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Number 1



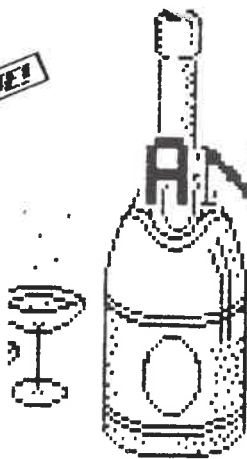
THREE YEARS OF...



COMPUTING

THE BI-MONTHLY MAGAZINE FOR COLOR COMPUTER USERS

GAMES ISSUE!



ANNIVERSARY ISSUE!

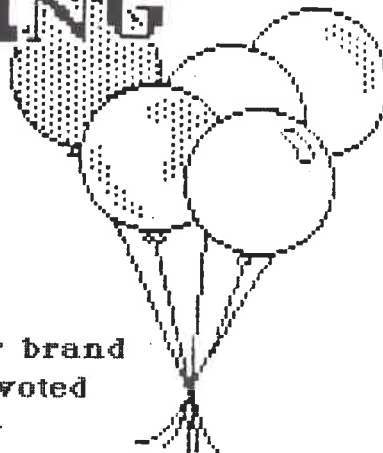
HAPPY
ANNIVERSARY
TRS-80
COMPUTING

A party bag full of all kinds of programs, articles, hints and tips, in celebration of our third year printing!

- An exciting anniversary music/graphics program
- All about the algebra operating system in the CoCo
- Our annual CoCo Crossword Puzzle

Also...

The start of our brand **NEW** column devoted to OS-9 Level II.



TRS-80 COMPUTING

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TRS-80 COMPUTING
SINCE 1987

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CORPORATION.

NOTES... "TC" STANDS FOR TRS-80 COMPUTING.
WE WILL HAVE AN EXPANDED
PRODUCT REVIEWS SECTION IN AUGUST.
THE SPECIALS SECTION WILL RETURN
IN THE AUGUST ISSUE.

LASER LINES Graphics Program

EOB required

This month's graphics program is called Laser Lines. Making a decision on what to name the program wasn't easy because it is the type of graphics program that consists of a bunch of lines that creates a pattern when finished drawing. The computer uses the PMODE 4 graphics mode and the left side of the screen to create the image. The listing may be short, but I think you'll be pleased with the results.

THE LISTING: LASERLNS

```
1 ' *** Laser Lines ***
2 ' COPYRIGHT (C) 1990
3 ' BY TRS-80 COMPUTING
5 PMODE 4,1:SCREEN 1,1:PCLS
12 LINE (192,0)-(256,192),PSET,
BF
13 LINE (0,183)-(256,192),PSET,
```

BF

14 FOR T=1 TO 192 STEP 12

16 FOR W=1 TO 192 STEP 12

18 LINE (0,T)-(192,W),PSET

22 NEXT W,T

26 GOTO 26

END OF PROGRAM

Press <BREAK> to exit the program.

Coming soon...

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Editor's Notes...

The month of June marks the birthday of TRS-80 Computing. Starting off in June of 1987, we came a long way from what was a childish looking \$.60 newsletter with poor layout, cutoff pages, ads put in for free, and the letters of the front cover logo cut out from a newspaper. Just starting to get used to my new printer, I thought I did a pretty good job.

"As we begin our fourth year publishing, we will have many new things in store for the magazine", is what's quoted on our 1990 Editorial Calender. As you probably already noticed, the front cover of this month's issue has a new look to it. We printed a portion of it out on a laser printer. It does look pretty fancy, and we hope to have our future issues look that way also. We also have a different logo which replaces the one we had been using for the past year or so.

We have just began a bi-monthly column (each issue) on OS-9 Level II as something new. We've had many inquiries about "too much BASIC" and not enough of the other things available for the CoCo. So we started it off with an article talking about the advantages of OS-9 over BASIC. We are looking for people to contribute to it, so if you're interested, please write to us.

Also, take a look at our Anniversary Special in this issue. We're not going to tell you what it does, but if you look at the clip-art scattered about (front cover, "The Programmer" page) you can kind of get a clue on what its all about.

There is one unfortunate thing that we had to change starting with this issue, and that is the raise of our subscription and cover price rates. The last time we did that was a year ago (June '89). We don't like doing it, but with inflation these days, sometimes we have no choice. Our next scheduled raise is in February of 1991, when the U.S. Postal Service will be boosting up their postage rates next January (at least right now that's the way it looks - if they don't we'll keep our rates the same).

Last, but not least, something big has arrived in the CoCo World: the introduction of the "new CoCo 4" (actually the two new CoCo 4's). They are the Multi Media I (MM/I) from Kenneth Leigh Enterprises and the TC-9 Tomcat from Frank Hogg Laboratories. Both were introduced at the Chicago RAINBOWfest last April, and are pretty fascinating computers! Look for the article telling all about the TC-9 Tomcat in this issue (we will have an article on the Multi-Media I in the August issue).

Next month will be our "anything" issue, where we choose the editorial theme. Right now it looks to be a business issue, but if you would like to see something different, you can let us know in the "comments" section of the Reader's Survey, that also appears in this issue.

Well, happy CoCoing, and I'll talk to you in August!

COMPUTER PEN-PALS

Joe Ahearn

The following people are proud owners of Jandy Color Computers, and would like to have pen-pals to talk about their CoCo and exchange ideas. Please - **NO PARASY!**

NAOMI WEST
944 MOSBY ROAD
MEMPHIS, TN. 38116

JESSICA DIEHM
RD#3 BOX 461-A
LEWISBURG, PA. 17837

RICHARD BUTLER
BOX 304
MT AYR, IA. 50854

If you would like to have your name & address printed in the pen-pals section, send in your name & address, along with a few short sentences telling about your CoCo system, and we will print it in a future issue. As long as we have your CoCo configuration, it will be printed along with your name/address.

Letter to the Editor...

This letter is in response to the editor's review of the MAP Super Disk Filer program in last month's issue.

Dear Editor,

I would like to thank you for doing a review of my MAP Super Disk Filer. Once again, please accept my apologies for forgetting to send the instructions. I feel though that I should make a few clarifications.

First of all, the "label disk" option doesn't add a new file to your disk. (I'm only stating this so you know that if the disk has zero free granules you will not encounter any problems.) What it does is write the disk title on track 17, sector 11. However, if there's something in that granule (eg. if the disk was already labeled, or you have over 64 files), the program will warn you of that.

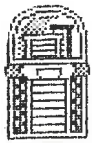
Secondly, the "Print Small List" option prints the whole list, but only file name and extension. This way you can fit 300 file names on a sheet of paper instead of 50 with the "Print Out List" option. Both options have their advantages and disadvantages. With the "Print Small List" option, you can't tell which disk the files are on. On the other hand, the "Print Out List" option uses a lot of paper.

You also mentioned that when you add a new program to a disk, you DON'T have to retype all of the other files' descriptions, you just have to type ERASE at the prompt, and it won't be added. (It tells you that on the screen.)

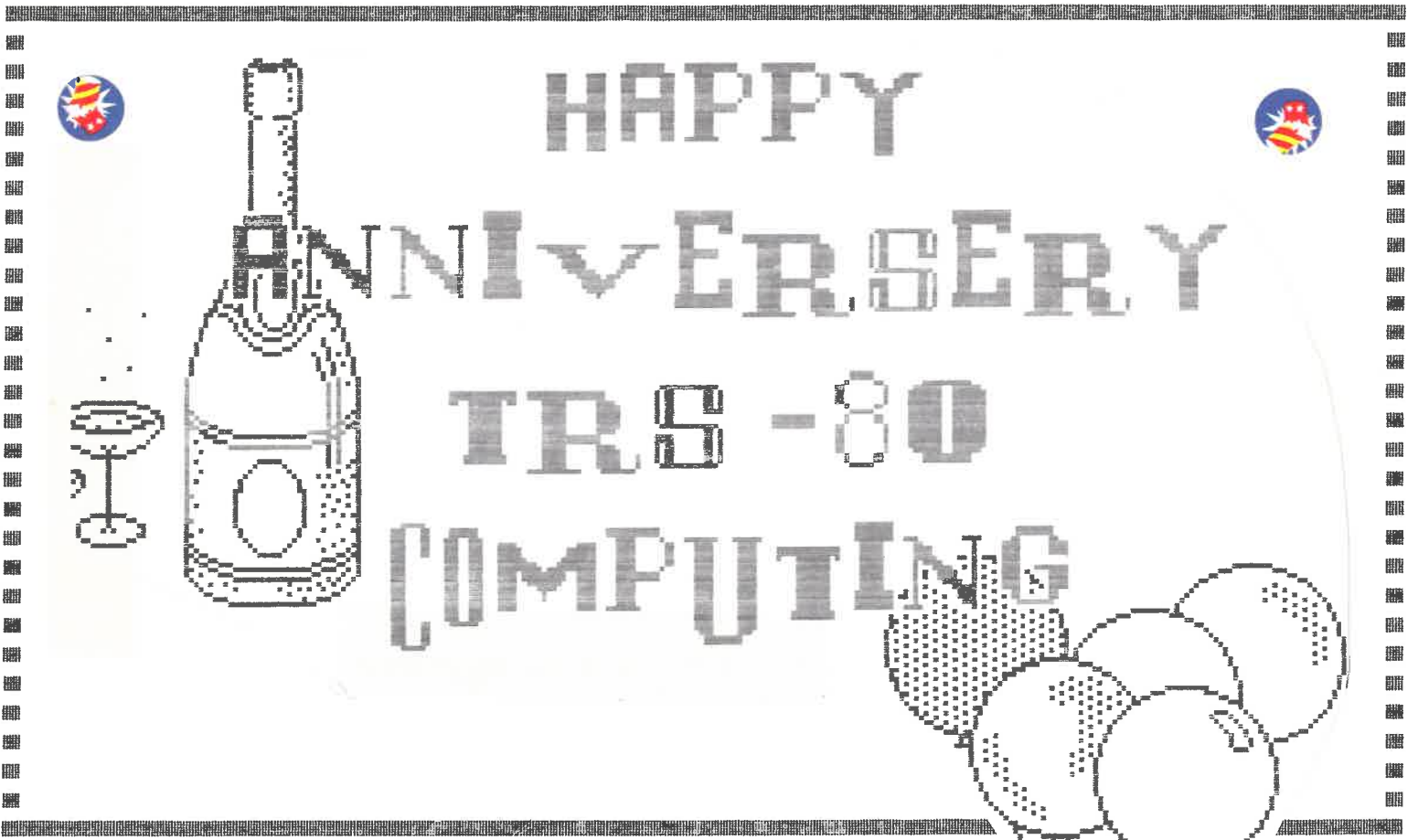
My last point is that the DOCs tell you how to change the program if you want to have certain extensions, or all programs. I did that out of personal preference, but it is very easily changed by the user to suit his or her taste.

I hope this clarifies any misconceptions about the MAP Super Disk Filer. We promise to provide constant support to all our users to ensure customer satisfaction - to clear up any problems and to ensure you get your money's worth out of the WHOLE program.

Anton Peter Milardovic,
President
MAPster CoCo Software



THE PROGRAMMER



| | |
|-----------------------------|----------|
| THE PROGRAMMER | JUNE '90 |
| <u>THIS MONTH</u> | |
| 1. Anniversary Special..... | 6 |
| 2. Balloon Basher..... | 11 |

TRS-80 COMPUTING PRESENTS...

THE



ANNIVERSARY SPECIAL



As you may have noticed, this issue marks our third year of TRS-80 Computing. To celebrate this event, I have written this program which displays an impressive graphics screen. I also have included a machine language song to go along with it. The musical notes for this song is contained within the DATA statements. I chose hexadecimal numbers instead of decimal numbers to cut down the typing. After keying in the listing, save it to tape or disk. Now type RUN. The song will be POKEed into memory and the title screen will be displayed. Have Fun!

- David McNally

THE LISTING: ANNIVRY

```

5 REM *****
10 REM *   OUR THIRD YEAR!   *
15 REM *   BY DAVID MCNALLY  *
20 REM *   (C)1990           *
25 REM *   BY TRS-80 COMPUTING *
30 REM * ALL RIGHTS RESERVED *
35 REM *****
40 CLS:PRINT"READING MUSIC DATA.
.. "
45 FOR I=&H4D00 TO &H51E8
50 READ A$:POKE I,VAL("&H"+A$):N
EXT
55 GOTO 635
60 DATAD,E,F,11,12,14,15,16,18,1
9,1B
65 DATA1C,1D,1F,20,22,23,26,27,2
9,2A,2B
70 DATA2D,2E,30,31,32,34,35,37,3
8,38,39
75 DATA3B,3B,3C,3C,3E,3E,3E,3F,3
F,3F,3F
80 DATA3F,3F,3F,3E,3E,3E,3C,3C,3
B,3B,39
85 DATA38,37,37,35,34,32,31,30,2
E,2E,2D
90 DATA2B,2A,29,27,26,24,23,22,2
0,1F,1F
95 DATA1D,1C,1B,1B,19,19,18,18,1
6,16,15
100 DATA15,15,15,15,15,15,15,15,
15,15,15
105 DATA15,16,16,16,18,18,18,19,
19,1A,1A
110 DATA1B,1B,1B,1C,1C,1E,1F,1F,
175 DATAA,B,D,0,0,2,6F,2,94,2,BB
180 DATA2,E4,3,10,3,3F,3,71,3,A5
,3
185 DATADC,4,17,4,56,4,98,4,DD,5
,28
190 DATA5,76,5,C9,6,21,6,7F,6,E2
,7
195 DATA4A,7,B9,8,2F,8,AC,9,30,9
,BB
200 DATAA,50,A,ED,B,93,C,43,C,FE
,D
205 DATAC4,E,95,F,73,10,5F,11,58
,12,60
210 DATA13,77,14,A0,15,DA,17,26,
18,87,19
215 DATAFC,1B,88,1D,2B,1E,E7,20,
BE,22,B0
220 DATA24,C0,26,EF,29,40,2B,B4,
2E,4D,31
225 DATAE,33,F9,37,10,3A,57,3D,C
F,41,7C
230 DATA45,60,49,81,4D,DF,52,81,
57,69,5C
235 DATA9B,62,1D,16,0,88,86,4C,1
F,8B,86
240 DATA3F,B7,FF,23,1A,50,30,8D,
FE,6A,9F
245 DATAC3,9F,C6,9F,C9,9F,CC,30,
8D,0,80
250 DATA9F,C0,39,9E,C0,A6,80,97,
C2,39,31
255 DATA8D,FF,50,A6,80,EE,A6,DF,
CF,A6,80
260 DATAEE,A6,DF,D1,A6,80,EE,A6,

```

| |
|--------------------------------|
| 64K ECB Coco 2 or Coco 3 |
|--------------------------------|

20, 20, 22
115 DATA22, 22, 22, 22, 23, 23, 23, 23,
23, 23, 23
120 DATA22, 22, 22, 22, 20, 20, 20, 1F,
1F, 1D, 1D
125 DATA1C, 1C, 1B, 19, 19, 18, 16, 15,
15, 14, 12
130 DATA12, 11, F, E, E, D, B, B, A, B, B
135 DATA7, 7, 6, 6, 4, 4, 3, 3, 3, 1, 1
140 DATA1, 1, 1, 1, 0, 0, 0, 0, 0, 1, 1
145 DATA1, 1, 1, 1, 1, 3, 3, 3, 3, 3, 4
150 DATA4, 4, 4, 4, 6, 6, 6, 6, 6, 6, 6
155 DATA6, 7, 7, 7, 7, 7, 7, 7, 6, 6, 6
160 DATA6, 6, 6, 6, 6, 6, 4, 4, 4, 4, 4
165 DATA4, 4, 4, 4, 4, 3, 3, 3, 4, 4, 4
170 DATA4, 4, 4, 6, 6, 6, 7, 7, 7, B, A

DF, D3, A6
265 DATA80, EE, A6, DF, D5, 9F, C0, 39,
10, 8E, 0
270 DATA6A, A6, 9F, 4C, C3, AB, 9F, 4C,
C6, A9, 9F
275 DATA4C, C9, A9, 9F, 4C, CC, B7, FF,
20, DC, C4
280 DATAD3, CF, DD, C4, DC, C7, D3, D1,
DD, C7, DC
285 DATACA, D3, D3, DD, CA, DC, CD, D3,
D5, DD, CD
290 DATA31, A2, 26, 6, A, C2, 27, C, 20,
C7, A6
295 DATA80, 20, 0, 20, 0, 20, 0, 20, C1,
39, 17
300 DATAFF, 75, 8D, 91, 81, 0, 26, 4, 4F
, 1F, 8B
305 DATA39, 8D, 8E, 8D, AB, 20, F0, 60,
30, 20, 2C
310 DATA26, 18, 38, 26, 2C, 30, 18, 3A,
28, 20, 30
315 DATA60, 3E, 2C, 20, 30, 18, 38, 26,
2C, 30, 18
320 DATA30, 20, 26, 2C, 60, 40, 30, 28,
22, 18, 3E
325 DATA2C, 22, 30, 18, 3A, 28, 30, 22,
48, 48, 28
330 DATA22, 30, 30, 48, 2A, 3A, 30, 18,
48, 2A, 3A
335 DATA30, 60, 4A, 44, 22, 2C, 18, 48,
28, 22, 30
340 DATA18, 44, 26, 30, 22, 60, 48, 28,
22, 30, 18
345 DATA44, 26, 20, 30, 18, 40, 22, 30,
22, 60, 3E
350 DATA20, 30, 26, 18, 40, 30, 26, 30,
18, 3E, 2C
355 DATA20, 30, 48, 3A, 28, 30, 22, 30,
3A, 28, 30
360 DATA22, 18, 30, 20, 26, 30, 60, 30,
20, 2C, 26
365 DATA18, 38, 26, 2C, 30, 18, 3A, 28,
20, 30, 60
370 DATA3E, 2C, 20, 30, 18, 38, 26, 2C,
30, 18, 30
375 DATA20, 26, 2C, 60, 40, 30, 28, 22,
18, 3E, 2C
380 DATA22, 30, 18, 3A, 28, 30, 22, 48,
48, 28, 22
385 DATA30, 30, 48, 2A, 3A, 30, 18, 48,
2A, 3A, 30
390 DATA60, 4A, 44, 22, 2C, 18, 48, 28,
22, 30, 18
395 DATA44, 26, 30, 22, 60, 48, 28, 22,
30, 18, 44


```

400 DATA26,20,30,18,40,22,30,22,
60,3E,20
405 DATA30,26,18,40,30,26,30,18,
3E,2C,20
410 DATA30,48,3A,28,30,22,C,3A,3
2,3A,1A
415 DATAC,3E,38,3E,20,C,40,3A,40
,22,C
420 DATA44,3E,44,26,C,48,40,48,2
8,C,4A
425 DATA44,32,2C,18,52,4A,44,26,
18,52,4A
430 DATA44,26,18,52,4A,44,26,18,
52,4A,44
435 DATA26,24,52,4A,44,26,C,52,4
A,44,26
440 DATA18,52,4A,44,26,18,4E,48,
40,1E,18
445 DATA4C,46,3E,1C,48,4E,48,40,
1E,18,4A
450 DATA44,3E,1E,18,4A,44,3E,1E,
18,4A,44
455 DATA3E,1E,18,4A,44,3E,1E,18,
4A,44,3E
460 DATA1E,18,4A,44,3E,1E,18,4A,
44,3E,1E
465 DATA24,48,40,36,28,C,46,3E,3
2,2E,30
470 DATA48,40,22,30,18,48,40,22,
30,18,44
475 DATA3E,38,30,18,44,3E,38,30,
18,44,3E
480 DATA38,30,18,44,3E,38,30,18,
44,3E,38
485 DATA30,18,44,3E,38,30,18,44,
3E,38,30
490 DATA18,40,3A,30,22,18,3E,38,
3E,30,30
495 DATA3A,40,30,22,18,52,4A,40,
22,18,4A
500 DATA44,3A,2C,18,44,3E,3A,2C,
18,3E,38
505 DATA3E,30,30,40,48,3A,30,18,
3E,44,38
510 DATA26,48,3A,30,28,A,30,3A,3
0,28,22
515 DATA18,30,38,26,30,60,30,20,
2C,26,18
520 DATA38,26,2C,30,18,3A,28,20,
30,60,3E
525 DATA2C,20,30,18,38,26,2C,30,
18,30,20
530 DATA26,2C,60,40,30,28,22,18,
3E,2C,22
535 DATA30,18,3A,28,30,22,48,48,
28,22,30
540 DATA30,48,2A,3A,30,18,48,2A,
3A,30,60
545 DATA4A,44,22,2C,18,48,28,22,
30,18,44

```

```

550 DATA26,30,22,60,48,28,22,30,
18,44,26
555 DATA20,30,18,40,22,30,22,60,
3E,20,30
560 DATA26,18,40,30,26,30,18,3E,
2C,20,30
565 DATA48,3A,28,30,22,30,3A,28,
30,22,18
570 DATA30,20,26,30,60,30,20,2C,
26,18,38
575 DATA26,2C,30,18,3A,28,20,30,
60,3E,2C
580 DATA20,30,18,38,26,2C,30,18,
30,20,26
585 DATA2C,60,40,30,28,22,18,3E,
2C,22,30
590 DATA18,3A,28,30,22,48,48,28,
22,30,30
595 DATA48,2A,3A,30,18,48,2A,3A,
30,60,4A
600 DATA44,22,2C,18,48,28,22,30,
18,44,26
605 DATA30,22,60,48,28,22,30,18,
44,26,20
610 DATA30,18,40,22,30,22,60,3E,
20,30,26
615 DATA18,40,30,26,30,18,3E,2C,
20,30,18
620 DATA3A,28,30,22,18,40,22,30,
22,18,48
625 DATA28,3A,30,48,52,48,40,22,
0,0,0
630 DATA0,0,0
635 REM ** DRAW SCREEN **
640 CLS:DATA TRS-80 COMPUTING CE
LEBRATES ITS THIRD ANNIVERSARY!

645 READ A#
650 PRINTTAB(8)"BY DAVID MCNALLY
":PRINT:PRINTTAB(5)"PRESS ANY KE
Y TO START!"
655 Q=28:FORX=1TOLEN(A#)+28:IF I
NKEY#<>" THEN 660 ELSEQ=Q-1:Q=Q
*SGN(Q):P#=MID$(A#,X+(Q-27),28-Q
):PRINT@482+Q,P#;:FOR T=1TO70:NE
XTT,X:GOTO 655
660 PMODE 4,1:PCLS
665 SCREEN 1,1
670 LINE(0,0)-(31,192),PSET,BF
675 LINE(225,0)-(256,192),PSET,B
F
680 FOR T=32 TO 224 STEP 12
685 LINE(T,0)-(224,T-20),PSET:LI
NE(224,T-20)-(256-T,192),PSET:LI
NE(256-T,192)-(32,224-T),PSET:LI
NE(32,224-T)-(T,0),PSET
690 NEXT
695 DATA 83,94,99,110,115,126,14
3,154,159,170

```

Nine-Times

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Magazine Source: Due to many inquiries, the source code for the magazine graphic shell is being provided as an informational tool. Included is the actual Basic09 source code and compiled modules on disk, as well as documentation and a printed copy of the source code.

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```

700 FOR Y=1 TO 5:READ A,B:LINE(A
-1,53)-(B-1,53),PSET:LINE(A-1,55
)-(B-1,55),PSET:NEXT
705 DATA 87,90,99,102,107,110,11
5,118,143,146,151,154,159,162,16
7,170
710 FOR Y=1 TO 8:READ A,B:LINE(A
-1,57)-(B-1,57),PSET:LINE(A-1,59
)-(B-1,59),PSET:NEXT
715 DATA 87,90,99,110,115,126,13
1,138,143,154,159,162,167,170
720 FOR Y=1 TO 7:READ A,B:LINE(A
-1,61)-(B-1,61),PSET:LINE(A-1,63
)-(B-1,63),PSET:NEXT
725 DATA 87,90,99,106,123,126,14
3,146,151,154,159,162,167,170
730 FOR Y=1 TO 7:READ A,B:LINE(A
-1,65)-(B-1,65),PSET:LINE(A-1,67
)-(B-1,67),PSET:NEXT
735 DATA 87,90,99,102,107,110,11
5,126,143,154,159,170
740 FOR Y=1 TO 6:READ A,B:LINE(A
-1,69)-(B-1,69),PSET:LINE(A-1,71
)-(B-1,71),PSET:NEXT
745 DATA 57,68,73,84,89,92,97,10
0,105,116,121,124,129,132,137,14
8,153,164,169,172,177,180,185,19
6
750 FOR Y=1 TO 12:READ A,B:LINE(
A,89)-(B,89),PSET:LINE(A,91)-(B,
91),PSET:NEXT

```

```

755 DATA 57,60,73,76,81,84,89,93
,96,100,105,108,113,116,121,124,
129,132,141,144,157,160,169,173,
177,180,185,188
760 FOR Y=1 TO 14:READ A,B:LINE(
A,93)-(B,93),PSET:LINE(A,95)-(B,
95),PSET:NEXT:PSET(174,95)
765 DATA 57,60,73,76,81,84,89,10
0,105,116,121,124,129,132,141,14
4,157,160,169,180,185,188,191,19
6
770 FOR Y=1 TO 12:READ A,B:LINE(
A,97)-(B,97),PSET:LINE(A,99)-(B,
99),PSET:NEXT:PRESET(172,97):PRE
SET(173,99):PRESET(174,99)
775 DATA 57,60,73,76,81,84,89,92
,94,95,97,100,105,108,121,124,12
9,132,141,144,157,160,169,172,17
7,180,185,188,194,196
780 FOR Y=1 TO 15:READ A,B:LINE(
A,101)-(B,101),PSET:LINE(A,103)-
(B,103),PSET:NEXT
785 DATA 57,68,73,84,89,92,97,10
0,105,108,121,132,141,144,153,16
4,169,172,177,180,185,196
790 FOR Y=1 TO 11:READ A,B:LINE(
A,105)-(B,105),PSET:LINE(A,107)-
(B,107),PSET:NEXT
795 EXEC &H4E84
800 CLS
805 END

```

FOR SALE

1-TRS-80 COLOR COMPUTER 2--Includes both factory manuals,RF converter and all connection cables including Cassette. Also included FREE is a book of BASIC computer games especially written for the COCO.

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1-Demon Attack Program Pak

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All equipment is in showroom condition. To order or inquire write to address below. Go ahead it will be worth it for these deals!

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Richard Heiser, P.O. Box 576, Nutting Lake, MA. 01865

Balloon Basher

By Anton P. Milardovic

16k ECB
joystick
required

BALLOON BASHER is a game where you have to shoot as many of 30 balloons as possible. You need quick hands and a right joystick. But watch out! The game is equipped with a timer. After a few seconds, the balloon disappears, and another one re-appears. You get 2 points for a yellow balloon, 4 for a blue one, and 6 for a red one. A good score would be around 120. Have fun!

THE LISTING: BALLBASH

```
1 ' COPYRIGHT (C) 1990           :RETURN
2 ' BY TRS-80 COMPUTING MAGAZINE 220 PUT(X,Y)-(X+22,Y+25),RD,PSET
10 ' *****                    :RETURN
20 ' * BALLOON BASHER *          230 PUT(X,Y)-(X+22,Y+25),BL,PSET
30 ' *                            :RETURN
40 ' * BY: mILARDOVIC *          240 PCLS:TIMER=0
50 ' *      aNTON *              250 X=RND(220):Y=RND(165):ONRND(
60 ' *      pETER *              3)GOSUB210,220,230
70 ' *                            260 A=INT(JOYSTK(0)/2)*8:B=INT(J
80 ' *FRIDAY MAY 4, 1990*        OYSTK(1)/4)*12:C=PPOINT(A,B)
90 ' *****                    270 COLORRND(4):LINE(A,B)-(A+1,B
100 DIM BL(16),RD(16),YE(16)     +1),PSET,B:COLORC:LINE(A,B)-(A+1
110 CLS:PRINT:PRINT"MR. MAPSTER  ,B+1),PSET,B
PROUDLY PRESENTS..."          280 IF(PEEK(65280)AND3)=2THENIFC
120 PRINT:PRINT:PRINT:PRINT:PRIN <>1THEN300ELSEMI=MI+1:SOUND50,2:
TTAB(9)"BALLOON BASHER"        GOTO310
130 PRINT:PRINT:PRINT:PRINT:PRIN 290 IFTIMER>100THENOT=OT+1:SOUND
T"BASH THE BALLOONS WITH THE RIG 50,3:GOTO310ELSE260
HTJOYSTICK. PRESS JOYSTICK BUTTO 300 SOUND150,1:SOUND200,1:SC=SC+
N TO START"                    C*2
140 POKE65495,0:C=RND(8):IFC=BC   310 T=T+1:IFT<30THEN240
THEN140ELSEFORX=1TO16:SET(32-X,1 320 SCREEN 0,1:CLS:PRINT" YOUR
0,C):SET(31+X,10,C):SET(32-X,15,  BALLOON BASHER RESULTS"
C):SET(31+X,15,C)              330 PRINT:PRINT:PRINT"OUT OF TIM
150 SET(16,14-X/6,C):SET(16,12+X  E",OT
/6,C):SET(47,14-X/6,C):SET(47,12 340 PRINT"MISSED BALLOONS",MI
+X/6,C):NEXT:IF(PEEK(65280)AND3) 350 PRINT:PRINT"GOOD HITS",30-OT
=2THEN160ELSEBC=C:GOTO140      -MI
160 POKE65494,0:PMODE3,1:PCLS:FO 360 PRINT:PRINT:PRINT"YOUR FINAL
RX=1TO3:CIRCLE(X*30,15),10,X+1,1  SCORE";SC
.3:PAINT(X*30,15),X+1,X+1:NEXT   370 FORX=1TO1000:NEXT
170 GET(20,3)-(42,28),YE,G       380 PRINT@480,"BUTTON - AGAIN
180 GET(50,3)-(72,28),BL,G       ANY KEY - EXIT";
190 GET(80,3)-(102,28),RD,G     390 A$=INKEY$:IFA$<>" "THENCLS:EN
200 PMODE3,1:PCLS:SCREEN1,0:OT=0  D
:MI=0:SC=0:T=0:GOTO240         400 IF(PEEK(65280)AND3)=2THEN110
210 PUT(X,Y)-(X+22,Y+25),YE,PSET ELSE390
```

END OF PROGRAM

THE DEATH OF THE COCO !?!

BY DAVID McNALLY

Has anyone noticed that the CoCo is becoming less and less popular! There is even talk that Radio Shack is thinking of stopping the production of the machine we all love. Popular magazines have been getting thinner and thinner, and there are few advertisers left out there. It seems that all the third party vendors are going out. When we all hear this news it makes us upset but it is us, the CoCo Community that is "killing the CoCo". I am not, by no means, putting anyone down, I'm just trying to prove a point.

How can this be stopped? How can you help? The answer is simple. We need to support the people who work hard to keep products for the CoCo in the market. All too often people are pirating software. It is very hard to protect software from being copied because of all those "master hackers" out there. We here at TRS-80 Computing also find it difficult at times because of the lack of submissions we have been receiving from our members! We (meaning all third party vendors) need your support more than ever to help keep our favorite computer up and running for years to come. Please try as much as your budget allows, to help support the ads. in this and other CoCo magazines. Together we can stop this CoCo madness!

* RADIO SHACK is a registered trademark of Tandy Corporation.

David McNally

Program Manager



GRAPHICS BY LEO BREHM

BASIC PROGRAMMING TIP:

Watch out BASIC programmers! Did you know that if you accidentally mix a DRAW command with an HDRAW command in the same program, and after RUNing it, you could really "screwup" the contents of what's in the HDRAW command? Here's what I mean...

A program using all HDRAW:

```
5 HSCREEN 2: HDRAW "BM160,96;U20
R20D20L20"
10 GOTO 10
```

A program mixing HDRAW and DRAW (listing after RUNing):

```
5 HSCREEN 2: HDRAW "BM160,96;U20
R120DerUn20L20IE,;"
10 DRAW "BM128,96; U20R20D20L20"
15 GOTO 15
```

Programming Puzzle

WRITE A PROGRAM THAT:
Picks random numbers
between 121 and 130. Use
the shortest possible
method. (HINT: There's a
formula to this one!)

**- ANSWER WILL BE
PRINTED IN THE NEXT
ISSUE (AUGUST):**

Erich Sweaney Software

Slam Bam

Have you ever dreamed of slam dunking? We'll now take your CoCo into the world of Slam Dunking, with "SLAM BAM". There is over 27 different kinds of slam dunks. Ranging from a back-handed slam, to a full 360 spin slam dunk. You can even break the backboard! It even has a high score board, to keep track of all your high scores. For the Tandy Color Computer 3 128k Disk \$15.95

"I definitely recommend that you add Slam Bam to your software collection", TRS-80 Computing

The CoCo Notes Newsletter

This is a bi-monthly magazine, which also includes a on-disk version. Want to learn how to program (In OS-9, RS-Dos, Basic, Basic09, C, Pascal, etc), and learn new programming concepts? Then the CoCo Notes Newsletter is for you. We also feature the latest information in the CoCo World, like for example a series of reports on the NEW COCO 4 Development, we were first to write a report.

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(A Excellent Reference Guide for Expert OS-9 users)

Send Check or Money Order to: Or call 206-535-9733 for Info
Erich Sweaney Software P.O. Box 45434 Tacoma, WA 98445

A.O.S.

by DAVID McNALLY

ERR. LG8

WHAT IS A.O.S.?

Mathematics is a science which never permits two different answers to the same series of calculations. There is only one solution to any given computation. In order for this to be so, certain rules must be made. These rules are known as "The Order of Operations". For instance, we know the following has only one answer which is nine.

```
3+10-2*14/17  (2*14)
3+10-28/7     (28/7)
3+10-4        (3+10)
13-4
=9
```

We get nine by doing any multiplication and division from left to right first, and then doing addition and subtraction from left to right. We also all know that parenthesis are the exception to the rule. Anything in parenthesis is done first. The A.O.S. is the ability of a calculator or computer to follow these rules. Most pocket calculators don't have A.O.S. and will not give you nine for an answer to the problem above.

HOW DOES A.O.S. APPLY TO THE COCO?

You may not have realized this, but your COCO has the A.O.S. built in. If you key in the problem above, nine will be displayed. This is the order in which the COCO solves longer problems:

1. Anything in parenthesis is done first.
2. All COS, SIN, TAN, LOG and exponents are done next.
3. Then multiplications and divisions from left to right.
4. And last, all additions and subtractions from left to right.

CORRECTION (APRIL 1990 ISSUE)

On page 11 of last month's issue, where the description of the Text Center Utility is, it stated that the program prevents wrap-around. That is not true; the Text Center Utility does NOT prevent wrap-around. In order to make it do so, add this line to the program: 29 IF LEN(L\$(X))>30 THEN 28

TRS-80 Computing Survey

Below is a survey we are taking for TRS-80 Computing magazine, in order for us to make decisions on changes we are planning to make, and your opinions on them. Answer all the questions, and write any comments or suggestions that you may have below. Send it back to us, using the address on the back cover. Thanks!

1. Do you have a CoCo 1, 2, or 3?.....
2. Have you ordered the TC-9 Tomcat or the Multi-Media I?
3. Do you have a disk drive? If yes, which one?
4. Do you have a printer? If yes, which one(s)?
5. What type of software do you like? What type do you dislike?
6. What do you think of TRS-80 Computing?
7. If you could make a change in it what would it be?
8. Would you mind if the pages were double-sided?
9. Would you like for TRS-80 Computing to be printed on 3-ring binder paper so you can store each issue in a binder? What about when ordering back issues?.....
10. Would you like the program listings printed smaller so that more room can be saved for other things?
11. What do you like the most about TRS-80 Computing? The least?
12. Would you like to renew your subscription?
13. Are you aware of our new club? Do you plan to join?
14. About how often do you respond to someone's advertisement in TRS-80 Computing? (Never, sometimes, a lot)
15. Do you type any programs that appear in TRS-80 Computing?
16. Which program do you like the most? Least?
17. What issue of TRS-80 Computing do you like the most? (Games, Utilities, Holiday, Halloween, anything issue, or Beginners)
18. Have you ever advertised in TRS-80 Computing? If so, were you pleased with the results?
19. How many other computer magazines do you subscribe to?
20. What articles in TRS-80 Computing has helped you the most?
21. Would you like to see more pages of the magazine done on the MAX-10 * word processor?

* MAX-10 IS A TRADEMARK OF COLORWARE.

ADDITIONAL COMMENTS:

THE NEW COCOS PART I

THIS MONTH:

TC-9 TOMCAT

FRANK HOGG LABORATORY

Finally, after about 4 years of waiting, a company has come out with a new computer that is a major improvement over Tandy's CoCo 3. It is the TC-9 Tomcat from Frank Hogg Laboratory. When you first take a look at the Tomcat, you'd think it is another one of those IBM PC compatible computers. That's because the keyboard is PC compatible, and the 6809 CPU is almost the size of the Tandy 1000's. You can use a regular CM-3 monitor from Radio Shack.

The TC-9 is over 25% faster than the CoCo 3. It has two "real" serial ports, a parallel printer port, a standard CoCo bus for use of CoCo ROM paks, an 8 bit D to A and A to D (this provides better sound and a higher resolution joystick, 256 versus 64) and it's arranged so you can use 512K on board RAM (or a CoCo 3 512K memory upgrade). The TC-9 supports an internal speaker and a serial mouse. It can be upgraded to 1 megabyte with FHL's Disto 1 Meg upgrade (no soldering needed). The TC-9 board can be powered by any PC power supply, it will work with most, if not all OS-9 software. It will have RSDOS capability and is K-Bus compatible. Wow!! (quite a lot of features to it, huh?)

The TC-9's K-Bus capability allows interfacing it to the 68000 and the 68030 CPU. You can turn it right into a dual-processing system by installing the TC-9 in a K-Bus 68K system.

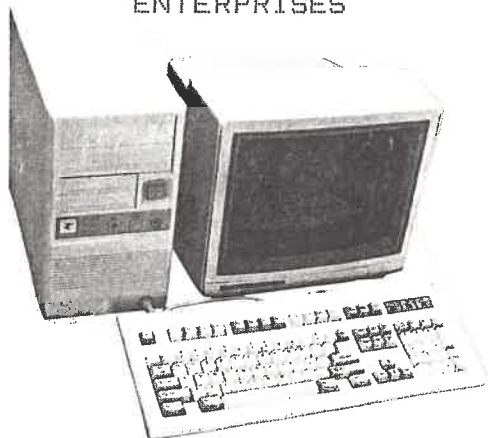
You can easily expand the TC-9 by adding a 68000 CPU which will speed up Level II operations and open up the door to running OSK. Frank Hogg Laboratory also has a great system of upgrading CPUs without "throwing anything away". All you have to do is simply add the memory card and you're in business!

If you currently own a CoCo 3 and use it for both RSDOS and OS-9 Level II, then the TC-9 Tomcat would be your road to the future. It will run all of your software much faster and give you some powerful new features and performance at a great cost.

The TC-9 Tomcat is truly the CoCo 4 that Tandy should have produced. Right now Frank Hogg Laboratory is taking orders for the TC-9 Tomcat which they will start delivering in late June of 1990. The TC-9 board is \$299.95, and for a system with case, power supply and TC-9/keyboard, prices start at \$499.95.

For further information you can write to them at 204 Windmere Road, Syracuse, New York, 13205, or call at (315) 469-7364.

NEXT MONTH: THE MULTI-MEDIA I FROM KENNETH-LEIGH ENTERPRISES



*Tomcat*TM

TRS-80 COMPUTING CLUB

We are happy to announce the start of our new club. A membership fee of \$35 a year will give you and your CoCo great benefits. It includes:

- * A years subscription or extension to TRS-80 Computing
- * Bi-weekly newsletters telling of upcoming events, software releases, etc...
- * A membership card which entitles you to get software discounts, enter in contests, etc...
- * Five disks (double-sided) full of games, utilities, hints, tips, adventures, etc... which will be sent over a one year period
- * Plus much more!!

A fee of \$25 a year will get you everything above except the years subscription or extension to TRS-80 Computing.

A fee of \$16 a year will get you the 5 disks and newsletters only.

All prices include:

- | | |
|------------------|---|
| * printing costs | * disk costs |
| * postage costs | * \$5 deposit on the disks (deduct \$5 for tape users) |

Note: There is no deposit for tape users. Specify tape or disk when ordering.

Each of the five disks has a \$1.00 deposit on it. For every disk you copy (for you personal use only) and send back, we will send you back \$1.00 at the end of your membership. This will help keep costs down.

We also have some popular software companies that will give all our members a 15-20% discount when purchasing a product from them (percentage of discount varies between companies). For example, D.P. Johnson, a software company that distributes many OS-9 programs, will give our members a 20% discount off their software.

Any member is welcome to send in programs they have wrote to go on the disks. Much of the club depends on your submissions.

Note: All programs on the disks are free and Public Domain (typed from a magazine, submitted, etc...) Price is for costs (see above) and membership only. A list of participating software companies will be sent to all members with membership cards.

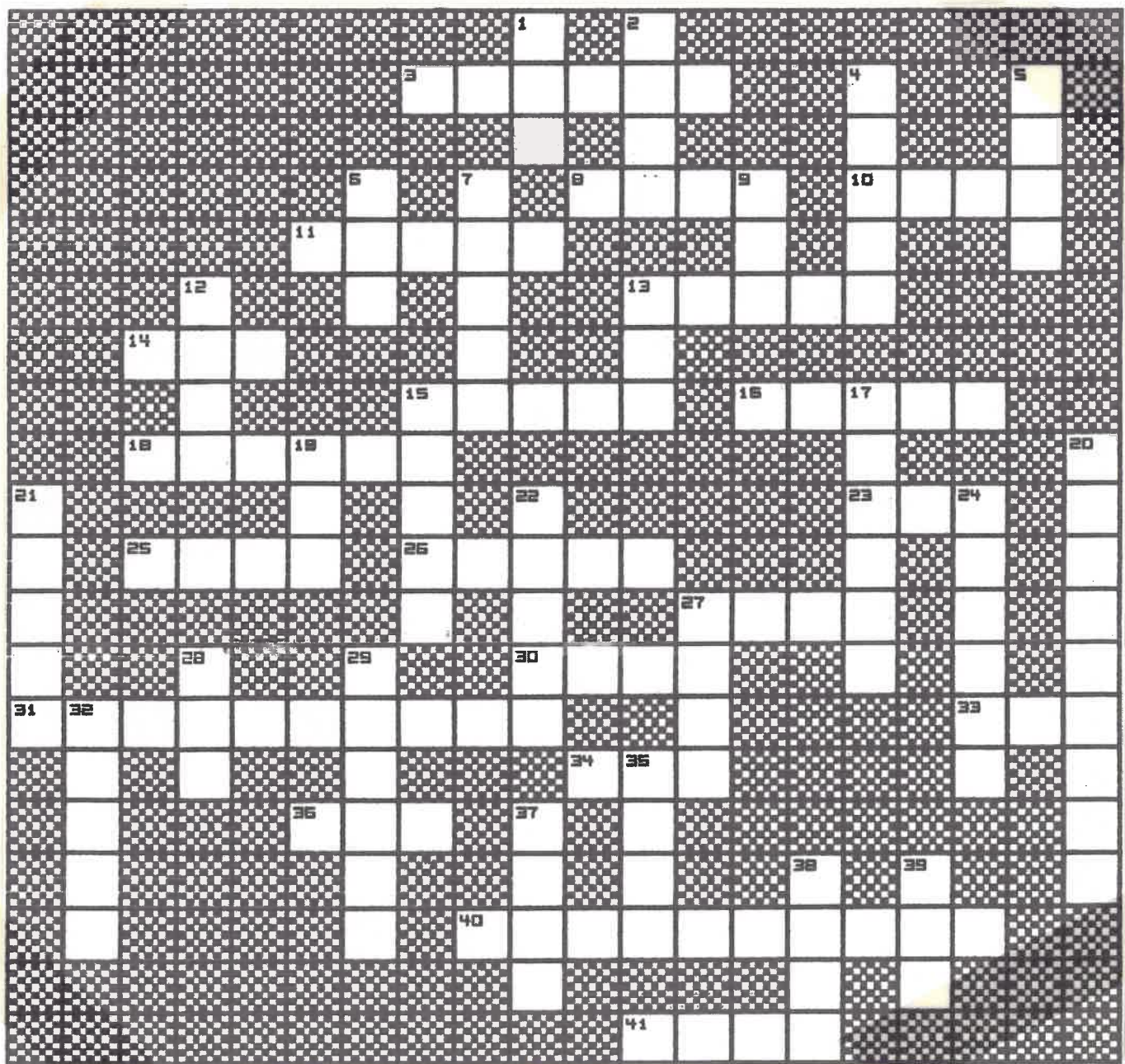
As soon as you become a member of the TRS-80 Computing Club we will send you information on submitting programs if you are interested.

If you have any further questions feel free to write. Write in c/o David McNally.

JOIN NOW! Simply fill out the small form below, and send it along with your name & full address (make sure to include the payment along with your order).
Please x one: A) \$25 club membership for a year
..... B) \$35 club memberbership and renew/extend/start
a subscription to TRS-80 Computing (6 issues).

All prices have postage included and a \$5.00 deposit for the five disks. You will be sent \$1.00 for every disk you copy and return to use so we can reuse them. **THANK-YOU!!**

Below is our annual CoCo crossword puzzle that we've been putting in since our second anniversary issue (June '89). The puzzle consists of CoCo terms, BASIC vocabulary, and some other odds & ends. The clues are on the next page, and the answers are on the last page of this issue. Good Luck!



ACROSS CLUES

- 3. A PROTECTED AREA ON THE SCREEN.
- 8. SAME AS BREAK KEY
- 10. USED TO FIX A LINE
- 11. USED TO RENUMBER A PROGRAM
- 13. TURNS CASSETTE MOTOR ON/OFF.
- 14. RETURNS NATURAL LOGARITHM.
- 15. NOT PLAY BUT _____.
- 16. BEGINNERS ALL-PURPOSE SYMBOLIC INSTRUCTION CODE.
- 18. COMMAND THAT ALLOWS YOU TO USE THE JOYSTICK.
- 23. PICKS RANDOM NUMBERS
- 25. SETS A DOT ON THE PMODE SCREEN.
- 26. DISPLAYS INFO. TO DISK, SCREEN, OR PRINTER.
- 27. USED TO PUT NUMBERS DIRECTLY INTO THE COCO'S MEMORY.
- 30. USED TO START A ML PROGRAM
- 31. COMES WITH MOST SOFTWARE
- 33. RETURNS THE SIGN OF AN EXPRESSION.
- 34. RETURNS CURRENT PRINT POSITION.
- 36. TO ERASE ALL OR PART OF A PROGRAM.
- 40. PRINTS NUMBERS IN SPECIFIED FORMAT.
- 41. CPU NUMBER IN SOME COMPUTERS.

DOWN CLUES

- 1. ENDS A PROGRAM
- 2. USED TO CONTINUE A PROGRAM.
- 4. RESERVES BYTES FOR STRING STORAGE.
- 5. USED WITH READ
- 6. NOT DECIMAL BUT _____.
- 7. TURNS THE TV'S SPEAKER ON OR OFF.
- 9. USED AFTER GET
- 12. TELLS COMPUTER TO JUMP TO ANOTHER LINE.
- 13. FINDS A LETTER IN THE MIDDLE OF A STRING.
- 15. USED TO SEARCH THROUGH CASSETTE FILES WITHOUT LOADING A PROGRAM.
- 17. SETS THE COMPUTER TO EITHER A PMODE OR TEXT SCREEN.
- 19. SETS A POINT ON THE LOW-RES SCREEN.
- 20. INPUTS LINE FROM KEYBOARD
- 21. USED TO LOAD A BASIC PROGRAM FROM CASSETTE.
- 22. A LIST OF _____ IS SHOWN AFTER YOU TYPE DIR.
- 24. DEFINES ENTRY POINT FOR USR FUNCTION.
- 27. CLEARS THE PMODE SCREEN
- 28. REMARK
- 29. A SERIES OF ONES AND ZEROS.
- 32. LOOKS FOR KEYPRESS
- 35. OPENS A FILE
- 37. A NEW KEY ON THE COCO III.
- 38. NOT BASIC BUT ANOTHER LANGUAGE.
- 39. FINDS THE INTEGER OF A NUMBER

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TRS-80 COMPUTING

Subscription Form

TRS-80 Computing, a bi-monthly magazine for Color Computer users, has up to 35 pages filled with programs, great articles, product reviews, graphics, hints & tips, etc... Different issues feature games, graphics, utilities, business, beginner's guides, and always our end-of-the-year holiday issue. Just to show you that every other month brings you a variety for your Tandy Color Computer. So subscribe to TRS-80 Computing today! (trial issues can be bought for \$1.75 each)

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- * A receipt will be given with the first issue you receive.
- * Subscriptions are non-refundable (we suggest you buy a trial issue before subscribing).

THANK-YOU!

TRS-80 COMPUTING
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The Color Computer As A Filing Cabinet
Part III: Disk Direct Access Filing - Refined

by: Anton Peter Milardovic

If you've read my articles in the February and April issues, you would have seen the start of this tutorial. It started off with an article on saving data to tape or disk using random (also called sequential) access. The next step was direct access for disk. For more information, see your computer and disk manuals.

This month's article again will deal with DISK only. That is only because the options for direct access filing which will be discussed here are only available for disk users.

What I will be discussing in this episode of DIRECT ACCESS FILING is what we call FORMATTING a direct access file. Using this method, you can cut files down by shortening the size of each record.

We had a program in the last issue which looked like this:

```
10 OPEN"D",#1,"ANOTHER.DAT"
20 WRITE #1,"TESTING NUMBERS",15,"AND STRINGS"
30 PUT#1, 1
40 WRITE #1,"SO IS THIS.",50,"ANOTHER TEST."
50 PUT#1, 2
60 CLOSE #1
```

If you haven't already, type this program in and RUN it. It produces a file with records that look like this (*'s represent spaces):

Record #1:

```
"TESTING NUMBERS", 15,"AND STRINGS"*****
*****
*****
*****
*****
```

Record #2:

```
"SO IS THIS.", 50,"ANOTHER TEST."*****
*****
*****
*****
*****
```

Notice all the extra spaces? This is because in direct accessing, if you don't specify the RECORD SIZE, the computer automatically uses 256 bytes.

If you haven't typed in the above program, type it in, and change line 10 to read:

```
10 OPEN"D",#1,"SPACSAVE.DAT",40
```

Try it out? Okay, the disk drive spun for a while. Now what? Check the directory. There's a new entry - SPACSAVE.DAT. You can probably guess what the ",40" in line 10 did. It shortened the record size to 40 bytes. One byte is the same as any one character which is represented by a CHR\$().

So, now what was written looks like this:

Record #1:

"TESTING NUMBERS", 15,"AND STRINGS"*****

Record #2:

"SO IS THIS.", 50,"ANOTHER TEST."*****

Notice that there is not as much wasted space. We could have trimmed it even further, but it's always safer with a few extra spaces, in case you get something a little longer. If something you want to save is longer than the specified buffer, the computer will cut off all extra characters.

There are more options which one can use for direct access, with which you can format your files in many different ways. Those are listed in your disk manual in Chapter 9 (Trimming the Fat out of Direct Access). The three commands are LSET, RSET and MKN\$.

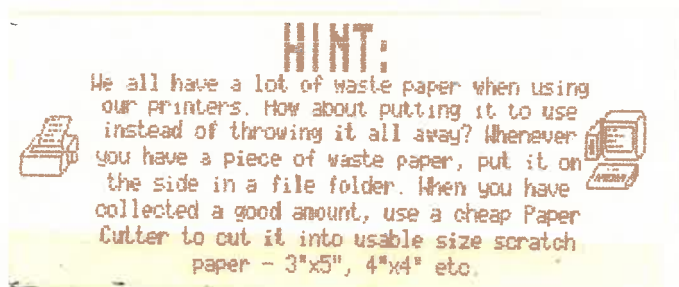
The possibilities are almost endless, so feel free to explore your Color Computer!

* * *

For those of you who like the technical side of the disk (tracks, sectors, granules, file allocation table, etc.), our next article will be for you! Look for "Cracking the CoCo Disk" in our August Issue.

Until the next issue, happy CoCoing!

Questions or comments about this article can be sent to Anton P. Milardovic, 94 Sunrise Place, Kitchener, Ontario, CANADA, N2B 3S9.



TAS-80 COMPUTING SOFTWARE

| NEEDED | DESCRIPTION | PRICE |
|--|--|---------------------------|
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OS-9 COLUMN

The bi-monthly column
devoted to OS-9 Level II
users!

THIS MONTH The Facts about the OS-9 operating system

As of this issue we are starting a section on OS-9. Many people are turning to OS-9 because it is more powerful and a lot faster than BASIC.

I remember the first time I saw the Getting Started With Color BASIC book and I never thought I would be able to learn it all, but after a few years I was programming in advanced BASIC. Learning OS-9 is the same way. We here at TRS-80 Computing are just starting to learn OS-9 and hopefully in a few years will be able to use it just as much as we do in BASIC.

We all know that when new and improved items hit the market, things such as our magazine become obsolete unless we keep up with the newer products. OS-9 is the same way. More people are turning to OS-9 because they don't want to feel "left out in the cold" so to speak. Most people want the newest, most advanced things and OS-9 is definitely one of them.

Another reason people are turning to OS-9 is because it is more powerful than BASIC but it is not as complex as Assembly Language. People want more power and don't want more work. OS-9 gives people more power without all the extra typing.

FACTS ABOUT OS-9

The one thing that has to be understood about OS-9 is that its not a language. It is merely an operating system that allows us to communicate with the CoCo by use of a group of programs. These programs also allow the CoCo to communicate with the printer, disk drive, cassette recorder, etc... in order to make it easier and more productive.

Currently there are two levels of the OS-9 operating system. They are Level I and Level II. Level I, being the first to come out, was designed to run on the CoCo 1 & 2. When the CoCo 3 came out, Level I was upgraded to Level II to use the enhanced capabilities of the CoCo 3. The only major differences noted between Level I & II is that Level II has more memory management for storing graphics, and has the new built-in windows feature. Level II also supports 512k memory, for those who have 512k CoCos.

OS-9 PROGRAM STRUCTURE

The "heirarchical directory structure" is the type of code that OS-9 accepts. This consists of main directories and subdirectories. In order to get access of a file in the structure, you have to use what is called a pathlist, in which you name the device the file is on, the subdirectories, and the filename. Everything in the pathlist must be separated by slashes, and have no spaces in between. A sample pathlist would be setup something like this: /d1/SUBDIR1/SUBDIR2/filename.

This is all just a brief introduction on what the OS-9 operating system is all about. Our goal in this new column is to educate our readers on this powerful system for the CoCo, along with any current news or software that is available for it. We will also have program listings that you can type out.

Your help in contributing to this column will be greatly appreciated. If you have any questions regarding submissions, please write or call us.

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N O T I C E

TRS-80 Computing's advertisement rates will be going up effective on August 6, 1990. Each rate will be raised \$8 (Ex. 1 page in 1 issue will be \$14 instead of \$6). However, you may reserve space in a future issue and pay the same rates that are being used now. Write to us for details.

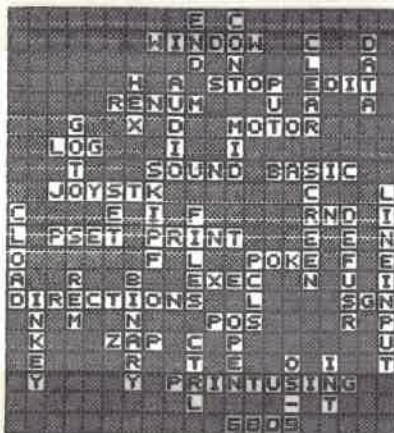
S U B M I T T I O N S

IF YOU HAVE A PROGRAM THAT YOU WOULD LIKE TO SUBMIT TO OUR MAGAZINE, SEND IT ON TAPE OR DISK. (WE'RE SORRY BUT WE CAN'T TYPE IN LISTINGS) IF WE LIKE IT, IT WILL BE PRINTED IN THE FOLLOWING ISSUE. MAKE SURE THE PROGRAM IS ERROR-FREE, AND ANY INSTRUCTIONS OR DESCRIPTIONS ARE INCLUDED WITH IT. WE ARE ALSO LOOKING FOR 1 OR 2 LINE PROGRAMS. THESE MAY BE TYPED ON A STANDARD PIECE OF PAPER.

* FOR MORE INFORMATION ON SUBMITTING MATERIAL TO TRS-80 COMPUTING, ASK FOR OUR SUBMISSION SHEET & 1990 EDITORIAL CALENDAR.

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