therein:

```
OS9:deldir TEMP
```

OS-9 will ask you if you are sure you want to do this. If you do reply with a D at the prompt and your TEMP directory and CLS file will be gone.

So far everything we have looked at will run on either a level I or level II version of OS-9. As we continue exploring the operating system we will run into commands that are applicable to level II only. For now continue working with the system and get comfortable in our new environment, it will be quite an adventure.

Basic09

BASIC09 is the high-level lan-

guage that comes with OS-9 Level II. Once we have OS-9 booted up we can start BASIC09. To do this we must remove the OS-9 system disk and substitute the BASIC09 disk. We then type the following commands.

```
OS9:chx /d0/cmds
OS9:chd /d0
OS9:Basic09
```

This should cause the BASIC09 heading and prompt to appear on the screen. We can set aside space in memory for our BASIC09 program by following the Basic09 command with the amount of memory we wish. BASIC09 automatically sets asides an 8k work space. We can reserve more memory if we have the space in RAM to do so. To leave the BASIC09 workspace we simply type the word BYE after the BASIC09 B: prompt as shown below.

```
B:bye
```

We then can modify our workspace size with the command below:

```
OS9:Basic09 #20k
```

Now that we know how to get into and out of BASIC09, the truth can be told. We could have changed the memory size from within BASIC09 at the B: prompt. We could have used the command listed below:

```
B:mem 20000
```

BASIC09 will not understand the k suffix so 20000 has to be written out to avoid an error message. BASIC09 will automatically round you up to 20223, the equivalent of 20K, minus the memory BASIC09 reserves for its own use.

Now that we are back in BASIC09 we can start programming. The first thing we need to do is get into the edit mode of BASIC09. This is accomplished by typing an e. If we do that alone we will be given a procedure

(BASIC09's name for a program) called program. If we wish to give our program a different filename we can do that upon entering the BASIC09 editor. Let's write a short program to get the hang of this feature.

Our program will clear the BASIC09 screen and sound a beep when its done. We will call the program cls. Before we get started a few words of caution about the editor. It operates like the OS-9 editor. We have to put in a space after the E: prompt or the editor will think we are giving it a command. When we are finished we will type a q and press enter without a space, to quit the editor. Type in the following lines.

```
Ready
B:e cls
PROCEDURE cls
*
E: run gfx2("clear")
*
E: run gfx2("bell")
*
E:q
```

When you press the enter key after the q on the last line, you should be returned to the B: prompt. At this point you can type the following command and your screen should clear and a beep will sound to tell you that it is done.

```
B:run cls
```

We can now get in and out of BASIC09 and in and out of its editor. We also know how to name a program going into the editor. Next time around we will explore the commands in the editor. This will make programming down the road a lot easier on us.

There are many BASIC09 commands that are similar to Microsoft basic. However Basic09 does not require the lines to have numbers. Numbers can be used and are required for GOTO statements. Another difference is with the IF-THEN commands. These commands have to be terminated with the ENDIF command.

The following example program

converts decimal values to hexadecimal (base 16). Hexadecimal is usually abbreviated by hex. Hex uses numbers from 0 to 9 and letters from A to F. The program demonstrates using IF-THEN statements. A label 5 is used to allow branching back to do additional calculations. Remember to skip a space when entering the lines while in the edit mode.

```
PROCEDURE HEXCON
PRINT "BASIC09 DEMO PROGRAM"
PRINT "DECIMAL TO HEX CONVERSION"
PRINT "WRITTEN BY NORM MATICE"
PRINT "FOR DYNAMIC COLOR NEWS"
DIM A,B,C,D,DEC:INTEGER
5 A=0
B=0
C=0
D=0
INPUT "DECIMAL NUMBER? ",DEC
IF DEC>4096 THEN
A=DEC/4096
ENDIF
DEC=DEC-A*4096
IF DEC>256 THEN
B=DEC/256
ENDIF
DEC=DEC-B*256
IF DEC>16 THEN
C=DEC/16
ENDIF
DEC=DEC-C*16
D=DEC
IF A>9 THEN
A=A+55
ELSE
A=A+48
ENDIF
IF B>9 THEN
B=B+55
ELSE
B=B+48
ENDIF
IF C>9 THEN
C=C+55
ELSE
C=C+48
ENDIF
IF D>9 THEN
D=D+55
ELSE
D=D+48
ENDIF
PRINT CHR$(A)+CHR$(B)+CHR$(C)+
CHR$(D)
PRINT
GOTO 5
```

SINK THE SHIPS

This is an exciting game that two people can play. Each has a ship hidden on opposite sides of a mountain. The object of the game is to select an angle for the gun and the proper amount of power so that a shell can be shot over the mountain and hit your opponent's ship. It takes 3 hits to sink a ship. The wind can blow your projectile and tides vary causing different elevations. The first to sink the opponent's ship wins.

```

5 INPUT"PRESS 1 FOR CC-3";CC
10 CLS:PMODE3,1:DIM S1(60),S2(60)
20 IF CC=1 THEN POKE65497,0 ELSE POKE 65495,0
40 GOSUB 5010
50 CLS:PRINT"*****NAVY GUNS*****"
60 PRINT" YOU AND YOUR OPPONENT HAVE MET FOR A BATTLE ON OPPOSITE SIDES OF A LARGE ISLAND . USING YOUR HEAVY ARTILLERY, YOU MUST SINK THE OTHER SHIP BY LOBBING SHELLSOVER THE LAND."
70 PRINT" YOU WILL BE ASKED FOR THE ANGLEOF THE GUN AND THE AMOUNT OF POWDER TO PUT IN IT."
80 PRINT" IT TAKES THREE HITS TO SINK A SHIP AND BE CAREFUL OF THE WINDTHAT BLOW YOUR SHELL, AND TIDES THAT RAISE AND LOWER THE SHIPS."
90 PRINT@480,"PRESS ANY KEY TO CONTINUE...";
100 IF INKEY$="" THEN 100
110 CLS:PRINT"*****NAVY GUNS*****"
120 PRINT" ANGLE MUST BE BETWEEN 0 AND 89 DEGREES, AND THE POWDER BETWEEN 1 AND 30. BOTH MUST BE TWO DIGIT NUMBERS , SO TO ENTER 3 DEGREES, FOR EXAMPLE, ONE MUST ENTER 0

```

```

3. USE _ TO BACKSPACE."
130 PRINT@480,"PRESS ANY KEY TO BEGIN...";
140 IF INKEY$="" THEN 140
500 'GRAFICS SETUP
510 DRAW"S4"
520 PRINT@480,"ONE MOMENT PLEASE ... ";
530 PCLS2:COLOR 1,2:LINE(50,192)-(50,162),PSET:LINE(205,192)-(205,162),PSET
540 Y=162:FOR I=1 TO 15:OY=Y:Y=Y-(RND(20)-5):IF Y>162 THEN Y=Y-15 ELSE IF Y<20 THEN Y=Y+15
550 LINE(50+I*5-5,OY)-(50+I*5,Y),PSET:LINE(205-I*5+5,OY)-(205-I*5,Y),PSET:NEXT I
560 LINE(125,Y)-(130,Y),PSET
570 PAINT(128,191),1,1
580 COLOR 3,2:LINE(0,164)-(49,164),PSET:LINE-(49,191),PSET:LINE(255,164)-(206,164),PSET:LINE-(206,191),PSET
590 PAINT(0,191),3,3:PAINT(255,191),3,3
600 DRAW"C4BM10,160F5R20E5L15ULU4D4L4DL10":PAINT(20,162),4,4
610 DRAW"C4BM245,160G5L20H5R15URU4D4R4DR10":PAINT(235,162),4,4
620 PN=1:NH(0)=0:NH(1)=0
630 GET(0,140)-(50,180),S1,G:GET(206,140)-(256,180),S2,G
640 T1=RND(10)+140:PUT(0,T1)-(50,T1+40),S1,PSET
650 T2=RND(10)+140:PUT(206,T2)-(256,T2+40),S2,PSET
660 SCREEN1,0
1000 'PLAYER INPUT
1010 IF PN=0 THEN PN=1 ELSE PN=0:PLAY"L16CEGEC"
1020 COLOR 1,2:LINE(115,190)-(143,179),PSET,BF
1030 WS=RND(19)-10:DRAW "C4BM125,190"+N$(ABS(WS)):IF WS<0 THEN DRAW"BM120,185L5NE3NF3" ELSE DRAW"BM138,185R5NG5H5"
1040 DRAW"BM"+STR$(10+200*PN)+",30NE10R10BM+10,-4NR5BU3R5BM+3,+7"

```

Dynamic Color News May 1988

```

1050 X$=INKEY$:IF X$="" THEN 105
    0 ELSE IF ASC(X$)=8 THEN AN$=
    "99":GOTO 1070 ELSE IF ASC(X$
    )<58 AND ASC(X$)>47 THEN DRAW
    N$(VAL(X$)) ELSE SOUND 10,3:
    GOTO1050
1060 AN$=AN$+X$:IF LEN(AN$)<2 TH
    EN 1050
1070 IF VAL(AN$)>89 THEN PLAY"L2
    55CECECECL4":AN$="":LINE(10+2
    00*PN,30)-(50+200*PN,20),PRES
    ET,BF:GOTO 1040
1080 AN=VAL(AN$)
1090 AN$="":DRAW"BM"+STR$(10+200
    *PN)+",45U10R5D5L5BR10BUNR5BD
    3R5BR3BD3"
1100 X$=INKEY$:IF X$="" THEN 110
    0 ELSE IF ASC(X$)=8 THEN AN$=
    "99":GOTO 1120 ELSE IF ASC(X$
    )<58 AND ASC(X$)>47 THEN DRAW
    N$(VAL(X$)) ELSE SOUND 10,3:
    GOTO 1100
1110 AN$=AN$+X$:IF LEN(AN$)<2 TH
    EN 1100
1120 IF VAL(AN$)>30 OR VAL(AN$)=
    0 THEN PLAY"L255CECECECEL4":L
    INE(10+200*PN,45)-(50+200*PN,
    35),PRESET,BF:GOTO 1090
1130 PW=SQR(VAL(AN$)*25):AN$=""
1140 IF PN=0 THEN XO=30:DR=1 ELS
    E XO=225:DR=-1
1150 T=0:TI=(1/PW)*8
1160 SN=SIN(AN/(180/3.14)):CS=CO
    S(AN/(180/3.14))
1170 LINE(10+200*PN,45)-(50+200*
    PN,10),PRESET,BF
1180 PLAY"L255T255CEGCEGCEGCEGL4
    T3"
1190 IF XO=255 THEN TX=T2+15 ELS
    E TX=T1+15
2000 'SHELL FLIGHT
2010 T=T+TI
2020 PX=PW*T*CS+WS/5*DR*T:PY=PW*
    T*SN-TR
2030 IF 159-PY<0 THEN2080
2040 TS=PPOINT(XO+(PX*DR),TX-PY)

2050 PSET(XO+PX*DR,TX-PY,4)
2060 IF TS=1 THEN 2510 ELSE IF T
    S=3 THEN 3010 ELSE IF TS=4 TH
    EN 3510
2070 PRESET(XO+PX*DR,TX-PY)
2080 IF XO+PX*DR>250 OR XO+PX*DR
    <10 THEN SOUND 10,2:GOTO 1010
2090 GOTO 2010
2500 'HIT ISLAND
2510 FOR I=1 TO 4:CIRCLE(XO+PX*D
    R,TX-PY),I,2:NEXT I
2520 SOUND 10,2
2530 GOTO 4000
3000 'IN WATER
3010 FOR I=200 TO 150STEP-5:SOUN
    D I,1:NEXT I
3020 GOTO 4000

```

```

3500 'HIT SHIP
3510 PLAY"O1L255T255":FOR I=31 T
    O 11 STEP -2:PLAY"V"+STR$(I)+
    "CEGCEG":NEXT I:PLAY"T4L3"
3520 IF XO+PX*DR<128 THEN NH(0)=
    NH(0)+1:DRAW"BM"+STR$(60+NH(0
    )*5)+",180U3" ELSE NH(1)=NH(1
    )+1:DRAW"BM"+STR$(195-NH(1)*5
    )+",180U3"
3530 X=0
3540 IF NH(0)=3 THEN X=25:L=160
    ELSE IF NH(1)=3 THEN X=230:L=
    25
3550 IF X=0 THEN 4000 ELSE 4500
4000 'TIDES
4010 T1=T1+RND(20)-10:T2=T2+RND(
    20)-10
4020 IF T1>165 THEN T1=165 ELSE
    IF T1<140 THEN T1=140
4030 PUT(0,T1)-(50,T1+40),S1,PSE
    T
4040 IF T2>165 THEN T2=165 ELSE
    IF T2<140 THEN T2=140
4050 PUT(206,T2)-(256,T2+40),S2,
    PSET
4060 GOTO 1010
4500 'FINAL HIT SCORED
4505 IF X<126 THEN D9=T1+25 ELSE
    D9=T2+25
4510 FOR I=1 TO 20:PLAY"O1L255T2
    55CEG":CIRCLE(X,D9),I,4,.75,
    .5,1:NEXTI
4520 DRAW"BM"+STR$(L)+",150S8NU1
    0R3NU5R3NU10BR3NU10BR3U10F5NU
    5D5BR3U10F5NU5D5BR3U10NR5D5NR
    3BF5NL5BR3U10R5G5F5"
4530 PLAY"O1T3L8AL16AAL8AL16AAL8
    ADFAGL16GGL8GL16GGL8GCEGAL16A
    AL8AL16AAL8ABO2CDCQ1AGFL4DD"
4540 CLS:SCREEN0,1
4550 PRINT@128,"ANOTHER GAME (Y/
    N) ?";
4560 X$=INKEY$:IF X$="" THEN 456
    0
4570 IF X$="N" THEN 4610
4580 PRINT@192,"INSTRUCTIONS (Y/
    N) ?";
4590 X$=INKEY$:IF X$="" THEN 459
    0
4600 IF X$="N" THEN 500 ELSE 50
4610 POKE65494,0:END
5000 'GRAFICS #'S
5010 N$(0)="U10R5D10L5BR8":N$(1)
    ="BR4NU10BR4":N$(2)="NR5U5R5U
    5L5BR8BD10":N$(3)="R5U10L5BD5
    R5BR3BD5":N$(4)="BR5U5NU5L5U5
    BR8BD10":N$(5)="R5U5L5U5R5BR3
    BD10"
5020 N$(6)="NR5U10R5BD5NL5D5BR3"
    :N$(7)="BU10R5D10BR3":N$(8)="
    U10R5D5NL5D5NL5BR3":N$(9)="R5
    U10L5D5R5BR3BD5"
5030 RETURN

```

Software Bonanza Pak

A **SPECTACULAR SOFTWARE BONANZA** with the following 12 programs: CoCo Checker, Multi-Pak Crak, CoCo Screen Dump, Disk Utility 2.1, Spectrum Font Generator, Tape/Disk Utility, Pastiche II, 64K Disk Utility, Spectrum DOS, Basic, CoCo Calendar & OS-9 Solution (a \$300 plus value) for only \$99.95

CoCo III Software Library

Creates an instant library of Spectrum Projects TOP CoCoIII software! Get FONT BONANZA, FONT DISK #1, FKEYS III, C III GRAPHICS, CoCoIII UTILITIES and PASTORPE II (a \$150 plus value) for only \$49.95

CoCo III Utilities

Terrific utility programs for the Color Computer III! Includes a CoCoII to CoCoIII Converter, 32K Hi-Res screen saver, 40/80 Column Word Processor, RAM Tester, DDDO WALL generator, SMOOTH Scrolling Menu. 64K DISK \$24.95 (see 9/87 Rainbow review)

CoCo III Secrets Revealed

An introduction to the Color Computer III that compares the differences between the CoCoII and the NEW CoCoIII. Includes: JDE chip specs, CoCoII to CoCoIII converter and a 128/512K RAM test. "Offers some very good information to programmers." - Rainbow review 2/87 \$19.95

CoCo III Screen Dump

This is the program for **HARDCOPY GRAPHICS** for Radio Shack bit-image, dot-matrix printers (DMP-105, PNP-110, etc.) and Epson compatibles (Star Micronics, Panasonic, etc.). Will print SCREEN 1-4 and MODE 0-4. 16 patterns can be CUSTOMIZED for any color on the screen! 128K CoCoIII DISK \$24.95

Fkeys III

A productivity enhancement that gives you the capability to add twenty (20) predefined functions to the CoCoIII by using the CTRL, F1 and F2 keys!! \$24.95 "Get more from your keyboard with FKEYS III!" - Rainbow review 4/87

C III Graphics

A drawing program for the CoCoIII using the new HEMACD graphic features! 320x392 graphics, 16 of any 64 colors, plus the ability to SAVE and LOAD 32K screens. "Paint pretty pictures on the CoCo!" - Rainbow review 12/86 \$19.95

OS-9 Solution

NOW, a program that creates a "USER FRIENDLY" environment within OS-9. The OS-9 SOLUTION replaces 20 of the old "USER HOSTILE" commands with single keystroke, menu driven commands. No more typing in complex long patterns or cumbersome complicated syntax! \$29.95

Telepatch III

All the FEATURES of TELEPATCH plus the classically proportioned characters of the WIZARD with TRUE lowercase! Now CoCoIII compatible! (Upgrade \$15 w/proof of purchase) \$29.95

Tape/Disk Utility

A powerful package that transfers tape to disk and disk to tape automatically. Does an automatic copy of an entire disk of programs to tape. Ideal for Rainbow On Tape to disk. Also copies tape to tape & prints tape & disk directories. TAPE/DISK \$24.95

Multi-Pak Crak

Save ROMPAKS on your 64K Disk System using the RS Multi-Pak Interface. Eliminate constant plugging in of ROMPAKS by keeping ALL PAK software on disk. Includes POKES for "PROBLEM" ROMPAKS & the NEW 16K PAKS (Demon Attack, Dragons Lair...) \$29.95 NOW CoCoIII compatible! Upgrade \$15 w/proof of purchase

Disk Utility 2.1A

A multi-featured tool for USER FRIENDLY disk handling. Utilize a directory window to selectively sort, move, rename & kill file entries. Lightning fast disk I/O for format, copy & backup. Single execution of both Basic & ML programs. 64K DISK \$29.95. NOW also CoCoIII compatible! Upgrade only \$15 w/proof of purchase

Spectrum DOS

Add 24 NEW Disk commands with 2 Hi-Res screens! Supports 40 track & Double-sided drives, fast stepping, auto disk search, error trapping and "ERROREABLE". 64K DISK \$49.95 - New LOW price! \$29.95

Mikey Dial

When used with any Hayes compatible modem and Deluxe Program Pak, adds to Mikeyterm 4.0 the ability to Auto-dial 22 numbers from a menu and load a set of 3 MODEM for each directory choice. Also EASY setup & changing of MODEM settings by command menu. \$19.95 (see 12/86 Rainbow review)

Spectrum Font Generator

Write files using any CoCo Word Processor (TW-64, EliteWord, etc.) and convert them to Highly Detailed character sets! Some of the characters sets supported are: Italics, Old English, Futuristic & Block Character set editor included & supports most dot-matrix printers! \$29.95

Schematic Drafting Processor

Save time and design pro looking diagrams using a 480x520 pixel resolution w/6 viewing windows. Over 70 electronic symbols w/10 definable symbols. (Even Logic gates & Multipin chips!) Print hard copy & save to disk. 64K DISK \$29.95

CoCo Checker

Something possibly wrong with your CoCo? CoCo Checker is the answer! Will test your ROMs, RAMs, Disk Drives & Controller, Printer, Keyboard, Cassette, Joysticks, Sound, PIAs, VDC, Internal Clock Speed, Multi-pak Interface and more! \$24.95

Rickeyterm 2.0

Supports 40/80 column mode, ASCII or XMODEM uploads & downloads, Deluxe RS232C PAK or Serial 'BITBANGER' port, 300/1200 Baud Plus 'STRINGS' (predefined sequences of text) can be read into the-BUFFER from DISK & transmitted by NADEL Type ahead & auto-repeat are also supported. 128K CoCoIII DISK \$39.95 (see 9/87 Rainbow review)

64K Disk Utility Package

Take advantage of an expanded 64K machine. Make an additional 8K of RAM available by relocating the Ext Basic ROM from \$8000 to \$0000. Copy ROMPAKS to disk (even "protected" PAKS) and create a 32K SPOOL buffer for printing. \$24.95

EZ Base

A truly friendly data base program at an affordable price! Keep inventories, hobby collections, recipes, card lists and much more! Hi-Res screen, up to 500 records with 15 fields, record or field search & a MAILING LABELS option. 32K DISK \$29.95

Blackjack Royale

A Hi-Res graphics casino blackjack simulation and card counting tutor. Fully realistic play includes: double down, splits, surrender, insurance, 1-8 decks, burnt cards, shuffle frequency and more! "This fine program is a must for the CoCo Blackjack player." - Rainbow review \$24.95

Spectrum Adventure Generator

The Spectrum Adventure Generator creates adventure games that are 100% ML & very fast! Up to 99 rooms, 255 objects, 70 command words & 255 conditional flags can be used. 64K DISK \$29.95

CoCo Calendar

Get organized for 365 days today with the CoCo Calendar! Designed for recording the entire year's occasions and daily appointments so you can plan ahead. You can store HUNDREDS of entries and our GRAPHIC calendar will show all MONTHS! \$19.95

THE KITCHEN SINK ...

Everything but the KITCHEN SINK!!! Receive all twenty-three (23) colorful UTILITIES from top to bottom, the Software Bonanza Pak to CoCo Calendar (a \$500 plus value) for a SPECIAL price \$149.95!!!



Turn sideways for more Colorful Utilities!

Graphics Designer - \$29.95

Spit 'N' Image - \$34.95

ADOS-3 - \$34.95

EliteWord 80/Spel - \$99.95

SPECTRUM PROJECTS

PO BOX 264
HOWARD BEACH NY 11414

All orders plus \$3.00 shipping/handling
(Foreign orders please add \$5.00)
NYS Residents add sales tax.

Basketball Math

by
Norman Matice

Basketball math is a flash-card type math game with a basketball theme. The program randomly generates math problems in addition, subtraction or multiplication depending on the selection of the user. The operator must also choose the highest number value to appear on the top of the problem and the highest number value to appear on the bottom of the problem.

After these decision have been made, the first problem will be display in the upper left hand corner of the screen. In the upper right hand corner of the screen a scoreboard is drawn. The US on the scoreboard refers to the person doing the problem solving, the THEM is the computer. Each time a problem is correctly answered a basketball player will appear on the screen, dribble down court and shoot the ball. If the question has been answered correctly the ball will fall into the basket, and US will have two points added to their score on the scoreboard. On the other hand if the problem is incorrectly answered the shot will miss the basket, THEM will get the two points and the correct answered will be flashed on the screen.

The game lasts for four quar-

ters of play, with each quarter being five problems long, for a total of twenty problems. At the end of the four quarters your shooting percentage will be displayed. At that point you will be given the option to play again or quit.

Basketball math should work with any CoCo (I,II or III), and work with anything from 4K to 512K. It should work with everything from standard BASIC to disk extended BASIC.

```
10 CLS:?"BASKETBALL MATH
20 ?"WRITTEN BY NORMAN MATICE
30 ?"JANUARY 1988
35 ?"COPYRIGHT (c) 1988
36 ?"dYNAMIC eLECTRONICS iNC.
38 FOR J=1 TO 800:NEXTJ
40 CLS
50 M$="B"
60 FOR Y=158 TO 138 STEP-1
70 X=Y
80 GOSUB 710
90 GOSUB 690
100 NEXT Y
110 M$="A"
120 FOR Y=158 TO 139 STEP-1
130 X=Y
140 GOSUB 710
150 GOSUB 690
160 NEXT Y
170 M$="S"
180 F●R Y=158 TO 140 STEP-1
```

Dynamic Color News May 1988

```

190 X=Y
200 GOSUB 710
210 GOSUB 690
220 NEXT Y
230 M$="K"
240 FOR Y=158 TO 141 STEP-1
250 X=Y
260 GOSUB 710
270 GOSUB 690
280 NEXT Y
290 M$="E"
300 FOR Y=158 TO 142 STEP-1
310 X=Y
320 GOSUB 710
330 GOSUB 690
340 NEXT Y
350 M$="T"
360 FOR Y=158 TO 143 STEP-1
370 X=Y
380 GOSUB 710
390 GOSUB 690
400 NEXT Y
410 M$="B"
420 FOR Y=158 TO 144 STEP-1
430 X=Y
440 GOSUB 710
450 GOSUB 690
460 NEXT Y
470 M$="A"
480 FOR Y=158 TO 145 STEP-1
490 X=Y
500 GOSUB 710
510 GOSUB 690
520 NEXT Y
530 M$="L"
540 FOR Y=158 TO 146 STEP-1
550 X=Y
560 GOSUB 710
570 GOSUB 690
580 NEXT Y
590 FOR Y=158 TO 147 STEP-1
600 X=Y
610 GOSUB 710
620 GOSUB 690
630 NEXT Y
640 FOR X=1 TO 100:NEXT X
650 PRINT@105,"BASKETBALL"
660 PRINT@139," MATH "
670 FOR X=1 TO 1500:NEXT X
680 GOTO 740
690 IF INT(X/2)=X/2 THEN PRINT@X
-32,M$; ELSE PRINT@X,M$;
700 RETURN
710 IF INT(X/2)=X/2 THEN PRINT@X
+1," "; ELSE PRINT@X-31," ";
720 RETURN
730 GOTO 730

```

```

740 CLS
750 S=0:T=0:Q=1:N=0
760 INPUT"ADD, SUBTRACT OR MULTI
PLY(A,S,M)";A$
770 INPUT"LARGEST NUMBER ON TOP"
;TN
780 INPUT"LARGEST NUMBER ON BOTT
OM";LN
790 CLS
800 FOR X=16 TO 176 STEP 32
810 PRINT@X,CHR$(133);
820 NEXT X
830 FOR Y=176 TO 191
840 PRINT@Y,CHR$(131);
850 NEXT Y
860 PRINT@22,"SCORE";
870 PRINT@149,CHR$(143+48);
880 PRINT@50,"US";
890 PRINT@117,"QUARTERS";
900 PRINT@60,"THEM";
910 IF A$="A" THEN GOTO 940
920 IF A$="S" THEN GOTO 1080
930 GOTO 1220
940 P1=RND(TN)
950 P2=RND(LN)
960 IF P1<P2 THEN GOTO 940
970 A=P1+P2
980 IF P1<10 THENPRINT@2,P1; ELS
E PRINT@1,P1;
990 PRINT@32,"+";
1000 IF P2<10 THEN PRINT@34,P2;
ELSE PRINT@33,P2;
1010 PRINT@66,CHR$(131);:PRINT C
HR$(131);
1020 PRINT@95," ";
1030 INPUT R
1040 PRINT@112,CHR$(133);
1050 PRINT@117,"QUARTERS";
1060 GOSUB 1360
1070 GOTO 940
1080 P1=RND(TN)
1090 P2=RND(LN)
1100 IF P1<P2 THEN GOTO 1080
1110 A=P1-P2
1120 IF P1<10 THEN PRINT@2,P1; E
LSE PRINT@1,P1;
1130 PRINT@32,"-";
1140 IF P2<10 THEN PRINT@34,P2;
ELSE PRINT@33,P2;
1150 PRINT@66,CHR$(131);:PRINTCH
R$(131);
1160 PRINT@95," ";
1170 INPUT R
1180 PRINT@112,CHR$(133);
1190 PRINT@117,"QUARTERS";
1200 GOSUB 1360
1210 GOTO 1080

```

Dynamic Color News May 1988

```

1220 P1=RND(TN)
1230 P2=RND(LN)
1240 IF P1<P2 THEN GOTO 1220
1250 A=P1*P2
1260 IF P1<10 THEN PRINT@2,P1; E
      LSE PRINT@1,P1;
1270 PRINT@32,"X";
1280 IF P2<10 THEN PRINT@34,P2;
      ELSE PRINT@33,P2;
1290 PRINT@66,CHR$(131)+CHR$(131
      );
1300 PRINT@95," ";
1310 INPUT R
1320 PRINT@112,CHR$(133);
1330 PRINT@117,"QUARTERS";
1340 GOSUB 1360
1350 GOTO 1220
1360 PRINT@381,CHR$(140);CHR$(14
      0);CHR$(140);
1370 PRINT@413,CHR$(134);CHR$(14
      0);CHR$(137);
1380 FOR X=417 TO 436
1390 PRINT@X," O";
1400 PRINT@X+32," +";
1410 PRINT@X+64," L";
1420 IF INT(X/2)=X/2 THEN PRINT@
      X+34,"0";:GOTO 1460
1430 PRINT@X+34,"-";
1440 PRINT@X+66,"0";
1450 SOUND 1,1
1460 GOSUB 1700
1470 NEXT X
1480 PRINT@X+1,"0";
1490 PRINT@X+33,"'";
1500 GOSUB 1700
1510 PRINT@X+1," ";
1520 PRINT@X+33,"-";
1530 H=32:L=0
1540 FOR X=438 TO 442
1550 PRINT@X-H,"0";
1560 H=H+32:L=L+32
1570 GOSUB 1700
1580 PRINT@X-L," ";
1590 NEXT X
1600 H=32:L=0
1610 FOR X=284 TO 285
1620 PRINT@X+H,"0";
1630 H=H+32:L=L+32
1640 GOSUB 1700
1650 PRINT@X+L," ";
1660 NEXT X
1670 N=N+1
1680 IF R=A THEN GOSUB 1720 ELSE
      GOSUB 1840
1690 RETURN
1700 FOR Y=1 TO 50:NEXT Y

1710 RETURN
1720 H=0
1730 SOUND 255,1
1740 FOR X=1 TO 3
1750 PRINT@446+H,"0";
1760 GOSUB 1700
1770 PRINT@446+H," ";
1780 H=H+32
1790 NEXT X
1800 SOUND 1,1
1810 S=S+1
1820 GOSUB 1990
1830 RETURN
1840 H=0
1850 SOUND 1,1
1860 FOR X=1 TO 4
1870 PRINT@379+H,"0";
1880 GOSUB 1700
1890 PRINT@379+H," ";
1900 H=H+32
1910 NEXT X
1920 SOUND 1,1
1930 T=T+1
1940 PRINT@259,"THE CORRECT ANSW
      ER IS ";A;
1950 FOR Z=1 TO 500:NEXT Z
1960 PRINT@259,"
      ";
1970 GOSUB 1990
1980 RETURN
1990 PRINT@437," ";
2000 PRINT@437+32," ";
2010 PRINT@437+64," ";
2020 PRINT@95," ";
2030 US=S*2:TH=T*2
2040 PRINT@81,US;
2050 PRINT@92,TH;
2060 IF N=5 THEN Q=Q+1:N=0
2070 IF Q=2 THEN PRINT@151,CHR$(
      143+48);
2080 IF Q=3 THEN PRINT@153,CHR$(
      143+48);
2090 IF Q=4 THEN PRINT@155,CHR$(
      143+48);
2100 IF Q=5 THEN GOTO 2120
2110 RETURN
2120 PRINT@102,"US ";US
2130 PRINT@166,"THEM ";TH
2140 PRINT@288,"YOUR SHOOTING PE
      RCENTAGE WAS";US/(US+TH)
2150 PRINT@352,"WOULD YOU LIKE T
      O PLAY AGAIN?"
2160 A$=INKEY$
2170 IF A$=""THEN GOTO 2160
2180 IF A$="Y" THEN GOTO 740
2190 END

```

Taking Control

(Basic Programming Part 8)



Last month we discussed using the editor, generating sound, PEEKS and POKES, and vectors or pointers. There are many applications where it is advantageous to place values into memory. As an example, the RUN command erases variables or sets them all equal to zero. If a program requires parameters to be set up, then these have to be re-entered each time the program is run. If you do not want to lose your variables then use the GOTO command instead of RUN. To use GOTO it is necessary to give a line number. List the first few lines of the program and type in GOTO 10 or some other line. This procedure will preserve the variables. You can also break a program, list it, do memory peeks or pokes, and continue it without losing any variables. Just type CONT <ENTER> to resume operation of the program.

PEEKs & POKES

These powerful commands allow values to be placed into memory and retrieved. Remember that computers only work on numbers. Strings can not be placed into memory but values representing the strings can.

Color computers use a 6809

microprocessor manufactured by Motorola. This is an 8 bit processor which is bus structured and has 8 data lines and 16 address lines. A computer word or byte consists of 8 bits. Two of these bytes can contain a value or pointer that represents any memory location. Last month we discussed some valuable pointers. These consist of memory pairs with the lower memory value designated the most significant (MS) byte and the upper memory value the least significant (LS) byte. To obtain the value of the pointer multiply the MS by 256 and add the LS. The memory pair at 25 and 26 point to the beginning of basic and the pair at 27 and 28 point to the ending of basic. These can be included within the program to designate where in memory the program starts and ends. It could also calculate the length of the program since the length = ending - beginning.

PCLEAR COMMAND

The PCLEAR command is used to reserve graphics pages. A graphics page is 1536 bytes. PCLEAR 1 reserves one graphics page and should be used for long programs or if there are a lot of strings or other variables.

Variables are stored by basic in the memory area above the basic program. Graphics pages are below the program. So we trade off string space for graphics space. If we are not using graphics then PCLEAR 1 will give the maximum amount of memory.

The PCLEAR command moves the program up or down in memory. PCLEAR 8 places it in the highest memory location, reserving 8 graphics pages. The following is a demonstration program showing how the start and ending of a program changes with various PCLEAR commands. Enter numbers from 1 to 8 for the PCLEAR NO. and notice how the memory changes.

```

10 'CONT-1
15 CLS 'CLEAR THE SCREEN
20 ?"THIS DEMONSTRATES USING
30 ?"PCLEAR TO MOVE BASIC
40 BE=256*PEEK(25)+PEEK(26)
50 ?"PGM STARTS AT "BE
60 EN=256*PEEK(27)+PEEK(28)
70 ?"PGM ENDS AT "EN
80 LN=EN-BE 'CALCULATE LENGTH
90 ?"PGM LENGTH ="LN
100 INPUT"ENTER PCLEAR NO.";P
110 PCLEAR P
120 GOTO 20
    
```

VARIABLES IN MEMORY

When variables are contained within the computer's memory, they are not lost when the computer is reset or rerun. The values can be poked into memory and peeked later to determine their value.

As an example suppose the high speed poke is desired for part of a program. To change the speed it is necessary to poke any value into a specified memory location. The memory locations are different for the CC-3 and the older computers. The values are as follows:

HIGH	NORMAL	COMPUTER
SPEED	SPEED	

65495	65494	CC-2
65497	65496	CC-3

Notice that the CC-3 values are 2 more than the CC-2 values. To change the speed it is necessary to poke the memory any value. For example to change the CC-2 to high speed POKE 65495,0 and to change it back to normal speed POKE 65494,0. For the coco 3 POKE 65497,0 for high speed and POKE 65496,0 for normal speed. Let's use memory location 500 to store a value of either 0 for the CC-2 or a 2 for the CC-3. Let's also use memory location 501 to designate our speed. If the value is a 0 then we will use normal speed. Any other value is for fast speed.

We have a demonstration program that allows the speeds to be selected. It also allows selecting the type computer. The program prints \$ signs on the screen. After selecting CC-2 or CC-3 it allows selecting normal or fast speed. The printing can be interrupted by pressing any key. A "1" can be entered to change the speed. If the program were running at the high speed, it would change to the normal speed when a "1" is entered. It will continue at the same speed if a "0" is entered.

Let's give one word of caution. Change back to the normal speed before doing any cassette or disk operations. The cassette and disk drives will not work with the high speed poke.

```

10 CLS:PRINT"CONT-2
20 PRINT"DEMONSTRATING HIGH
   SPEED
30 PRINT"WITH VARIABLES IN
   500 AND 501
40 '500 CONTAINS COMPUTER TYPE
50 'IF VALUE=2 THEN CC-3
60 'IF VALUE=0 THEN CC-2
70 '501 CONTAINS SPEED POKE
80 'IF 501=0 THEN NORMAL SPEED
90 'IF 501>0 THEN HIGH SPEED
100 A$="2"
110 A=PEEK (500):IF A>0 THEN A=2
    
```

```

:A$="3"
120 PRINT "COLOR COMPUTER "A$
130 INPUT"ENTER A 1 TO CHANGE";X
140 IF X=0 THEN 180
150 IF X>0 THEN A=A+2
160 IF A>2 THEN A=0
170 POKE 500,A: GOTO10
180 PRINT"THIS PRINTS $ ON THE
SCREEN
190 S=PEEK(501):A=PEEK(500)
200 IF S=1 THEN S$="HIGH" ELSE
S$="LOW"
210 PRINT"USING "S$" SPEED
220 INPUT"ENTER 1 TO CHANGE";X
230 IF X=0 THEN 300
240 S=S+1:POKE 501,S
250 IF S>1 THEN S=0:POKE 501,S
260 'ENABLE SLOW SPEED
270 IF S=0 THEN POKE 65494+A,0
280 'ENABLE HIGH SPEED
290 IF S=1 THEN POKE 65495+A,0
300 PRINT"PRESS A KEY TO INTERRU
PT"
310 'PRINT A $ EACH PASS
320 PRINT"$";
330 'CHECK FOR PRESSED KEY
340 P$=INKEY$:IF P$="" THEN GO
TO320
350 'KEY WAS PRESSED TO GET HERE
360 PRINT:GOTO200
    
```

One thing about placing variables in memory is that they are saved even if the program is being edited. In fact the variables will be saved even if other programs are run, if the other programs do not use the area reserved for variables. You might want to load another program and run it. Then reload CONT-2 and notice that the variables are the same as when the program was previously run.

A disadvantage of using memory to contain variables is that the program has to keep track of the variables. If a variable is defined by basic, then basic keeps track of where the variables are located.

A word processor requires memory for the text. A good word processor can be written using basic although most commercial processors are machine language or a combination of basic and machine language. For a word

SP-1200AS PRINTERS

The superior SP-1200AS printer has features found in more expensive printers. They can operate at 9600 baud and the 10K buffer allows over two pages of storage within the printer freeing the computer while printing is being completed. It has 8 graphics modes and is compatible with COCO MAX and other graphics programs that have EPSON print drivers. It has near letter quality print and user defined characters can be generated and downloaded. Compare these specifications before deciding on a printer.

MAIN FEATURES

- * Paper-out detection
- * Automatic paper loading
- * Automatic paper ejection
- * Character pitch settings (via switches or commands)
- * Variety of character fonts including Near Letter Quality, Proportional, & Graphic printing.
- * Form feed function, provided by switch or command.
- * Self-Test printing
- * Automatic Printing
- * Double-Width Character mode
- * Bold Character mode
- * Double-Strike Character mode
- * Italic Character mode
- * Superscript/Subscript Character mode
- * Buzzer function
- * Internal Ram error detection
- * Input data hexadecimal dump
- * Download character function (user-defined character) A maximum of 128 download characters in Draft mode
- * Standard mode/IBM mode, selected by using a dip switch (Epson compatible in standard mode).
- * Optional Automatic Cut Sheet Feeder
- * 10.3K-byte communications buffer (8.7K-byte communications buffer when using download character)
- * Baud rates of 1200, 2400, 4800, and 9600
- * 185 Characters & Symbols
- * 49 International characters
- * Print Modes: Pica-10CPI, Elite-12 CPI, Condensed-17CPI, Condensed Elite-20CPI
- * 8 graphics modes consisting of 480, 576, 640, 720, & 960, 1920, 1152. & 8 or 9 dots vertical
- * Select print type with front panel switches
- * Cable for color computer is included
- * Includes DYPRINT software for printing banners or large graphics pictures

Order SP-1200AS and specify tape or disk software for DYPRINT. \$229 + \$5 S/H.

Checks VISA or MC Cards

DYNAMIC ELECTRONICS
 BOX 896 (205) 773-2758
 HARTSELLE, AL 35640

processor at least 3 pointers will be required. The beginning and the ending of the text are obviously needed. Also if editing is to be included, a pointer will be required to designate the portion of the text to be edited. These pointers can be placed in fixed memory like we did in our CONT-2 program.

Let's write a word processor program that starts at 4000 in memory. Let's reserve 3998 and 3999 for a pointer to the end of our text. The text can be saved to a cassette or disk as a machine language program. For a machine language save the beginning, ending, and execution addresses are required. Since values will be poked into memory, they will not be lost if the program is stopped.

Our word processor will not have all the features of a sophisticated processor but it will allow text to be written, saved, and printed to the screen or a printer. This could be useful for writing personal letters or notes. Next month we could add some additional features such as inserting and deleting characters.

```

10 'CONT-3
14 'COPYRIGHT 1988
18 'DYNAMIC ELECTRONICS INC.
20 'WORD PROCESSOR DEMO PGM
30 'THIS STORES TEXT IN MEMORY
40 'AND ALLOWS THE TEXT TO BE
50 'RETRIEVED AND PRINTED TO A
60 'PRINTER
70 'TEXT STARTS AT 4000
80 '3998 IS END OF TEXT POINTER
90 CLS:PRINT"1 NEW FILE
100 PRINT"2 ADD TO FILE
110 PRINT"3 SAVE FILE
120 PRINT"4 PRINT THE FILE
125 PRINT"5 LOAD A FILE
130 INPUT"ENTER NUMBER";N
135 'THIS IS THE EASY FOR BRANCH
    ING
140 ON N GO TO 500, 1000, 1500,
    2000, 2500
150 GOTO90
500 '
510 CLS:PRINT"THIS CREATES A NEW
    FILE AND":PRINT"ERASES THE O
    LD FILE
512 'SET POINTER TO START OF MEM
515 POKE 3998,15: POKE 3999,160
520 PRINT"USE THE DOWN ARROW TO
    END."
530 PRINT"START ENTERING THE TEX
    T."
540 'SET THE POINTER
550 M=256*PEEK(3998)+PEEK(3999)

```

```

560 'WAIT FOR KEY PRESSED
570 X$=INKEY$:IF X$="" THEN 570
580 X=ASC(X$)'STRING TO NUMBER
590 PRINTX$;'PRINT THE CHARACTE
    R
600 'CHECK FOR LEFT ARROW
610 'MOVE POINTER BACK 1 IF LEFT
    ARROW
620 IF X=8 THEN M=M-1:GOTO570
630 POKE M,X 'PUT VALUE IN BUFFE
    R
640 M=M+1 'INCREASE POINTER
650 'SAVE POINTER
660 MS=INT(M/256):POKE 3998,MS
670 LS=M-256*MS: POKE 3999,LS
680 'CHECK FOR DOWN ARROW
685 'AND GO TO MENU IF X=10
690 IF X=10 THEN 90
700 'GET NEXT CHARACTER
710 GOTO 570
999 '
1000 CLS:PRINT"THIS CONTINUES TE
    XT"
1005 'THIS IS THE SAME AS ENTERI
    NG TEXT EXCEPT DON'T RESET TH
    E POINTER
1010 GOTO530
1499 '
1500 PRINT"THIS SAVES THE FILE"
1510 PRINT"1 DISK SAVE"
1520 PRINT"2 CASSETTE SAVE"
1525 'GET ENDING OF BUFFER
1530 EN=256*PEEK(3998)+PEEK(3999
    )
1532 BE=3998 'BEGINNING INCLUDES
    THE END OF BUFFER POINTER
1540 INPUT"ENTER NUMBER";X
1550 INPUT"ENTER NAME";N$
1560 IF X=1 THEN SAVEM N$,BE,EN,
    BE
1570 IF X=2 THEN CSAVEM N$,BE,EN
    ,BE
1580 GOTO10
1999 '
2000 CLS:PRINT"THIS PRINTS THE F
    ILE"
2010 EN=256*PEEK(3998)+PEEK(3999
    )
2015 INPUT"ENTER 1 FOR PRINTER";
    P
2020 FOR J=4000 TO EN
2030 A=PEEK(J):A$=CHR$(A)
2040 PRINTA$;
2050 IF P=1 THEN PRINT#-2,A$;
2060 NEXT J
2070 PRINT
2080 INPUT"PRESS KEY TO CONTINUE
    ";X
2090 GOTO10
2499 '
2500 CLS:PRINT"THIS LOADS A FILE
2510 PRINT"1 DISK FILE
2520 PRINT"2 CASSETTE FILE
2530 INPUT"ENTER NUMBER";X
2540 INPUT"ENTER FILE NAME";N$
2550 IF X=1 THEN LOADM N$
2560 IF X=2 THEN CLOADM N$
2570 GOTO10

```

Editor's Comments

The cold weather is over and we are enjoying the nice 70-80 degree temperatures. I really like the Spring because it is such a change from the cold Winter. The days are getting longer, grass is growing, birds are chirping, and flowers are blooming. We have a lot of rain this time of the year which causes the small streams to rise. I like to occasionally take my canoe out in these streams and really enjoy nature.

There seems to be a growing interest in computers at least in our small town. The interest seems to be picking up for IBM compatible computers. About a year and a half ago IBM introduced a new line of computers. I have not read or heard much about them but do know that they are expensive. A few years ago when IBM entered the microcomputer market, computers were using an operating system called CP/M. IBM'S personal computers (PC) used MSDOS. The acceptance of these computers was very good and now MSDOS has become the standard operating system for IBM compatible computers. There are many versions of MSDOS. CP/M is not heard very much.

Other manufacturers began producing IBM compatible computers called CLONES. Many of the clones outperformed the IBM PC and now turbo clones can operate several times faster than the original IBM computers. Radio Shack produces clones which are their 1000 series computers. There are many questions I have about these computers which their average salesperson can not answer. A standard clone has 8 slots for expansion boards. The master board (or mother board) can accept up to 640K of

memory. The Radio Shack clones are 128K and 256K. Expansion memory boards are available. How much does it cost to upgrade them to 640K? How many boards are required? How many expansion slots are available and what software will they not run? I have talked with some people who own them and they seemed to be pleased with them. I believe they are good computers if expansion were not desired. A computer is a large investment and it is nice to know what you are getting for your money.

The color computer 3 with 512K is a good match for a clone. There are some very good software packages for the CC3 as well as the CC2. I had rather use my word processor than PC Write or Word Star for a clone. The COCO is generally more friendly than the clones and is a good match for speed. Special programs for the color computers are usually cheaper than comparable programs for a clone.

The level 2 OS-9 operating system is super once you get the hang of it. Basic09 is easy to use and is much faster than normal basic. The commands are very similar and those who can program in Microsoft basic should have no problems learning it. We are pleased to have Norman Maticc to continue our OS-9 series. He has been involved with color computers for several years and is very interested in OS-9 and Basic09. He is also experienced with level 1 OS-9. See his editorials in this issue.

I want to thank those of you who have passed out copies of our magazine at computer club meetings. This has helped us

and we appreciate your support. If you are a member of a club or a student at a school that uses color computers, we would appreciate it if you could pass out a few copies. Let us know how many you can use or send us names and we will mail them direct. The increased postage and our larger size has forced us to increase our subscription price. We are at the 40-50 page level now which I feel is a comfortable level. We can present more articles and programs making Dynamic Color News a better bargain than ever.

At least once a month we get a letter or phone call from someone wanting to know if we are planning on continuing. The answer is yes. There have been many color computer magazines that have ceased publication and I guess this scares people. If

we just had the magazine we might be in trouble. Since we have other products, subscribers and others purchase from us. This keeps us going.

We now have a local printer doing all of our printing. He has had many years of experience in printing and this gives us more time to use in other areas.

I am becoming involved with MODEMS for the IBM PC. For about 2 years I have been writing on my model 100 and transferring programs to the COCO with our DYTERM program. A MODEM allows data to be transferred over telephone lines allowing access to bulletin boards and exchanging programs. We have MODEMS that can be used with the COCO that run at 300 or 1200 baud. This is exciting because the computer can dial the telephone as well as transfer data.

SALE

CAMERA READY
Small Additional Charge
For Corrections/Additions
6^{PM} - Second Color

(#10 Reg. Env.)

#10 Regular White Envelopes

1000	\$27.50
2500	\$25.50 (per 1000)
5000	\$24.50 (per 1000)



OPC Printing & Stationery

214 West Main Street
Hartselle, Alabama 35640

(205) 773-0312



Designer and Supplier of Business Forms and Systems

ham radio & computers

by

bill chapple w4gqc

Each month in this section I discuss using computers with ham radio operation. Last month I presented a tuning meter program that displayed frequencies across the screen on calibrated scales. Audio, RTTY, and PACKET scales were included as separate options on the menu. This worked by placing audio on the cassette cable. I have also presented a weather facsimile (WEFAX) and a radio teletype (RTTY) program that used the cassette interface.

This month I have a ham math program that does many types of calculations. This would be beneficial to those wanting to upgrade their license or for experimenters who like to work with electronic components. It calculates Ohm's Law equations, power equations, capacitive and inductive reactances, resonance frequency, impedance, decibels, and antennas. The program is menu oriented requiring only the instructions printed on the screen.

Ham Math Program

```

10 CLS
15 'PUBLIC DOMAIN
20 PRINT@38,"CALCULATIONS FOR HAM
MS"
30 PRINT"OHM'S LAW FIND < R
> ---- A"
40 PRINT"OHM'S LAW FIND < I
> ---- B"
50 PRINT"OHM'S LAW FIND < E
> ---- C"
60 PRINT"POWER < E & R> FIND < W

```

```

> ---- D
70 PRINT"POWER < E & I> FIND < W
> ---- E"
80 PRINT"POWER < I & R> FIND < W
> ---- F"
90 PRINT"POWER < W & E> FIND < I
> ---- G"
100 PRINT"POWER < W & I> FIND < E
> ---- H"
110 PRINT"POWER < W & R> FIND < E
> ---- I"
120 PRINT"POWER < W & R> FIND < I
> ---- J"
130 PRINT"RESISTORS IN SERIES
---- K"
140 PRINT"RESISTORS IN PARALLEL
---- L"
145 PRINT"EXIT PROGRAM
---- 2"
150 PRINT"<PRESS SPACE BAR FOR L
AST MENU>"
160 AC$=INKEY$
170 IFAC$=""GOTO160
180 AC=VAL(AC$)
190 IFAC>0THENAC=AC+26
200 IFAC>26THENGOTO480
210 AC=ASC(AC$)
220 AC=AC-64
230 IFAC>0ANDAC<27GOTO480
240 CLS
250 PRINT"POWER TO DECIBELS
---- M"
260 PRINT"VOLTAGE TO DECIBELS
---- N"
270 PRINT"DECIBELS TO POWER
---- O"
280 PRINT"DECIBELS TO VOLTAGE
---- P"
290 PRINT"FIND CAPACITIVE REACTA
NCE---- Q"
300 PRINT"FIND CAPACITANCE
---- R"
310 PRINT"FIND FREQUENCY (CAP)
---- S"
320 PRINT"FIND INDUCTIVE REACTAN

```

Dynamic Color News May 1988

```

CE ---- T"
330 PRINT"FIND INDUCTANCE
      ---- U"
340 PRINT"FIND FREQUENCY (IND)
      ---- V"
350 PRINT"FIND RESONANCE
      ---- W"
360 PRINT"FIND L OR C AT RESONAN
CE ---- X"
370 PRINT"ANTENNAS
      ---- Y"
380 PRINT"IMPEDANCE FIND Z
      ---- Z"
390 PRINT"IMPEDANCE FIND X OR R
      ---- 1"
400 AC$=INKEY$
410 IFAC$=""GOTO400
420 AC=VAL(AC$)
430 IFAC>0THENAC=AC+26
440 IFAC>26THENGOTO480
450 AC=ASC(AC$)
460 AC=AC-64
470 IFAC<1ORAC>26GOTO10
480 CLS
490 ONAC GOSUB520,600,680,750,83
    0,900,970,1050,1130,1200,1280
    ,1360,1470,1610,1750,1850,195
    0,2090,2210,2340,2470,2600,27
    30,2980,3200,3940,4010,4110
500 GOTO10
510 '
520 PRINT@38,"SOLVE FOR < R >"
530 PRINT:INPUT"< E >= (VOLTS)=
";AA
540 PRINT:INPUT"< I >= (AMPS)= "
;AB
550 IFAB=0GOTO540
560 PRINT:PRINTAA"VOLTS /"AB"AMP
S = ":PRINT:PRINTAA/AB"OHMS"
570 A$=INKEY$: IFA$=""GOTO570
580 RETURN
590 '
600 PRINT@38,"SOLVE FOR < I >"
610 PRINT:INPUT"< E >=(VOLTS)= "
;AA
620 PRINT:INPUT"< R >= (OHMS)";A
B
630 IFAB=0GOTO620
640 PRINT:PRINTAA"VOLTS /"AB"OH
MS = ":PRINT:PRINTAA/AB"AMPS"
650 A$=INKEY$: IFA$=""GOTO650
660 RETURN
670 '
680 PRINT@38,"SOLVE FOR < E >"
690 PRINT:INPUT"< I >= (AMPS)= "
;AA
700 PRINT:INPUT"< R >= (OHMS) ";
AB
710 PRINT:PRINT" "AA"AMPS":PRI
NT" X "AB"OHMS":PRINT" = "AA*
AB"VOLTS"
720 A$=INKEY$: IFA$=""GOTO720
730 RETURN
740 '
750 PRINT@38,"SOLVE FOR < P >"
760 PRINT:INPUT"< E >= (VOLTS)=
";AA
770 PRINT:INPUT"< R >= (OHMS) ";
AB
780 IFAB=0GOTO770
790 PRINT:PRINT" "AA"VOLTS":PR
INT" X "AA"VOLTS":PRINT" / "A
B"OHMS ":PRINT" = "AA*AA/AB"W
ATTS"
800 A$=INKEY$: IFA$=""GOTO800
810 RETURN
820 '
830 PRINT@38,"SOLVE FOR < P >"
840 PRINT:INPUT"< E >= (VOLTS)=
";AA
850 PRINT:INPUT"< I >= (AMPS)= "
;AB
860 PRINT:PRINT" "AA"VOLTS":PR
INT" X "AB"AMPS":PRINT" = "AA
*AB"WATTS"
870 A$=INKEY$: IFA$=""GOTO870
880 RETURN
890 '
900 PRINT@38,"SOLVE FOR < P >"
910 PRINT:INPUT"< I >= (AMPS)= "
;AA
920 PRINT:INPUT"< R >= (OHMS)=";
AB
930 PRINT:PRINT" "AA"AMPS":PRI
NT" X "AA"AMPS":PRINT" X "AB"
OHMS":PRINT" = "AA*AA*AB"WATT
S"
940 A$=INKEY$: IFA$=""GOTO940
950 RETURN
960 '
970 PRINT@38,"SOLVE FOR < I >"
980 PRINT:INPUT"< P >= (WATTS)="
;AA
990 PRINT:INPUT"< E >= (VOLTS)=
";AB
1000 IFAB=0GOTO990
1010 PRINT:PRINT" "AA"WATTS":P
RINT" / "AB"VOLTS":PRINT" = "
AA/AB"AMPS"
1020 A$=INKEY$: IFA$=""GOTO1020
1030 RETURN
1040 '
1050 PRINT@38,"SOLVE FOR < E >"
1060 PRINT:INPUT"< P >= (WATTS)=
";AA
1070 PRINT:INPUT"< I >= (AMPS)=

```

Dynamic Color News May 1988

```

";AB
1080 IFAB=0GOTO1070
1090 PRINT:PRINT" "AA"WATTS":P
RINT" / "AB"AMPS":PRINT" = "A
A/AB"VOLTS"
1100 A$=INKEY$:IFA$=""GOTO1100
1110 RETURN
1120 '
1130 PRINT@38,"SOLVE FOR < E >"
1140 PRINT:INPUT"< P >= (WATTS)=
";AA
1150 PRINT:INPUT"< R >= (OHMS)="
;AB
1160 PRINT:PRINT"SQ ROOT("AA"WAT
TS X"AB"OHMS)=":PRINT:PRINTSQ
R(AA*AB)"VOLTS"
1170 A$=INKEY$:IFA$=""GOTO1170
1180 RETURN
1190 '
1200 PRINT@38,"SOLVE FOR < I >"
1210 PRINT:INPUT"< P >= (WATTS)=
";AA
1220 PRINT:INPUT"< R >= (OHMS)="
;AB
1230 IFAB=0GOTO1220
1240 PRINT:PRINT"SQ ROOT ("AA"WA
TTS /"AB"OHMS)=":PRINT:PRINTS
QR(AA/AB)"AMPS"
1250 A$=INKEY$:IFA$=""GOTO1250
1260 RETURN
1270 '
1280 PRINT@38,"RESISTORS IN SERI
ES
1290 PRINT:INPUT"FIRST RESISTOR"
;AA
1300 PRINT:INPUT"NEXT RESISTOR";
AB
1310 IFAB=0THENRETURN
1320 PRINTAA"OHMS +"AB"OHMS=":PR
INT:PRINTAA+AB"OHMS":AA=AA+AB
1330 A$=INKEY$:IFA$=""GOTO1330
1340 RETURN
1350 '
1360 PRINT@38,"RESISTORS IN PARA
LLEL"
1370 PRINT:INPUT"FIRST RESISTOR"
;AA
1380 PRINT:INPUT"NEXT RESISTOR";
AB
1390 IFAB=0ORAA=0THENRETURN
1400 PRINT("AA"OHMS X"AB"OHMS)"
1410 FORA=1TO29:PRINTCHR$(128);:
NEXT:PRINT" = "
1420 PRINT("AA"OHMS +"AB"OHMS)"
:PRINT:PRINT(AA*AB)/(AA+AB)"O
HMS"
1430 AA=(AA*AB)/(AA+AB):PRINT
1440 A$=INKEY$:IFA$=""GOTO1440

1450 RETURN
1460 '
1470 CLS:PRINT@38,"POWER TO DECI
BELS"
1480 PRINT:INPUT"FIRST POWER IN
WATTS";AB
1490 IFAB=0THENRETURN
1500 PRINT:INPUT"SECOND POWER IN
WATTS";AA
1510 IFAA=0THENRETURN
1520 PRINT:PRINT" "
AA"WATTS"
1530 PRINT"(10)X(LOG 10)OF";
1540 FORX=1TO14:PRINTCHR$(128);:
NEXT
1550 PRINT" = "
1560 PRINT" "AB"WAT
TS"
1570 PRINT:PRINT" "10*(LOG(A
A/AB)/LOG(10))"DECIBELS"
1580 A$=INKEY$:IFA$=""GOTO1580
1590 RETURN
1600 '
1610 CLS:PRINT@38,"VOLTAGE TO DE
CIBELS"
1620 PRINT:INPUT"FIRST VOLTAGE";
AB
1630 IFAB=0THENRETURN
1640 PRINT:INPUT"SECOND VOLTAGE"
;AA
1650 IFAA=0THENRETURN
1660 PRINT:PRINT" "
AA"VOLTS"
1670 PRINT"(20)X(LOG 10)OF";
1680 FORX=1TO14:PRINTCHR$(128);:
NEXT
1690 PRINT" = "
1700 PRINT" "AB"VOL
TS"
1710 PRINT:PRINT" "20*(LOG(A
A/AB)/LOG(10))"DECIBELS"
1720 A$=INKEY$:IFA$=""GOTO1720
1730 RETURN
1740 '
1750 CLS:PRINT@38,"DECIBELS TO P
OWER"
1760 PRINT:INPUT"DECIBELS";AA
1770 PRINT:INPUT"ORIGIONAL POWER
";AB
1780 IFAB=0THENRETURN
1790 PRINT:PRINT"ANT LOG("AA"DB/
10)X("AB"WATTS)="
1800 PRINT:PRINT(EXP((AA/10)*LOG
(10)))*("AB"WATTS"
1810 PRINT:PRINT:PRINT:PRINT
1820 A$=INKEY$:IFA$=""GOTO1820
1830 RETURN
1840 '

```


Dynamic Color News May 1988

```

1850 CLS:PRINT@38,"DECIBELS TO V
      OLTA GE"
1860 PRINT:INPUT"DECIBELS";AA
1870 PRINT:INPUT"ORIGIONAL VOLTA
      GE";AB
1880 IFAB=0THENRETURN
1890 PRINT:PRINT"ANT LOG("AA"DB/
      20)X("AB"VOLTS)="
1900 PRINT:PRINT(EXP((AA/20)*LOG
      (10)))*("AB"VOLTS"
1910 PRINT:PRINT:PRINT:PRINT
1920 A$=INKEY$:IFA$=""GOTO1920
1930 RETURN
1940 '
1950 CLS:PRINT@38,"FIND CAPACITA
      VE REACTANCE"
1960 PRINT:INPUT"      C IN UFD";A
      A
1970 IFAA=0THENRETURN
1980 PRINT:INPUT"      F IN HZ";AB
1990 IFAB=0THENRETURN
2000 PRINT:PRINT"      1,000,0
      00"
2010 PRINT"      ";:FORN=1TO25:PRI
      NTCHR$(128);:NEXT:PRINT" ="
2020 PRINT"      2(PI)("AB"HZ)("AA
      "UFD)"
2030 PRINT:PRINT1000000/((2)*(3.
      1415927)*("AB")*("AA"))"OHMS"
2040 PRINT:PRINT:PRINT
2050 A$=INKEY$:IFA$=""GOTO2050
2060 IFAC>0THENPRINT"UH"
2070 RETURN
2080 '
2090 CLS:PRINT@38,"FIND MICROFAR
      DS"
2100 PRINT:INPUT"      X SUB C IN
      OHMS";AA
2110 IFAA=0THENRETURN
2120 PRINT:INPUT"      F IN HZ";AB
2130 IFAA=0THENRETURN
2140 PRINT:PRINT"      1,000,0
      00"
2150 PRINT"      ";:FORN=1TO25:PRI
      NTCHR$(128);:NEXT:PRINT" ="
2160 PRINT"      2(PI)("AB"HZ)("AA
      "OHMS)"
2170 PRINT:PRINT1000000/((2)*(3.
      1415927)*("AB")*("AA"))"UFD"
2180 PRINT:PRINT:PRINT
2190 A$=INKEY$:IFA$=""GOTO2190
2200 RETURN
2210 CLS:PRINT@38,"FIND FREQUENC
      Y"
2220 PRINT:INPUT"      C IN UFD";A
      A
2230 IFAA=0THENRETURN
2240 PRINT:INPUT"      X SUB C IN
      OHMS";AB
2250 IFAB=0THENRETURN
2260 PRINT:PRINT"      1,000,0
      00"
2270 PRINT"      ";:FORN=1TO25:PRI
      NTCHR$(128);:NEXT:PRINT" ="
2280 PRINT"      2(PI)("AB"OHMS)("
      AA"UFD)"
2290 PRINT:PRINT1000000/((2)*(3.
      1415927)*("AB")*("AA"))"HZ"
2300 PRINT:PRINT:PRINT
2310 A$=INKEY$:IFA$=""GOTO2310
2320 RETURN
2330 '
2340 CLS:PRINT@38,"FIND INDUCTIV
      E REACTANCE"
2350 PRINT:INPUT"      L IN UH";AA
2360 IFAA=0THENRETURN
2370 PRINT:INPUT"      F IN HZ";AB
2380 IFAA=0THENRETURN
2390 PRINT:PRINT" (2)(PI)("AB"HZ
      )("AA"UH)
2400 PRINT" ";:FORN=1TO28:PRINTC
      HR$(128);:NEXT:PRINT" ="
2410 PRINT"      1,000,000"
2420 PRINT:PRINT((2)*(3.1415927)
      *(AB)*("AA"))/1000000"OHMS"
2430 PRINT:PRINT:PRINT
2440 A$=INKEY$:IFA$=""GOTO2440
2450 RETURN
2460 '
2470 CLS:PRINT@38,"FIND MICROHEN
      RYS"
2480 PRINT:INPUT"      X SUB L IN
      OHMS";AA
2490 IFAA=0THENRETURN
2500 PRINT:INPUT"      F IN HZ";AB
2510 IFAA=0THENRETURN
2520 PRINT:PRINT"      ("AA"OHMS)(
      1000000)
2530 PRINT"      ";:FORN=1TO25:PRI
      NTCHR$(128);:NEXT:PRINT" ="
2540 PRINT"      2(PI)("AB"HZ)
2550 PRINT:PRINT(AA)*(1000000)/
      ((2)*(3.1415927)*("AB"))"UH"
2560 PRINT:PRINT:PRINT
2570 A$=INKEY$:IFA$=""GOTO2570
2580 RETURN
2590 '
2600 CLS:PRINT@38,"FIND FREQUENC
      Y"
2610 PRINT:INPUT"      X SUB L IN OH
      MS";AA
2620 IFAA=0THENRETURN
2630 PRINT:INPUT"      L IN UH";AB
2640 IFAB=0THENRETURN
2650 PRINT:PRINT"      ("AA"OHMS)(
      1,000,000)"

```

Dynamic Color News May 1988

```

2660 PRINT"      ";:FORN=1TO25:PRIN
      NTCHR$(128);:NEXT:PRINT" ="
2670 PRINT"      2(PI)("AB"UH)"
2680 PRINT:PRINT(AA)*(1000000)/((
      (2)*(3.1415927)*(AB))"HZ
2690 PRINT:PRINT:PRINT
2700 A$=INKEY$: IFA$=""GOTO2700
2710 RETURN
2720 '
2730 CLS:PRINT@38,"FIND RESONANC
      E"
2740 PRINT:INPUT" L IN UH";AA
2750 IFAA=0THENRETURN
2760 PRINT:INPUT" C IN UFD";AB
2770 IFAB=0THENRETURN
2780 PRINT:PRINT"      1,000,00
      0"
2790 PRINT"      ";:FORN=1TO25:PRIN
      TCHR$(128);:NEXT:PRINT" ="
2800 PRINT"      2(PI)(SQ RT(("AA"
      UH)("AB"UFD))
2810 PRINT:PRINT1000000/(((2)*(3.
      1415927)*(SQR((AA)*(AB))))"HZ
      "
2820 PRINT:PRINT:PRINT
2830 A$=INKEY$: IFA$=""GOTO2830
2840 RETURN
2970 '
2980 CLS:PRINT@38,"FIND L OR C"
2990 AB=0:AC=0
3000 PRINT:INPUT" F IN HZ";AA
3010 IFAA=0THENRETURN
3020 PRINT@226,"OR C IN UFD
3030 PRINT@126,""
3040 PRINT:INPUT" L IN UH";AB
3050 IFAB>0GOTO3070
3060 PRINT:INPUT" OR C IN UFD";
      AC
3070 IFAB+AC=0THENRETURN
3080 PRINT:PRINT"      1,000,00
      0"
3090 PRINT"      ";:FORN=1TO25:PRIN
      TCHR$(128);:NEXT:PRINT" ="
3100 PRINT" (2)(PI)("AA"HZ)(2)(P
      I)("AA"HZ)("AB+AC;
3110 IFAB>0THENPRINT"UH)"
3120 IFAC>0THENPRINT"UFD)"
3130 PRINT:PRINT10000000000000/(((
      (2)*(3.1415927)*(AA))*((2)*(3
      .1415927)*(AA))*((AB+AC)));
3140 IFAB>0THENPRINT"UFD"
3150 IFAC>0THENPRINT"UH"
3160 PRINT:PRINT
3170 A$=INKEY$: IFA$=""GOTO3170
3180 RETURN
3190 '
3200 REM CALCULATIONS BASED ON
      FORMULAS FROM 1968 A.R.R.L.
      ANTENNA BOOK.
3210 REM ADAPTED FOR THE COLOR
      COMPUTER BY WOCZ KENNETH A.
      CHRISTIANSEN ON FEB 6, 1

```

982.

```

3220 REM QUAD DIMENTIONS ARE BAS
      ED ON TABLE 12-1 ON PAGE 270
      FOR THE BOOMLESS QUAD ON PAG
      E 272
3230 REM THE YAGI DIMENTIONS ARE
      BASED ON THE CHARTS ON PAGE
      263 FOR SPACEING OF .15 WAVE
      FOR BOTH DR TO DE AND DE
      TO RE
3240 REM THE DIPOLE IS BASED ON
      THE FORMULA 468/F
3250 REM THESE ANTENNAS CAN BE C
      UT AND PUT UP AND GENERALLY C
      AN NOT BE IMPROVED UNLESS Y
      OU HAVE BETTER ANTENNA MEASUR
      ING EQUIPMENT THAN NOR
      MAL
3260 REM DR= DIRECTOR
3270 REM DE= DRIVEN ELEMENT
3280 REM RE= REFLECTOR
3290 REM SP= SPREADER
3300 CLS
3310 PRINT@132,"QUAD-----
      1"
3320 PRINT@228,"YAGI-----
      2"
3330 PRINT@324,"DIPOLE-----
      3"
3340 PRINT@420,"MAIN MENU-----
      4"
3350 P$=INKEY$
3360 IFP$="1"THENP=1:GOTO3410
3370 IFP$="2"THENP=2:GOTO3410
3380 IFP$="3"THENP=3:GOTO3410
3390 IFP$="4"THENRETURN
3400 GOTO3350
3410 ONP GOSUB3680,3450,3870
3415 IF A=0 GOTO 3300
3420 INPUTA$
3430 GOTO3300
3440 'YAGI-----
      --
3450 CLS:PRINT@12,"YAGI":PRINT
3460 INPUT"FREQUENCY IN MHZ";A
3470 IFA=0THEN RETURN
3480 B=473/A
3490 M=(492/A)*.3
3500 R=495/A
3510 D=458/A
3520 PRINT:PRINT"DR";:F=D:GOSUB3
      600
3530 PRINT:PRINT"DR TO DE";:F=M:
      GOSUB3600
3540 PRINT:PRINT"DE";:F=B:GOSUB3
      600
3550 PRINT:PRINT"DE/2";:F=B/2:GO
      SUB3600
3560 PRINT:PRINT"DE TO RE";:F=M:
      GOSUB3600
3570 PRINT:PRINT"RE";:F=R:GOSUB3
      600
3580 RETURN
3590 'PRINT RESULTS-----

```

HAM RADIO PROGRAMS

MORSE - This program allows a key to be pressed and then sounds the Morse equivalent or let the computer send random characters.

DX - Type in a prefix for a foreign country and have the country displayed.

ANTENNA - An antenna design program that calculates the dimensions for a wide spaced Yagi antenna of up to 4 elements.

Order HR-1 (3 programs) \$11.95

MORSE TERMINAL

When used with an interface this converts your color computer into a Morse Terminal. To transmit just type the Morse characters and the computer keys your transmitter. In the receive mode the computer decodes and displays the Morse characters on the screen. Instructions are included for building an interface with off the shelf parts. HR-2 \$12.95

STATION LOG

Keep a record of your contacts. Just enter the information as it is requested. Items that are the same such as date, frequency, and type of emission need only be entered once and changed as needed. Save and load records to tape or disk. Add to the log and quickly find stations. Print the log to a printer. HR-3 \$9.95

THERMOMETER

Now your computer can give you the temperature in both Fahrenheit and Centigrade. Assembly plugs into a joystick port and consists of a thermistor on a 10' cable for the single unit and a second thermistor on a 20' flat cable for the dual unit. The dual unit can be used to measure inside and outside temperature. CC-THERM \$12.95, CC-THERM 2 \$19.95.

MEMORY SAVER 2

A battery backup for all color computers. Leave programs in your computer and the Memory Saver will preserve them in case of a power failure. A real time saver for cassette systems. \$39.95

HAM RTTY TERMINAL

Uses the cassette port. Requires simple interface to connect cassette audio into the Mic Jack and receiver audio into the cassette port. Interface instructions are included. 60 WPM Baudot. \$6.95.

See Dynamic Color News on tape or disk index for additional support programs.

All programs are color computer 3 compatible unless indicated and are on tape or disk. Please specify tape or disk software.

Checks, VISA or MC, Add \$3 shipping.

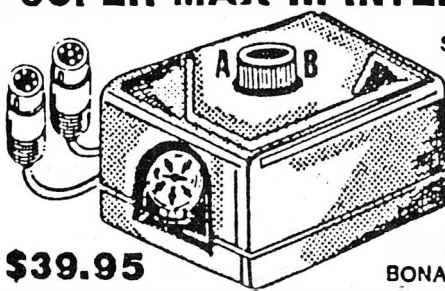
**DYNAMIC ELECTRONICS
BOX 896 (205) 773-2758
HARTSELLE, AL 35640**

```

3600 G=INT(F)
3610 H=(F-G)*12
3620 J=INT(H)
3630 K=(H-J)*16
3640 L=INT(K)
3650 PRINTG"FT"J"AND"L"/16 INCH"
3660 RETURN
3670 'QUAD-----
-
3680 CLS:PRINT@44,"QUAD":PRINT
3690 INPUT"FREQUENCY IN MHZ";A
3700 IFA=0 THEN RETURN
3710 B=1005/A
3720 M=(492/A)*.3
3730 R=1030/A
3740 PRINT:PRINT"DE";:F=B:GOSUB3
600
3750 PRINT:PRINT"DE TO RE";:F=M:
GOSUB3600
3760 PRINT:PRINT"RE";:F=R:GOSUB3
600
3770 U=B/8
3780 S=M/2
3790 T=SQR((U*U)+(S*S))
3800 PRINT:PRINT"DR SP";:F=T:GOS
UB3590
3810 U=R/8
3820 S=M/2
3830 T=SQR((U*U)+(S*S))
3840 PRINT:PRINT"RE SP";:F=T:GOS
UB3590
3850 RETURN
3860 'DIPOLE-----
-
3870 CLS:PRINT@44,"DIPOLE":PRINT
3880 INPUT"FREQUENCY IN MHZ";A
3890 IFA=0THEN RETURN
3900 B=468/A
3910 PRINT:PRINT"L=";:F=B:GOSUB3
600
3920 PRINT:PRINT"L/2=";:F=B/2:GO
SUB3600
3930 RETURN
3940 PRINT@38,"SOLVE FOR < Z >"
3950 PRINT:INPUT"< R >= (OHMS)="
;AA
3960 PRINT:INPUT"< X >= (OHMS)="
;AB
3970 PRINT:PRINT"SQ RT (("AA"OHM
S)SQ+("AB"OHMS)SQ)="
3980 PRINT:PRINTSQR((AA*AA)+(AB*
AB))"OHMS"
3990 A$=INKEY$:IFAS=""GOTO3990
4000 RETURN
4010 PRINT@38,"SOLVE FOR < X OR
R >"
4020 PRINT:INPUT"< Z >= (OHMS)="
;AA
4030 PRINT:INPUT"< X OR R >= (OH
MS)=";AB
4040 IFAA<AB THEN4090
4050 PRINT:PRINT"SQ RT (("AA"OHM
S)SQ-("AB"OHMS)SQ)="
4060 PRINT:PRINTSQR((AA*AA)-(AB*
AB))"OHMS"
4070 A$=INKEY$:IFAS=""GOTO4070
4080 RETURN
4090 PRINT:PRINT"Z MUST BE LARGE
R THEN X OR R
4199 GOTO4070
4110 END
    
```

GREAT COCO III STUFF

SUPER MAX III INTERFACE



Switch between Color Max III and ???

Use EXISTING SOFTWARE* or write your own! Includes (\$24.95) HI-RES JOYSTICK utility software BONANZA for FREE!

\$39.95

*Compatible with POPULAR CoCo III graphics software programs that use HARDWARE JOYSTICK interfaces! Bring your CoCo III to the MAX!



THE NEWSPAPER

Compose your own "CoCo Newspaper" with BANNER HEADLINES and six articles using a SOPHISTICATED graphics editor with importing of PICTURES, FONTS & FILL patterns from disk. 22 Fonts & 50 Pictures! Over 140K of code! CoCo III DISK

\$49.95

COLORMAX DELUXE - BETTER THAN COCO MAX III!

It's here! The CoCoIII BREAKTHROUGH PRODUCT everyone was waiting for! 320x200 graphics, pull down menus, icons the choice of 16 colors from the CoCo III's 64 color palette plus RGB support! 11 fonts are included for hundreds of lettering styles and painting is a breeze with 16 colors and 32 editable patterns!! Color Max Deluxe requires a 512K CoCo III and Hi-Res Joystick interface. (Specify printer!) \$69.95, Hi-Res Interface \$14.95, Color Max Deluxe Editor create and modify fonts for use with Color Max Deluxe \$29.95, Font Disk#1 \$19.95

→ SPECIAL BONUS - BUY ABOVE 4 for only \$99.95 !!! (SAVE \$35) ←

TW-80 - 80 COLUMNS FOR TW-64 ON COCO III NEW LOW PRICES!!!

It's finally here! An 80 column version of Telewriter-64 for the CoCo III with TELEPATCH features plus much, much more! Includes PRINT SPOOLER & (2) ultra-fast RAM DISKS for 512K users, plus changeable CHARACTER FONTS & a setup CONFIG program. Req. TW-64 DISK & 128K CoCo III \$24.95 / SPECIAL BONUS COMBO - TW-64 & TW-80 \$79.95

SUPER TALK 512 - DIGITAL VOICE FOR COCO III

Turn your 512K CoCoIII into a Digital Voice Recorder! Not synthesized speech, but 100% reproduction of your own voice! Create BIG MESSAGES, up to 32 blocks of 16K each. Req. 512K CoCoIII DISK. From Dr.Prebler \$39.95

512K UPGRADE (\$49.95*) LOWEST PRICES OS9 Lev.II Ramdisk Driver \$29.95

Easy installation with a superior design for a reliable upgrade. (*\$49.95 when purchased with our 512K RSDOS RAMDISK for \$24.95 and our OS9 Lev.II RAMDISK for \$29.95). Or \$79.95 with either RAMDISK program! PLUS, FREE 512K RAM sticker with purchase! 512K upgrade without RAM chips \$29.95. Cheapest prices in Rainbow, period!!!

HI-RES JOYSTICK UTILITY SOFTWARE BONANZA!

New useful programs for the Tandy Hi-Res Joystick Interface! Get FULL 640x640 mouse & joystick resolution from BASIC or run CoCoMaxII on the CoCoIII w/o the CoCoMax cartridge \$24.95 w/Hi-Res Interface \$34.95

RGB PATCH - NO MORE BLACK & WHITE DOTS ...

Did you buy an expensive RGB monitor (CM-8) just so that you could see your Hi-Res artifacting CoCo 2 games in BLACK & WHITE ??? RGB PATCH converts most games to display in COLOR on an RGB monitor. 128K DISK \$29.95

WARP FIGHTER 3-D BY STEVE BJORK!

The BEST CoCo III game of 1988 has arrived! A CoCo III Space Fighter simulation with "3-D GLASSES" by the #1 CoCo programmer of all time - Mr. Steve Bjork!!! CoCo III Disk \$39.95

MAGNAVOX 8515 (\$299.95*) LOWEST PRICES Sharper & Brighter than Tandy CM-8!

Do NOT be FOOLED! The CM-8 has a dot-pitch of .52mm & will not work with any other computer or VCR! The '8515' has a SHARP .42mm dot-pitch, will work with IBM PCs/Tandy 1000 and its COLOR COMPOSITE input displays PHOENIX artifact colors unlike the CM-8! *\$299.95 when purchased with a \$24.95 CoCoIII cable - Add \$14 shipping.

- CoCo III 512K RAM sticker \$4.99
- Level II Quick Ref Guide \$4.99
- Level II BasicOS binder ..\$9.95
- 300 CoCoIII POKES\$19.95
- CoCoIII MultiPak PAL chip ..\$19.95
- Guide to CoCoIII Graphics ..\$21.95
- Better CoCoIII Graphics \$24.95
- CoCo III Unraveled\$29.95
- CoCo III Service Manual \$39.95

PASTELIFE 512 Format & Backup up to 4 single- /double-sided, 35/40 trk disks in 1 PASS! Even OS9 Lev.III! \$19.95
BIG BEPPER - 437,888 byte spooler for a 512K CoCoIII! Print up to 200 text pages while using your CoCo! \$19.95



OS-9 Level II Font Editor \$29.95 FORMIX - Lowest price! \$18.95

All orders plus \$3 S/H (Foreign add \$5) - NYS Residents add Sales Tax

SPECTRUM PROJECTS

PO BOX 264 HOWARD BEACH NY 11414
See our other ads on pages 25 & 27



PRODUCT REVIEWS

This section is open to all producers and dealers of color computer products. We will review your product free of charge and write an editorial on the product. We do not use a rating system but will explain what the product does and what can be expected from it.

WALL STREET (vers. 1.1)

This is a stock market simulation game for up to 8 players. Each player starts with \$1000 and has a chance to lose it all or make millions. The program asks for a winning amount from \$2,000 to \$999,999,999. The person who reaches the winning amount first is the winner. Names for the players are entered and then the computer gives each player the option of selling stock.

After selling stock, it is your turn to move. You will be given a stock name and a dollar dividend. The stock indicator will move up or down. You will be asked to buy as many shares as you can afford or attend a stockholder's meeting. It is good to attend these meetings because you receive stock bonuses for each share you own.

Money can be made by selling the stocks when the price is high. Of course buying low and selling high is the best policy when dealing with the stock market. When you land on the beginning square a fee of \$100 is charged. There is a broker fee square where you are charged \$10 for each share you own.

The game is very entertaining and gives players a chance to compete against each other. For more information contact: Drayon Software, P. O. Box 2516, Renton, WA 98056.

ATTENTION DEALERS

Send us your new Product releases for a free listing in our NEW PRODUCTS section.

We also need your products for a free product review.

OPERATING HINT

You can print your disk directory to a printer by POKE 111,254:DIR <ENTER>

MEMORY MANAGER for the Color Computer 2

Did you know that the 64K Color Computer 2 and earlier computers have an extra 32K that is generally not used? Our Memory Manager allows basic or machine language programs to be run in either 32K bank. Banks are exchanged with an EXEC command. Also the second bank can be used as a ramdisk to store programs. This makes cassette operation faster than a disk. A third option configures the computer for the all ram mode allowing data or programs to be stored in the upper memory. The Memory Manager software is available on either cassette or disk and costs only \$18.95 +\$2 ship.

DYNAMIC ELECTRONICS Inc.
Box 896 (205) 773-2758
Hartselle, AL 35640

Question & Answers

These are letter that have been written to us. If you have not written or if you have a question then we would like to hear from you. I can usually be reached in the evenings if you would like to call - Bill.

The following letter is from a nonsubscriber who differs with us on OS-9.

Dear Mr. Chapple,

I'm not a subscriber of DYNAMIC COLOR NEWS, but I would like to share with you my concern over the OS-9 article in your February, 1988 issue. As an OS-9 enthusiasts, I'm glad to see you begin to cover this powerful operating system. However, I am somewhat distressed by parts of the article that begins on page 18.

In the second paragraph, you state that "Multi-tasking can be done from basic or assembly language but instructions have to be written." The implication being that individual programs must include some special code in order for multi-tasking to work. In fact, multi-tasking is handled by the operating system and rarely is a concern for typical applications.

ANSWER: You quoted me correctly but you jumped to a different subject. I was talking about basic or assembly language and not the OS-9 operating system. To do multitasking from basic or machine language requires instructions. These instructions are built into the OS-9 operating system. I believe we agree on this point.

The fourth paragraph makes no sense to me. I infer from it that you do not fully comprehend OS-9 and/or you have not explored it much. The first sentence of that paragraph reads "one major disadvantage of OS-9 is that it is not compatible with Microsoft basic. "How can an operating system (OS-9) be compatible with a dialect of a programming language (Microsoft BASIC)? Perhaps the confusion is caused by considering Disk Extended Color BASIC to be a real operating system?"

ANSWER: My gripe is that OS-9 has to be formatted differently from Microsoft basic. It will not even recognize DAT or TXT files generated from Microsoft basic. Since Microsoft basic comes with the computer, the operating system should be able to manipulate these files. If you consider IBM compatible computers with MSDOS, Basic is recognized by MSDOS. The MSDOS operating system formats disks that it can use or can be used by Microsoft Basic. Of course BASIC09 overcomes this obstacle. Now with OS-9 level 2 at a

price of \$79.95 including BASIC09 this is not too bad. Level 1 cost \$69.95 which was not of much use except for handling word files. However for another \$99 I could purchase a basic system called BASIC09 with which I could do calculations. I feel that this was unfair.

The second sentence of the fourth paragraph ("This means that calculations can not be performed unless assembly language routines are used.") is not true. If your intent was to say that BASIC is not included with the OS-9 Level One package, you have misrepresented the point. An OS-9 Level One user can purchase Basic09 seperately for \$99. Admittedly, this is a considerable expense for the average CoCo user. However, you can spend \$69 for the OS-9 Level Two package which includes Basic09. The beginning of the third sentence of the fourth paragraph ("Basic09 is supposed to overcome this limitation. . .") sounds very cynical. Although you obviously haven't explored it, you're already convinced that it can't be as good because it's different. If you were to objectively explore Basic09, you would find it to be among th most powerful dialects of BASIC on any microcomputer.

ANSWER: We both agree about the excessive cost of level 1 OS-9 and BASIC09. However level 2 OS-9 is a good buy. BASIC09 is much faster than Microsoft Basic and I agree that with OS-9 this makes a very good operating system.

The overall tone of this letter may appear harsh, but consider the reason I am writing it. As founder and past president of a CoCo club, I have seen the enthusiasm of CoCo users towards OS-9 dampened by overly harsh judgements for more than four years. Indeed, OS-9 is complex, powerful, and somewhat intimidating. However the same can be said of 6809 assembly language, but your magazine covers that subject quite well.

I'm not trying to dampen your enthusiasm towards OS-9. I'd just like to see fair treatment of it in your articles. Perhaps you would consider consulting members of the OS-9 Forum on CompuServe. They are quite a helpful bunch. I wish you continued sucess with your publication.

Sincerely, Robert J. Sullivan, Jr

Robert I tried to answer each of your questions. I appreciate your writing and expressing your views on OS-9. We now have an OS-9 enthusiast writing this column. Thanks for your well wishes and interest. - Bill

Dear Sir,

I am sorry to hear that "American Protectionism" has also taken over the computer field, and again forced up prices (per your April editorial). So like most consumers I'll wait until the prices of chips and other hardware lower back to normal.

I enjoy the explanations of Basic and OS-9 better in DCN than RAINBOW. They are more down to the layman than the programmer. Keep up the good work!

Your magazine has the best deals I've seen on Public Domain programs. So little by little I can increase my library. What programs that do not want to work with the COCO 3 are easily modified to work. But the ML is still a headache. But I can still get "Cadillac" programs for "Volkswagen" prices. Thanks.

Best Regards, Joseph D. Meaux JR.

Joseph thanks for your letter. I am glad you like our method of presenting material especially the OS-9 section. Norm Matice is now writing this section. Memory chips are still high and we are hoping they will come down in a few months. Thanks for your support. - Bill

Dear Bill,

Since I am currently "snow bound" with 6" of wet fluffy snow on this April morn, I've decided to catch up on correspondence.

I appreciate your response and interest in my last query re: DC Power for COCO's. Look forward to solution. That's one reason I'm writing and not word processing --power keeps dropping off-line which as you know raised the heck with computers, motors etc.

Enclosed check for \$22 for 1 CC-Therm 2. This brings me to inquire about the possibility of developing a wind speed & direction package for use with the COCO's. Some where in my archives I have an article on making an anemometer using a couple Ping-pong balls cut in half for wind cups-- and some kind of copper strip/rotator to make the rotator. This was wired to a calculator (hand type). If you think this merits time & effort I'll research the article and forward a copy.

I'm enjoying the articles on OS-9 and wonder if it is possible to do anything with the OS-9 contained on the DESKMATE DISK. I've tried unsuccessfully to get the computer to go to upper/lower case after exiting the main program but only get Error #215 or #216. Only command that works with uppercase is FORMAT.

Hope all is well with you and Dean and the rest of your family.

Bill Morrisseau

ANSWER: Bill it is good to hear from you again. We do not have DESKMATE so can not comment on that. If someone can answer Bill's question please write to us. I would like to see the article on the anemometer. Maybe we could come up with a version for the color computers. I have thought about your power problem and still think a DC to AC inverter would be your best bet. I have a 100 watt inverter that will run my computer and television. I have not tried it with the disk drive. The computer can be made to run from a battery but a negative voltage is required for some applications such as the RS-232 port. This is generated from the AC power. Thanks for your letter and comments.

Dear Bill,

Enjoy your publication each month. You are very helpful and lots of good information is given each month.

In answer to letter from Bill Wise, N6EHI, in your April issue of Dynamic Color News, I may be of some help. He is interested in sending the information received on Packet, RTTY or other modes of communication to the printer.

First, you must have two serial ports, one for the printer and one for the TNC Modem. Use the serial port on the computer for the printer, and he will need a Multi-Pak Interface and a Deluxe RS-232 Program Pak; to create another serial port. This will be used for the TNC. ALSO!!, you must tie pins 6,8, and 20 on the RS-232 Pak together. These are your data pins. This is the arrangement if using a disk drive. The RS-232 pak will be in slot 3 of Multi-pak interface, and disk pak in slot 4. If you are using a tape drive you will not need a Multi-Pak interface, just plug your RS-2232 Pak into your computer.

With the proper software, this set-up will send information to the printer for him and will also have another serial port to operate his TNC or other modems. I am sure his Mickey-term terminal program provides printing but if not the "Auto-term" program by PXE Computing, 11 Vicksburg Lane, Richardson, TX 75080 will work. Ph 214/699-7273.

Best of luck with your publication and hope this has been of some help to Bill.

Respectfully yours S.R. Duncan

ANSWER: S.R. thanks for your letter and assistance. It makes it a lot easier if someone has worked out the details. Thanks for taking time to provide assistance.
Bill

**BULLETIN BOARDS
COMPUTER CLUBS
& PEN PALS**

If you want a free listing send us the information. These listings will be kept current.

**BULLETIN
BOARDS**

BBS The Dungeon BBS of Newport NC Supporting IBM, Commodore, CoCo, Apple, Atari, and Tandy Computers. On-Line Special Interest Groups, Forms, Multi Message Bases, Upload and Download areas. On-line shopping and Business services. 300/1200 baud 24 hours. 919-726-9737

Sysop: Chuck Katsekas
Address: 410 Scott Dr.
Newport, NC 28570
Telephone (voice) 919-726-0018

Dungeon Bulletin Board System
North Carolina 919-726-9737

Chuck Katsekas
410 Scott Dr
Newport, NC 28570

The CoCo Nut Tree 300/1200 Baud,
24 hrs, 7 days a week, no parity,
7 data bits, 1 stop bit,
echo off. (216) 792-9745

FAT NEWSLETTER 300/1200 Baud
FAT 1010
Concord Av
Piqua, OH 45356
(513) 778-9624

**COLOR COMPUTER
CLUBS**

Jan Colucci Editor C'Crier
The Color Computer Club
PO Box 478
Canfield, OH 44406

NEW PRODUCTS

This section is available free for producers and dealers of color computer products. These products have not been reviewed by us but are included for our reader's information. We did not receive any new product information this month.

RENEWAL TIME?

IF 5/88 is beside your name on your address label then your subscription has expired.

**ADVERTISER'S
INDEX**

We would appreciate it if you would let these advertisers know that you saw their advertisement in Dynamic Color News.

The Wizard's Castle	6
T & D Subscription Software	8
Seibyte Software	10
Ark Royal Games	11
Dynamic Electronics Inc .	2,16
	17,18,19,33,42,45
Digital Innovations	22
Spectrum Projects	27,43
OPC Printing	36

DYNAMIC COLOR NEWS
CUMULATIVE INDEX

Editor's Comments, Questions and Answers, and Operating Hints are included in all issues. Product reviews are in issues since #17. Numbers in Parentheses indicate the part of a series.

#1 Feb 84
 Basic Programming
 Programming Theory
 Multiprogram Manager
 MPM Program Listing
 Machine Lang. Prog.

#2 Mar 84
 Basic Programming
 Memory Expansion
 Machine Lang. Prog.

#3 Apr 84
 ASCII Part 1
 Basic Programming
 Machine Lang. Prog.

#4 May 84
 ASCII Part 2
 ML Programming-
 Interrupts
 Installing an
 Interrupt switch
 Utility Program

#5 June/July 84
 Powerful Remarks
 (Remarks for data)
 ASCII Part 3
 Uninterrupted Power
 Machine Lang. Prog.

#6 Aug 84
 Powerful Remarks (2)
 Data in Remarks
 Check Book Program
 Word Processor
 Machine Lang. Prog.

#7 Sept 84
 Machine Lang. Prog.
 Writing Position
 Independent Code
 Powerful Remarks (3)

#8 Oct 84
 Basic Programming
 (Data Handling Tech)
 Machine Lang. Prog.
 (Memory Searching)

#9 Nov 84
 Computer Sound (1)
 Basic Programming
 (Sorting)
 Ball Team Sort Pgm

#10 Dec 84
 Random Numbers
 Computer Sound (2)
 Sound Learning Pgm
 Sound Demo Program

#11 Jan 85
 Random Numbers (2)
 Card Shuffling
 Computer Sounds (3)
 Machine Language Subs
 Sound Program
 Discussion

#12 Feb 85
 Large Memory Pgms (1)
 Computer Graphics (1)
 Video Reverser
 (hardware)

#13 Mar 85
 Large Memory Pgms (2)
 Computer Graphics (2)
 Writing Programs (1)

#14 Apr 85
 Large Memory Pgms (3)
 Computer Graphics (3)
 Graphics Demo Program
 Writing Programs (2)
 Print Demo Pgm

#15 May 85
 Writing Programs (3)
 Gas Mileage Program
 Large Memory Pgms (4)
 Data Move Program
 Computer Graphics (4)
 Graphics Demo Program

#16 June 85
 Writing Programs (4)
 Grade Book Program
 Computer Graphics (5)
 Character Gen. Pgm
 Large Memory Pgms (5)
 Address File Program

#17 July 85
 Large Memory Pgms (6)
 64K RAM Program
 Writing Programs (5)
 Alarm Clock Program
 Computer Graphics (6)
 Character Gen. Pgm.
 CoCo Heat Problem

#18 Aug 85
 Writing Programs (6)
 Address File Program
 Large Memory Pgms (7)
 Study Program
 Computer Graphics (7)
 Line Demo Program

#19 Sept 85
 Writing Programs (7)
 Fast Food Program
 Computer Graphics (8)
 Bar Graph Program
 Vector Correction Pgm
 Large Memory Pgms (8)

#20 Oct 85
 Writing Programs (8)
 Word Processor Pgm
 Bar Graph with
 Character Generator
 Second Port
 Page -1 for 32K + MEM
 Large Memory Pgms (9)

#21 Nov/Dec 85
 Writing Programs (9)
 Check Book Program
 Computer Graphics(10)
 Circle Demo PGM
 Recipe Program
 RAM Disk Program
 Electric Cost Program

#22 Jan 86
 Writing Programs (10)
 Inventory Program
 Computer Graphics(11)
 ARC & Circle Demo PGM
 Large Memory Pgms(11)
 Ship War (Game)

#23 Feb 86
 Writing Programs (11)
 File DEMO Program
 Basic Basic (1)
 Computer Graphics(12)
 Draw Demo Program
 Interfacing Comp. (1)
 Bouncing Ball (Game)

#24 Mar 86
 Interfacing Comp. (2)
 Electronic Billboard
 Writing Programs (12)
 Basic Basic (2)
 Computer Graphics(13)
 Draw Program
 (Scrolling)
 Large Memory Pgms(12)
 Ramdisk Subroutines

#25 Apr 86
 Interfacing Comp. (3)
 Writing Programs (13)
 Basic Basic (3)
 Tanks (Game)
 Large Memory Pgms(13)
 Upper Memory Program
 Computer Graphics(14)
 Graphics Programming
 (GET & PUT)

#26 May 86
 Writing Programs (14)
 ML Programming (1)
 Interfacing Comp. (3)
 Roulette (Game)
 Page -1 Pgm Dev.
 Basic Program Restore
 Large Memory Pgms (F)
 Computer Graphics(14)
 Graphics Draw Program

#27 June 86
 ML Programming (2)
 ML Program (Addition)
 Page -1
 Mem. Peek & Poke Pgm
 Writing Programs (15)
 Inventory Program
 Interfacing Comp. (5)
 Chords (Music Pgm)
 Computer Graphics(16)
 Graphics Draw Program

#28 July 86
 ML Programming (3)
 ML Add with Carry
 Graphics Zoom Program
 Writing Programs (16)
 File Program
 Interfacing Comp. (6)
 ASCII Demo Program
 Astro Dodge Game
 Computer Graphics (F)

#29 Aug 86
 ML Programming (4)
 ML Subtract Program
 Interfacing Comp. (7)
 Organize VCR Tapes
 Ham Radio & Comp. (1)
 Morse Code Program
 Disk Disassembler
 Basic Prog. (17)

#30 Sept 86
 ML Programming (5)
 ML Data Move Program
 Disk File Utility
 Basic Programming
 File Program
 Ham Radio & Comp. (2)
 Antenna Design Pgm
 Interfacing Comp. (8)
 ML Output Subroutines

#31 Oct 86
 Money Chase (Game)
 ML Programming (8)
 Multiple Choice Test
 Basic Programming
 Address File Pgm (1)
 Introduction to OS-9
 Interfacing Comp. (9)
 Ham Radio & Comp. (3)

#32 Nov 86
 Star Constellations
 ML Programming (7)
 CoCo 3 (1)
 Basic Programming
 Address File (2)
 Duelling Cannons
 Ham Radio & Comp. (4)
 DX Program (Ham)
 Interfacing Comp.(10)
 Hardware Interface

#33 Dec 86
 ML Programming (8)
 CoCo 3 (2)
 OS-9
 Lucky Money (Game)
 Interfacing Comp.(11)
 DYTERM Terminal Pgm
 Basic Programming
 (Sorting)
 Ham Radio & Comp. (5)

#34 Jan 87
 Cassette Control Sw.
 ML Programming (9)
 Jungle Adventure
 Interfacing Comp.(12)
 Ham Radio & Comp. (6)
 Morse Code Keyer Pgm
 CoCo 3 (3)
 Basic Programming
 Address File & Sort

#35 Feb 87
 ML Programming (10)
 Interfacing Computers
 (Joystick Voltmeter)
 Ham Radio & Comp. (7)
 Scrolling Around
 Basic Programming
 Address File

#36 Mar 87
 OWARE (Game)
 Joystick Ohmmeter
 EPROMS (1)
 ML Programming (11)
 CoCo 3 (Lowercase
 Char & Rev.Video)
 Ham Radio & Comp. (8)
 Basic Programming
 Invoice Program

#37 Apr 87
 Diver (Game)
 EPROMS (2)
 ML Programming (12)
 Using Joystick Port
 for Measuring Temp.
 Ham Radio & Comp. (9)
 CoCo 3 (Error Trap)
 Basic Programming

#38 May 87
 Joystick Digital
 Thermometer
 Accounts Payable
 (Business Pgm)
 EPROMS (3)
 ML Programming (13)
 CoCo 3 Memory Manager
 Ham Radio & Comp.(10)
 Basic Programming
 (Fast Sorting)

#39 June/July 87
 Geneology Program
 ML Programming (14)
 Measuring Light with
 Joystick Ports
 EPROMS (4)
 CoCo 3 Graphics Demo
 Ham Radio & Comp.(11)
 Calendar Program
 Morse Terminal

#40 Aug 87
 Job Costing Program
 ML Programming (15)
 Basic Programming
 Ham Radio & Comp.(12)
 Compound Interest Pgm
 CC-3 Hi-Res Graphics
 Save Program
 Dog Race Program

#41 Sep 87
 Astro Dodge Game
 ML Programming (18)
 Reformatting Data (1)
 Meteors Program
 Computer Terminology
 Ham Radio & Comp.(13)
 Relay Interface
 (Hardware Project)

#42 Oct 87
 Taking Control (1)
 (Basic Programming)
 ML Programming (17)
 Disk Cataloger Pgm
 Reformatting Data (2)
 Parachute (Game)
 Ham Radio & comp.(14)
 HAM RTTY Program

#43 Nov 87
 Save the Maiden (G)
 Taking Control (2)
 ML Programming (18)
 Reformatting Data (2)
 Music Program
 HAM Radio & Comp.(15)
 (Packet Radio)

#44 Dec 87
 Kingpede (Game)
 Taking Control (3)
 Printer Utilities
 Ham Radio & Comp.(19)
 Audio Generator Pgm
 Reformatting Data (3)
 Screen Dump Program

#45 Jan 88
 Living Maze (Game)
 ML Programming (20)
 Ham Radio & Comp.(17)
 Frequency Counter Pgm
 Taking Control (4)
 Reformatting Data (6)
 FANTASY2 Music Pgm

#46 Feb 88
 Using ROM Routines
 Taking Control (5)
 OS-9 (New Series)
 BARRACAT (Card Game)
 Ham Radio & Comp.(18)
 Improved Ham Log Pgm

#47 Mar 88
 Using ROM Rout. (2)
 Taking Control (6)
 OS-9 & Basic 09
 Coast-Coast (Game)
 Logic (Ed. Game)
 Forth Prog. Lang.
 ML Loader Pgm.
 Ham Radio & Comp.(18)
 WEFAX -Weather Pgm.

#48 Apr 88
 Marriage of ML & Bas.
 Area Code (Program)
 OS-9 & Basic 09
 Taking Control (7)
 (Basic Programming)
 Forth Programming (2)
 Fast Dir (Disk Pgm)
 Ham Radio & Computers
 Tuning Meter Pgm
 Atlanta (Picture)

#49 May 88
 Advance (Game)
 Marriage of ML & Bas.
 Superspell (Ed. Pgm.)
 OS-9 & Basic 09
 Sink the Ships (Game)
 Basketball Math (PGM)
 Taking Control (8)
 Ham Radio & Computers
 Ham Math Program

CLASSIFIED ADS

1. 10 cents a word, \$3 minimum.
2. Name, Address, & Telephone listed free.
3. Send payment with ad.
4. Closing date 1st of the preceeding month. Ex. Nov ad closing is Oct. 1.
5. No X-Rated ads.

PREMIUM QUALITY DISKS. You don't have to pay a lot for **QUALITY** disks. Our disks are boxed in tens complete with labels, sleeves, and write protect tabs and work on COCO's and MSDOS computers. These are double sided double density disks and will be replaced if defective. DSK-2 \$5.95 /box. Add \$1.00 S/H. Dynamic Electronics, Box 896, Hartselle, AL 35640. (205) 773-2758

BULLETIN BOARDS COMPUTER CLUBS & PEN PALS

If you want a free listing send us the information. These listings will be kept current.

DYNAMIC ELECTRONICS INC.
P. O. Box 896 (205) 773-2758
Hartselle, AL 35640

BACK ISSUES

Back issues of Dynamic Color News are available for \$1.95 each, 3 for \$5 or 12 for \$18 pp.

Foreigners other than Canada add \$2 for Air Mail postage.

DISPLAY ADS

(Rate sheet 3 - March 1988)
Closing 1st of preceeding month.
Example: Ad for March issue should be received by Feb. 1.

Pages	1X	3X	6X	12X
1/4	20	18	16	15
1/2	30	27	25	23
1	40	37	35	33
2	70	65	60	55

We can do titles for your ad in Red, Blue, Green, or Brown. No all one color ads will be accepted. For color ads send artwork for each color and add 30% per color. Example: One page black and red for 3 times costs \$37 + 11.20 = \$48.20 each month for the three monthss.

Artwork must be camera ready and can be enlarged or reduced at no extra cost. Rates are per page or fraction thereof. We can set up your ad for a reasonable price. Enclose payment with ad copy. Contracts are available. Call or write for a contract form. No X-Rated ads.

**BULKRATE
U.S. POSTAGE
PAID
HARTSELLE, AL
35640
PERMIT NO. 21**