DECEMBER/1988

$1.00

TRS-80 COMPUTING

THE BI-MONTHLY MAGAZINE FOR COLOR COMPUTER USERS

OUR HOLIDAY ISSUE!

FILLED WITH EXCITING MUSIC AND

GRAPHIC PROGRAMS!

PLUS A HANDY UTILITY ARTICLE ON

CENTERING PRINTER HEADS

ORIGINAL PROGRAMS FOR:
TANDY COCO/APPLE/C64/128

INTERESTING ARTICLES FOR:
TANDY, AND OTHER COMPUTERS

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TRS-80 COMPUTING

GRAPHICS PROGRAM—#10

ECB required

This month's graphic program is for those who celebrate Hanukah. The program is called "The Lit Menorah". When you run it, the computer will draw a menorah, and one by one you'll see the candles light up!

THE PROGRAM:THE LIT MENORAH

```
5 PMODE 3,1
10 PCLS
15 SCREEN 1,1
25 DRAW"C7;BM28,144;R8BR16R8BR16R8BR16R8BR12R16BR12R8BR16R8BR16R8BR16R8"
30 FOR V=84 TO 144:PSET(28,V,7):PSET(36,V,7):PSET(52,V,7):PSET(60,V,7):PSET(76,V
,7):PSET(84,V,7):PSET(100,V,7):PSET(108,V,7):NEXT V
35 FOR V=72 TO 144:PSET(120,V,7):PSET(136,V,7):NEXT V
40 FOR V=84 TO 144:PSET(148,V,7):PSET(156,V,7):PSET(172,V,7):PSET(180,V,7):PSET(
196,V,7):PSET(204,V,7):PSET(220,V,7):PSET(228,V,7):NEXT V
45 DRAW"C7;BM28,84;R8BR16R8BR16R8BR16R8BR12U16R16D16BR12R8BR16R8BR16R8BR16R8"
50 LINE(104,144)-(152,192),PSET
55 LINE(152,144)-(104,192),PSET
58 LINE(104,192)-(152,192),PSET
60 PAINT(32,92),7,7:PAINT(56,92),7,7
65 PAINT(80,92),7,7:PAINT(104,92),7,7
70 PAINT(128,92),7,7
75 PAINT(152,92),7,7:PAINT(176,92),7,7
80 PAINT(200,92),7,7:PAINT(224,92),7,7
82 LINE(28,144)-(228,144),PSET
85 PAINT(132,152),7,7:PAINT(132,180),7,7
88 FOR DLAY=1 TO 800:NEXT DLAY
90 CIRCLE(32,80),4,8:CIRCLE(56,80),4,8:CIRCLE(80,80),4,8:CIRCLE(104,80),4,8
92 CIRCLE(128,60),8,8
95 CIRCLE(152,80),4,8:CIRCLE(176,80),4,8:CIRCLE(200,80),4,8:CIRCLE(224,80),4,8
96 PAINT(32,80),8,8:PAINT(56,80),8,8:PAINT(80,80),8,8:PAINT(104,80),8,8:PAINT(12
8,60),8,8
98 PAINT(152,80),8,8:PAINT(176,80),8,8:PAINT(200,80),8,8:PAINT(224,80),8,8
100 GOTO 100
```

Press the <BREAK> key to exit the program.

EDITOR'S NOTE:

As you may have noticed in the past 3 or 4 months TRS-80 Computing has been bi-monthly (every other month). It will come out on the following months each year: February, April, June, August, October, and December.

Also, TRS-80 Computing's price has been raised from $.80 to $1.00. The new subscription rates are:

    1 issue: $1.00
    3 issues: $4.33
    6 issues: $7.66
    12 issues: $12.99

Joe Ahern
Joe Ahern
Editor & Publisher
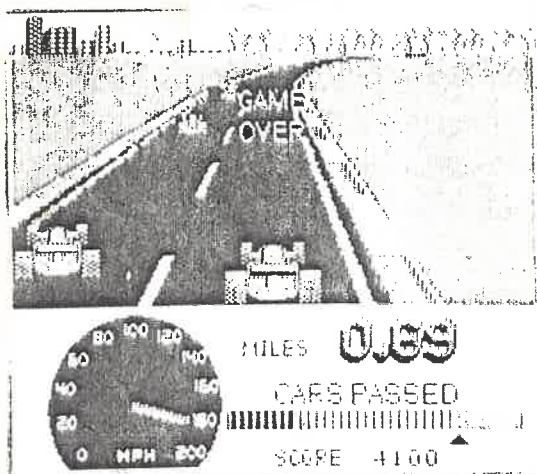
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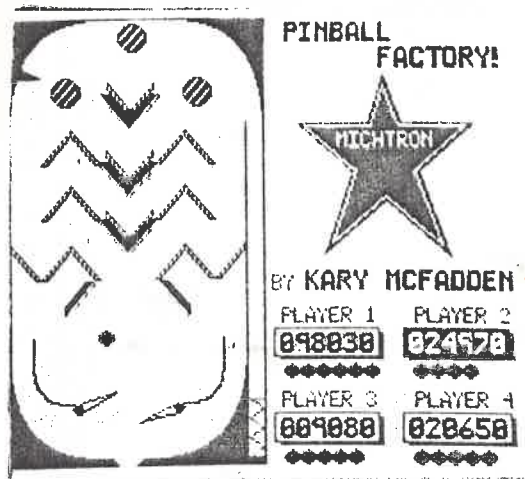
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THE PROGRAMMER

—Joe Ahern

D E C E M B E R

THIS MONTH'S PROGRAM
HOLIDAY TUNES!

Well, Christmas time is around the corner again, and it's also the time when we at TRS-80 Computing put extra effort into making our December issue the best. So, this month we decided to call our main program, "Holiday Tunes". It contains a variety of Christmas songs (6 to be exact) all controled by Listing #1 (boot). In order to have these programs work, you must follow the instructions given exactly.

INSTRUCTIONS: This month's program has been written to run on Disk BASIC because of the fast loading routines. Make sure when you save the game to use the filename given at the beginning of each listing. If you have a cassette recorder the program will take longer to load and will not automatically run. The changes will be found at the end of the listings. Note:Make sure each listing is entered seperately. After saving listing one, (whether or not your using disk or tape), continue on with listing #2. After each listing has been saved, type NEW and repeat. Also, all programs have been thoroughly tested. Any errors are do to mistyping.

LISTING 1:START-UP BOOT   FILENAME:BOOT

```
5 CLS(5)
10 PRINT@11,"JOE AHERN";
15 PRINT@34,"WE WISH YOU A MERRY CHRISTMAS";
20 PRINT@72,"AWAY IN A MANGER";
25 PRINT@169,"DAVID MCNALLY";
30 PRINT@201,"JINGLE BELLS";
35 PRINT@233,"SILENT NIGHT";
40 PRINT@330,"JAMES FERRO";
45 PRINT@361,"DECK THE HALLS";
50 PRINT@393,"THE FIRST NOEL";
55 PRINT@487,"PRESS <R> TO BEGIN";
58 A$=INKEY$:IF A$=""THEN 58
60 LOAD"XMAS",R
```

LISTING 2:WE WISH YOU A MERRY CHRISTMAS   FILENAME:XMAS

```
0 ' WE WISH YOU A MERRY CHRISTMAS
1 FOR DLAY=1 TO 2000:NEXT DLAY:CLS(0)
2 PRINT@2,"we";:PRINT@5,"wish";:PRINT@10,"you";:PRINT@14,"a";:PRINT@16,"merry";:
PRINT@22,"christmas";
5 FOR H=20 TO 43:SET(H,8,4):NEXT H:FOR V=8 TO 22:SET(20,V,4):NEXT V:FOR V=8 TO 1
6:SET(43,V,4):NEXT V
10 X=21:Y=23:FOR D=1 TO 4:SET(X,Y,4):X=X+1:Y=Y+1:NEXT D:X=44:Y=17:FOR D=1 TO 5:S
ET(X,Y,4):X=X+1:Y=Y+1:NEXT D
15 FOR H=25 TO 31:SET(H,27,4):NEXT H:FOR H=32 TO 46:SET(H,28,4):NEXT H:FOR H=47
TO 54:SET(H,29,4):NEXT H
20 SET(55,28,4):SET(56,27,4):FOR V=22 TO 26:SET(57,V,4):NEXT V:FOR H=49 TO 57:SE
T(H,22,4):NEXT H
25 X=21:Y=11:FOR D=1 TO 4:SET(X,Y,5):X=X+1:Y=Y+1:NEXT D:X=27:Y=11:FOR D=1 TO 4:S
ET(X,Y,5):X=X+1:Y=Y+1:NEXT D:SET(26,12,5):SET(25,13,5):SET(32,12,5):SET(31,13,5)
30 X=33:Y=11:FOR D=1 TO 4:SET(X,Y,5):X=X+1:Y=Y+1:NEXT D:SET(37,13,5):SET(38,12,5
):SET(39,11,5):SET(40,12,5):SET(41,13,5):SET(42,14,5)
35 SET(38,7,4):SET(39,6,5):SET(40,5,4):SET(41,4,5):SET(42,4,4):SET(43,4,5):SET(4
3,5,4):SET(42,6,4)
40 FOR H=26 TO 32:SET(H,5,2):NEXT H:FOR V=4 TO 7:SET(26,V,2):SET(32,V,2):NEXT V:
FOR V=6 TO 7:SET(24,V,2):SET(34,V,2):NEXT V
45 SET(25,7,2):SET(28,6,2):SET(30,6,2):SET(33,7,2)
90 FOR DLAY=1 TO 2000:NEXT DLAY
100 FOR T=1 TO 32:READ A:READ B
110 IF A=0 AND B=0 THEN FOR H=1 TO 250:NEXT H:GOTO 130
```

```
120 SOUND A,B
130 NEXT T:FOR L=1 TO 2000:NEXT L:CLS:LOAD"MANGER",R
1000 DATA 32,5,89,4,89,4,108,4,89,4,78,4,58,4,58,4,0,0
1010 DATA 58,5,108,4,108,4,125,4,108,4,89,4,78,4,32,4,0,0
1020 DATA 32,5,125,4,125,4,133,4,125,4,108,4,89,4,58,5,32,2,32,2,58,4,108,4,78,4
,89,5,0,0
```

LISTING 3:AWAY IN A MANGER   FILENAME:MANGER

```
5 CLS(0)
10 PRINT@40,"AWAY IN A MANGER";
15 FOR H=10 TO 53:SET(H,14,2):NEXT H
20 FOR V=14 TO 29:SET(10,V,2):SET(53,V,2):NEXT V
25 FOR H=14 TO 19:SET(H,9,2):NEXT H
30 FOR H=45 TO 50:SET(H,9,2):NEXT H
35 FOR H=23 TO 41:SET(H,5,2):NEXT H
40 X=11:Y=18:FOR Z=1 TO 4:SET(X,Y,2):X=X+1:Y=Y-1:NEXT Z
45 X=10:Y=13:FOR Z=1 TO 4:SET(X,Y,2):X=X+1:Y=Y-1:NEXT Z
50 SET(20,8,2):SET(21,7,2):SET(22,6,2)
55 SET(42,6,2):SET(43,7,2):SET(44,8,2)
60 X=50:Y=10:FOR Z=1 TO 4:SET(X,Y,2):X=X+1:Y=Y+1:NEXT Z
65 X=49:Y=15:FOR Z=1 TO 4:SET(X,Y,2):X=X+1:Y=Y+1:NEXT Z
70 FOR V=7 TO 11:SET(31,V,2):NEXT V:SET(30,8,2):SET(32,8,2)
100 FOR L=1 TO 61
105 READ A
110 IF A=0 THEN FOR T=1 TO 150:NEXT T:GOTO 130
120 IF L=49 THEN SOUND A,7:GOTO 130
125 SOUND A,6
130 NEXT L
140 CLS:LOAD"JINGLESI",R
1000 DATA 0,0,0,0,0,0,0,147,147,133,125,125,108
1010 DATA 89,89,78,58,32,0
1020 DATA 32,32,58,32,32,108,78,58,32,89,125,0
1030 DATA 147,147,133,125,125,108,89,89,78,58,32,0
1040 DATA 78,133,125,108,125,108,89,108,58,78,89,0,0,0,0,0,0,0,0
```

LISTING 4:JINGLE BELLS/SILENT NIGHT   FILENAME:JINGLESI

```
2 A$="              ":B$="(-)"
4 CLS(5)
6 PRINT@73,LEFT$(A$,1);
8 PRINT@104,LEFT$(A$,3);
10 PRINT@135,LEFT$(A$,5);
12 PRINT@166,LEFT$(A$,7);
14 PRINT@197,A$;
16 PRINT@233,LEFT$(A$,1);
18 PRINT@265,LEFT$(A$,1);
20 PRINT@296,B$;
22 PRINT@240,"HAPPY";
24 PRINT@302,"HOLIDAYS!";
26 FOR L=1 TO 50
28 READ D,E
29 IF D=0 AND E=0 THEN FOR T=1 TO 250:NEXT T:GOTO 30 ELSE SOUND D,E
30 NEXT L
32 FOR T=1 TO 2000:NEXT T:CLS0
34 CLEAR 1000:DIM B$(10)
36 A$=CHR$(191)+CHR$(191)
38 B$=A$+A$+A$+A$+A$
40 C=234:FOR F=1 TO 9:PRINT@C,B$;:C=C+32:NEXT F
41 PRINT@300,"CANDLE";:PRINT@366,"OF";:PRINT@429,"LOVE";
```

```
42 SET(30,13,1):SET(29,13,1):FOR T=1 TO 1000:NEXT T
43 SET(29,11,4):SET(30,11,4)
44 FOR L=1 TO 114
46 READ X,Y
48 IF X=0 AND Y=0 THEN FOR T=1 TO 250:NEXT T:GOTO 56
50 IF X=1 AND Y=1 AND POINT(30,11)=4 THEN SET(30,11,8):SET(29,11,8):GOTO 56
52 IF X=1 AND Y=1 AND POINT(30,11)=8 THEN SET(30,11,4):SET(29,11,4):GOTO 56
54 IF L>50 THEN SOUND X,Y
56 NEXT L
58 FOR T=1 TO 2000:NEXT
60 CLS:LOAD"DECKNOEL",R
2000 DATA 58,6,58,6,58,9
2002 DATA 58,6,58,6,58,8
2004 DATA 58,6,89,6,5,6,32,5
2006 DATA 58,9,78,6,78,6
2008 DATA 78,6,78,6,78,6
2010 DATA 58,6,58,6,58,7
2012 DATA 58,6,32,6,32,6
2014 DATA 58,7,32,10,89,6,0,0
2016 DATA 58,6,58,6,58,9
2018 DATA 58,6,58,6,58,8
2020 DATA 58,6,89,6,5,6,32,5
2022 DATA 58,9,78,6,78,6
2024 DATA 78,6,78,6,78,6
2026 DATA 58,6,58,6,58,7
2028 DATA 89,6,89,6,78,6
2030 DATA 32,7,5,9
2032 DATA 89,10,108,11,89,10
2034 DATA 58,14,0,0,89,10,108,11
2036 DATA 89,10,58,14,0,0,1,1
2038 DATA 147,12,147,12,125,11
2039 DATA 0,0
2040 DATA 1,1,133,12,133,12
2042 DATA 1,1,89,11,0,0,108,8,108,8
2044 DATA 133,9,1,1,125,8,108,10
2046 DATA 89,10,108,11,89,10,58,14
2047 DATA 0,0
2048 DATA 108,8,108,8,133,9
2050 DATA 125,8,108,10,89,10
2052 DATA 108,11,89,10,58,14
2053 DATA 0,0
2054 DATA 147,14,147,10,170,12
2056 DATA 147,8,1,1,125,12,133,16
2058 DATA 159,18,1,1,133,10,89,8
2060 DATA 58,9,89,15,1,1,78,4
2062 DATA 32,15,5,18,0,0,0,0,0,0
2064 DATA 0,0,0,0
```

LISTING 5:DECK THE HALLS/THE FIRST NOEL   FILENAME:DECKNOEL

```
0 ' DECK THE HALLS/THE FIRST NOEL
10 CLS(0)
20 X=11:Y=26
22 FOR T=1 TO 11:SET(X,Y,1):X=X+1:Y=Y-1:NEXT T
24 X=21:Y=15
26 FOR T=1 TO 5:SET(X,Y,1):X=X+1:Y=Y-1:NEXT T
28 X=25:Y=10
30 FOR T=1 TO 5:SET(X,Y,1):X=X+1:Y=Y-1:NEXT T
32 X=29:Y=5:
34 FOR T=1 TO 5:SET(X,Y,1):X=X+1:Y=Y-1:NEXT T
38 X=55:Y=26
40 FOR T=1 TO 7:SET(X,Y,1):X=X-1:Y=Y-1:NEXT T
```

```
42 X=49:Y=19
44 FOR T=1 TO 4:SET(X,Y,1):X=X-1:Y=Y-1:NEXT T
46 X=46:Y=15
48 FOR T=1 TO 3:SET(X,Y,1):X=X-1:Y=Y-1:NEXT T
50 X=44:Y=12
52 FOR T=1 TO 4:SET(X,Y,1):X=X-1:Y=Y-1:NEXT T
54 X=41:Y=8
56 FOR T=1 TO 8:SET(X,Y,1):X=X-1:Y=Y-1:NEXT T
60 FOR L=11 TO 55:SET(L,26,1):NEXT L
62 FOR L=27 TO 30:SET(27,L,1):SET(39,L,1)
64 NEXT L
66 FOR L=27 TO 39:SET(L,30,1):NEXT L
68 SET(34,6,4):SET(28,10,3):SET(39,10,5)
70 SET(32,18,3):SET(19,23,4):SET(31,24,5):SET(42,22,4)
72 SET(41,15,5):SET(24,17,3):SET(33,14,4):SET(49,24,5)
95 FOR DLAY=1 TO 2000:NEXT DLAY
100 FOR T=1 TO 61:READ A:READ B
110 IF A=0 AND B=0 THEN FOR P=1 TO 2000:NEXT P:GOTO 130
115 IF A=1 AND B=1 THEN FOR P=1 TO 250:NEXT P:GOTO 130
120 SOUND A,B
130 NEXT T:FOR P=1 TO 2000:NEXT P:CLS:END
1000 DATA 193,7,185,4,176,4,170,4,159,4,170,4,176,4,159,4
1010 DATA 170,4,176,4,185,4,170,4,176,4,170,4,159,4,153,4,159,4,1,1
1020 DATA 193,7,185,4,176,4,170,4,159,4,170,4,176,4,159,4
1030 DATA 170,4,176,4,185,4,170,4,176,4,170,4,159,4,153,4,159,4,0,0
1040 DATA 193,4,185,4,176,7,185,4,193,4,197,4,204,7,210,6,216,6,218,7,216,6
1050 DATA 210,6,204,7,210,6,216,6,218,7,216,6,210,6,204,6,210,6,216,6,218,6,210,
6,204,6,204,6
```

CHANGES FOR CASSETTE BASIC...

     If you have a cassette recorder and not a disk drive then add the
following change to the line numbers indicated in each listing:

CLS:PRINT"LOADING... PLEASE WAIT":CLOAD"filename"

Type RUN at OK prompt.

LISTING 1:LINE 60
LISTING 2:LINE 130
LISTING 3:LINE 140
LISTING 4:LINE 60

If you have any questions about this program, please feel free to call us
at (617) 828-7749. Ask for Joe Ahern, or leave message.

IMPORTANT NOTE:In line 2 of listing 4, there are nine spaces in A$.

** If you have any programs that you would like to contribute to our
programmer section then send it to us, we'd be glad to take a look at it.
Please leave your name & address, full instructions, and the programs name.

XMAS TREES, XMAS TREES!
FOR APPLE II & C64/128

Since this is the holiday season, we decided to draw a Xmas tree for the Apple II and C64/128. There is two seperate programs. The 1st one for the Apple, the 2nd one for the Commodore. I hope you enjoy these programs.

XMAS TREE:APPLE VERSION

```
100   GR : HOME : COLOR= 4
110   FOR X = 5 TO 16
120   REM  DRAW TREE
130 Y =  - 1.5 * X + 25
140   PLOT X,Y
150   NEXT X
160   FOR X = 16 TO 28
170 Y = 1.5 * X - 24
180   PLOT X,Y
190   NEXT X
200   REM  DRAW TRUNK
210   HLIN 5,27 AT 18
220   VLIN 18,24 AT 15
230   VLIN 18,24 AT 16
240   VLIN 18,24 AT 17
250   REM  DRAW LIGHTS
260   COLOR= 1: PLOT 10,15
270   COLOR= 1: PLOT 20,12
280   COLOR= 9: PLOT 15,10
290   COLOR= 9: PLOT 26,16
300   COLOR= 13: PLOT 16,16
320   COLOR= 15
330   HLIN 15,17 AT 1
340   VLIN 0,2 AT 16
```

XMAS TREE:C64/128 VERSION

```
5 PRINTCHR$(147)
10 A$="          ":B$="+":C$="****************"
12 PRINT A$;:PRINT LEFT$(A$,8);:PRINT B$
14 X=8:W=1
16 FOR Y=1 TO 8
18 PRINT A$;:PRINT LEFT$(A$,X);:PRINT LEFT$(C$,W):X=X-1:W=W+2:NEXT Y
20 X=8:W=1
22 FOR T=1 TO 5
24 PRINT A$;:PRINT LEFT$(A$,X);:PRINT LEFT$(C$,W):NEXT T
26 PRINT A$;:PRINT LEFT$(A$,6);:PRINT"(    )";
28 FOR H=1 TO 5:PRINT:NEXT H
30 PRINT A$;:PRINT LEFT$(A$,2);:PRINT"HAPPY HOLIDAYS!";
32 GOTO 32
```

NOTE:There are nine spaces in A$ (line 10)

A NOTE TO OUR READERS...

    Now that 1988 is passing by, it is time for us to take on some new
responsibilities. Lately we have found that some of our programs has had
errors in them. Now I'm in charge of the programs that go in our magazine.
Each program is tested many times by the writer and then each staff member
trys it. When it is complete, I test it one final time, then it is ready for
publication.
    This month's program "Holiday Tunes" has been tested many times, both
in their seperate listings and when they were all combined. All notes were
tested carefully. If you get an error after keying in the listing, check
the data carefully because 90% of the time that's where the error is. Happy
Holidays and good programming!

                                        David McNally
                                        David McNally
                                        Programmer Section Editor

                HAPPY HOLIDAYS

            FROM ALL OF US AT

            TRS-80 COMPUTING

                    Joe Ahern
                    David McNally
                    James Ferro
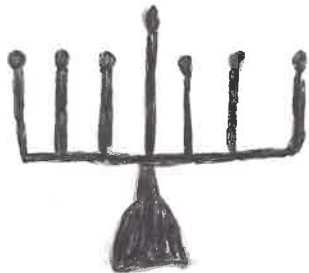
CENTERING THE PRINTER HEAD

For anyone who owns a printer, and doesn't have a word processing program, they should find this utility article to come in handy. It gives you 7 steps into writing a program to center the printer head on your printer. I hope this article will come into good use.

Step 1:Find out how many characters your printer can print on one line.

Step 2:Now divide the answer of step one by 2. Let T=(the answer to step two).

Step 3:Next input the string to be centered. Call the string A$.

Step 4:Find the length of the string that was inputed. Let X=(the answer to step 4).

Step 5:Let Z=X/2

Step 6:Let W=T-Z

Step 7:Now PRINT TAB(W) A$

The total program should be similiar to the following:

```
5 T=(characters per printer line)/2
10  INPUT A$
12  X=LEN$(A$)
14  Z=X/2
16  W=T-Z
18  PRINT TAB(W) A$
```

NOTE:If your printer can print different size characters then just follow the above steps and it should work correctly.

TRS-80 COMPUTING ORDER FORM

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        SIGNED. *Joe Ahern* AND. *David McNally*

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7.Lightning-Put lightning bolts on your screen.   CoCo $.25

```
_____

.  Name........................   .
.  Address......................   .
.  .............................   .
.  Programs names...............   .
.  .............................   .
.            Total..........    .
_____
```

For a list of all the Wizard's programs send $.50 for a catalog.

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Canton, MA. 02021

COMPUTER WIZARD

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This text adventure includes good high-resolution graphics and realistic
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ECB—Extended Color BASIC
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```
---------------------------------------------------------
 . Name............................. .
 . Address........................... .
 . .................................. .
 . Name of program(s).............. .
 . .................................. .
 .                    Total.......... .
---------------------------------------------------------
```

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SPECIALS (REPORTS, PROGRAMS, ETC...)

WINDOW WIZARD:BY DAVID McNALLY

This program was created to make menus and windows within a main program. After keying in the listing, type RUN. At the OK prompt, enter the vertical coordinate of the upper left hand corner of the square, then press <ENTER>. Then enter the horizontal coordinate of the upper left hand corner of the screen, and press <ENTER>. Next enter the vertical coordinate of the upper right hand corner of the square and press <ENTER>. Then enter the horizontal coordinate of the upper right hand corner of the square and press <ENTER>. Now, enter the vertical coordinate of the lower left hand corner of the square. Then enter the horizontal coordinate of the lower left hand corner of the square. Next enter the vertical coordinate of the lower right hand corner of the square. Then enter the horizontal coordinate of the lower right hand corner of the square and press <ENTER>. Finally, enter the color code 0-8. After entering the color you are in a main menu mode. Press <D> to draw the window and <S> to save it on tape.

SAMPLE RUN:

```
0  <ENTER>
0  <ENTER>
62 <ENTER>
0  <ENTER>
0  <ENTER>
30 <ENTER>
62 <ENTER>
30 <ENTER>
4  <ENTER>
NOW PRESS <D>.
```
NOTE:This is the biggest square you can draw without getting an error.

After all coordinates have been entered, press <S> to save on tape. Now, to reload the window within your program, add the following subroutine:

```
1000 CLS:OPEN"I",#-1,"Window's filename"
1010 IF EOF(-1) THEN 1022
1020 INPUT#-1,A:INPUT#-1,B:INPUT#-1,C:INPUT#-1,D:INPUT#-1,E:INPUT#-1,F:INPUT#-1,G:INPUT#-1,H:INPUT#-1,I
1021 GOTO 1010
1022 CLOSE#-1
1023 CLS(0)
1025 FOR L=B TO F:SET(A,L,I):NEXT L:FOR L=D TO H:SET(C,L,I):NEXT L:FOR L=A TO C:SET(L,B,I):NEXT L
1035 FOR L=E TO G:SET(L,F,I):NEXT L
```

THE LISTING:WINDOW WIZARD

```
5  CLS
10 PRINT"OK"
12 INPUT A,B:INPUT C,D:INPUT E,F
14 INPUT G,H:INPUT I
16 A$=INKEY$:IF A$=""THEN 16
18 IF A$="D"THEN 1000
20 IF A$="S"THEN 2000
26 GOTO 16
1000 REM DRAW WINDOW
1001 CLS0
1002 FOR L=B TO F:SET(A,L,I):NEXT L:FOR L=D TO H:SET(C,L,I):NEXT L
1005 FOR L=A TO C:SET(L,B,I):NEXT L:FOR L=E TO G:SET(L,F,I):NEXT L
1009 GOTO 16
2000 REM SAVE ON TAPE
2001 CLS:PRINT"ENTER FILE NAME";:INPUT Z$
2003 OPEN"O",#-1,Z$
2004 PRINT#-1,A:PRINT#-1,B:PRINT#-1,C
2006 PRINT#-1,D:PRINT#-1,E:PRINT#-1,F
2008 PRINT#-1,G:PRINT#-1,H:PRINT#-1,I
2012 CLOSE#-1:PRINT"DONE":FOR T=1 TO 2000:NEXT:CLS:END
```

TRS-80 COMPUTING ON TAPE

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WHAT MONTH IS THE ISSUE YOU WANT ON TAPE?.............
WHAT VOLUME IS IT?............

WHAT IS YOUR NAME AND ADDRESS?.....................................

SEND $5.00 FOR THE COSTS (PER TAPE ORDERED)

IF YOU WOULD LIKE MORE THAN ONE WRITE DOWN THE ABOVE INFO. AND SEND IT TO US.

NOTE:REMEMBER IT IS $5.00 PER TAPE ORDERED AND IT IS FOR THE TRS-80'S ONLY!

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and your in business!

To teach your child to spell, we had to design software that talks.

Cave of the Word Wizard.™ A unique way to develop spelling skills using human speech and arcade action.

Software that tries to teach spelling by jumbled letters isn't a very good teacher. The software has to talk. Now it does. Only on *Cave of the Word Wizard* from Timeworks.

The Wizard talks like a human being, not like a robot. This fascinating character thrusts you into an intriguing adventure as he teaches spelling in the most effective way possible on a computer.

You have wandered into a mysterious cave, and the entrance has been sealed behind you. Suddenly the Word Wizard appears and informs you that in order to leave his cave you must find four magic crystals which have the power needed to open the cave entrance. You have only a flashlight to help you find your way through the cave, and your batteries are running low.

The Wizard is a funny old fellow who causes lots of mischief for anyone who enters his cave. He will appear often and ask you to spell a word—you will actually hear the old Wizard's voice!—and you cannot continue your search until you spell the word correctly.

The Wizard will use his magic powers to replenish the energy in your flashlight if you spell the word correctly, but each time you are wrong he will draw energy from your light. When your flashlight runs out of energy you will be doomed to roam through the cave in darkness forever.

During your search you will be confronted with spiders, rocks, snakes, and other dangerous obstacles that will make your quest for freedom even more challenging.
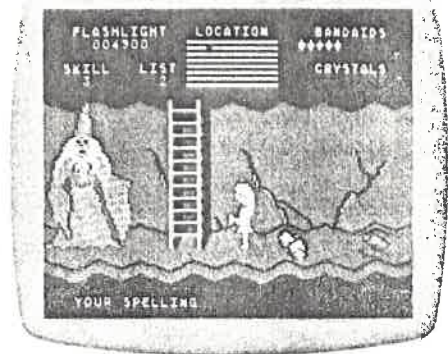
This state-of-the-art educational program includes 500 spoken words in 10 spelling skill levels and makes full use of the sound capabilities of your computer. The Wizard will talk to you in clear human speech. No additional hardware is needed for your computer system.

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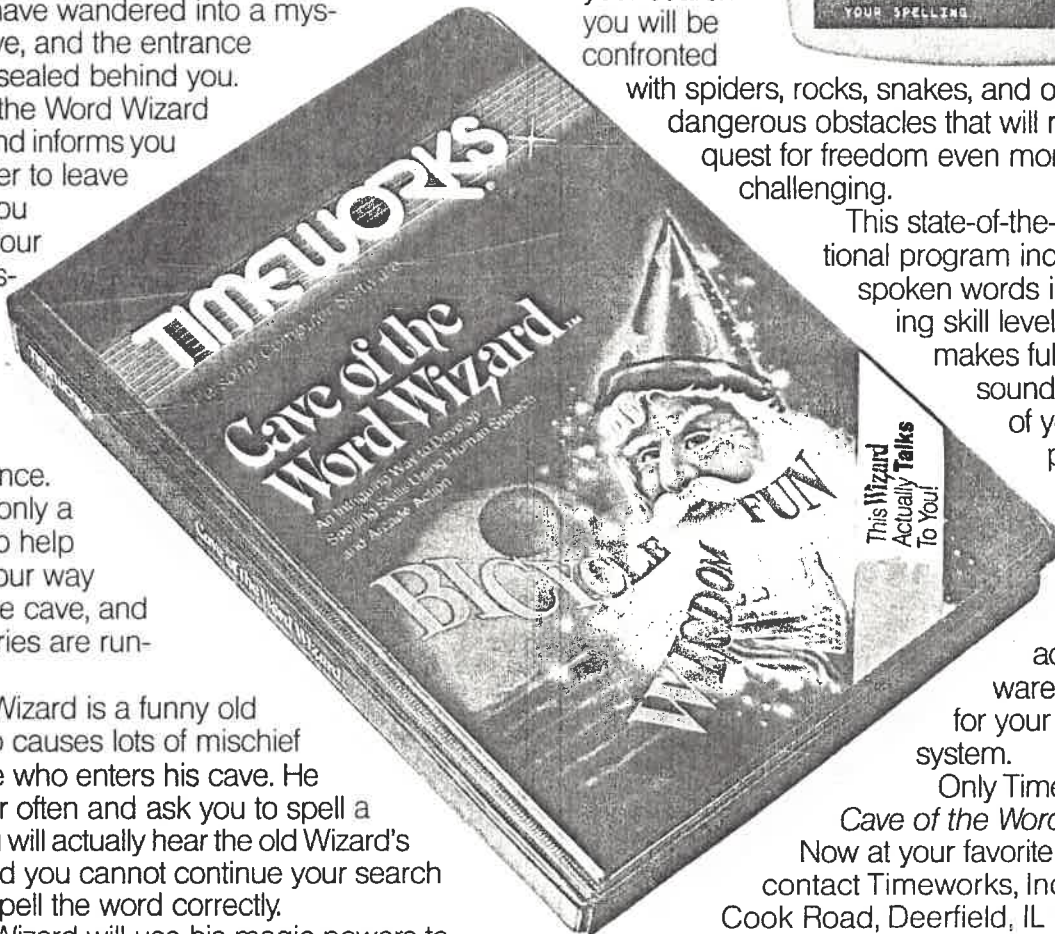
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a new typographical look for the front page and maybe even double-sided pages!
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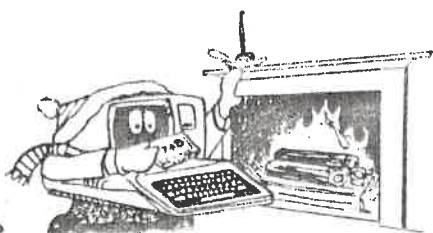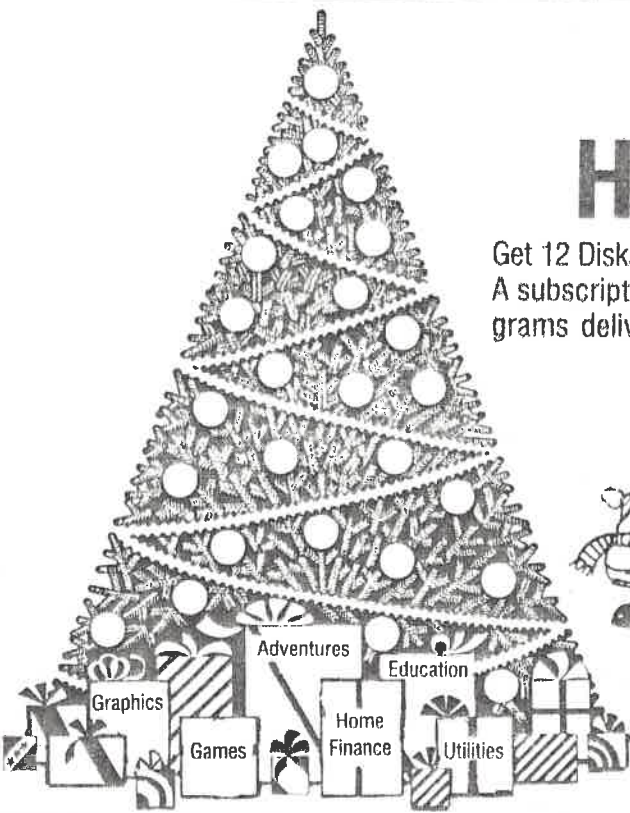SEND $1.00 TO: TRS-80 COMPUTING, 65 OAK ROAD, CANTON, MA. 02021

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