April
1984

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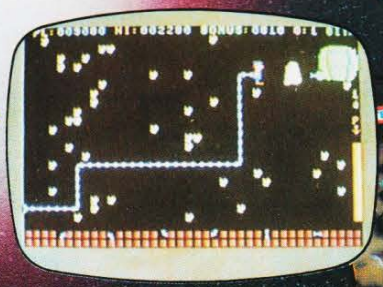

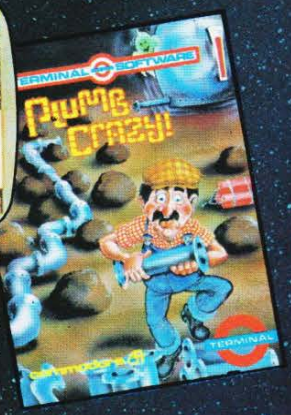

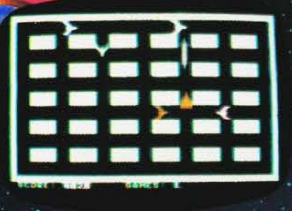

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21's the name of this game — always a favourite with you computer games players.

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Now you get your chance to tell everyone about your pet likes and dislikes.

The Final Frontier . . . . . **VIC 20 29**
Captain Kirk has nothing to do with this game. Not only will you get lost in space, you'll also probably end up floating up there with your VIC forever!

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With some great new software from Melbourne House, who've already given you such good programs as the Hobbit.

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COMPETITION
WIN a Colecovision **44**
This fantastic is yours for the taking — providing you enter and come out tops of this competition.

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Head an invasion in your own sitting room — with a little help from your VIC.

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Suncom's giving away some of their top of the range joystick in this competition. Don't miss it if you are after a new or better joystick to play with.

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Our interpid software assistant has been finding out about the ultimate computer adventure game — MUD.

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Video Games galore — what's in store reviewed for you.

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Casino

RUNS ON TRS-80 COLOUR

"Casino" is based on Pontoon, the old favourite enjoyed by Dad's and Grandad's of all ages. "Casino" is an up-dated version of the game which will be enjoyed by all ages. Maybe Dad will find that he will "lose his shirt" to his sons.

The game is played with the thrill and excitement which Monte Carlo creates with the player pitting his skill and cool head against the cold logic of the Banker.

The program is created so that the player has a certain amount of cash and time in which to break the Bank, these can be set at various levels, according to the skill which the player possesses — or at least thinks he does!!!

The writer promises that the computer chooses its cards without reference to those held by the player — honest!!!

RUNdown

Line	Action
10-150	Title page.
160-600	Instruction.
610-930	Select level.
940-1010	Initilize variables.
1020-1060	Deals one card.
1070-1400	Sets up screen.
1410-1450	Draws outline of card.
1460-1570	Controls are drawing of cards.
1580-1630	Controls the dealing, drawing and playing of your cards.
1640-1960	Updates total of cards.
1970-2070	Checks for bust, pontoon, five card trick etc.
2080-2210	Draws score.
2220-2410	Select Twist or stick.
2420-2460	Twist routine.
2626-2690	Stick routine.
2700-2760	Five card trick routine.
2770-2860	Pontoon routine.
2870-3110	Computers Hand.
3120-3380	Ask for stake sub-routine.
3390-3880	End of hand routine.
3890-4020	Run out of time routine.
4030-4160	Run out of money routine.
4170-4130	Broke the bank routine.
4320-4410	End of start again routine.

Conversion Clues

This program should run as it stands on the Tandy Colour Computer with 32K RAM and extended Basic or a Dragon 32.

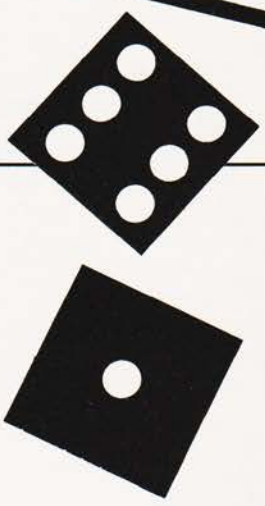
If you convert the program for any other computer, take into account the following points.

1. The text screen resolution is 32 × 16. The graphics work on a grid of 256 × 192. All the writing on the graphics screen is DRAW, on most micros it can be printed.
2. The PMODE and SCREEN commands are used to switch from the text to the graphics screen.
3. The DRAW command draws as directed by a string of instructions e.g. U = up. This command also allows things to be scaled up or down by using 'Sx' where X is the factor, by which it is scaled, divided by 4, e.g. a scale of 4 is normally size.
4. The Paint commands fills an area of screen with a certain colour. The colour command changes the colour of the line command which can draw lines, boxes and filled boxes.

List of Main Variables

Name$:	Holds the name of the player.
ET:	Holds the level of play.
A(52):	Holds a record of the cards which are on the screen. The array is used to stop a card appearing more than once.
COM(5):	Holds the values of the computers five cards. Not all the cards are used most of the time.
T(2,2):	Holds the total of both your hand and the computers. And indicates Pontoons, five card tricks etc.
BANK	Holds the amount of money in the bank.
TS:	The money you have.
CARD$:	Use the DRAW command to draw the outline of card on the screen.
R:	Used to tell sub-routines if they are dealing with your cards or the computers cards.
z:	Set to 1 for your cards. Set to 2 for computers cards.
C:	Holds the number of cards.
TWIST	Holds the suite of the card. The number of times you have twisted.
TIME/HOURS MINUTE-S/TR)	These four contain information on the time you have been playing and how long until the Casino closes.

Casino



```
10 REM**start**********
20 CLS
30 PRINT@33,"*******************************";
40 PRINT@65,"*******************************";
50 FORX=65TO449STEP32
60 PRINT@X,"**";
70 PRINT@X+28,"**";
80 NEXTX
90 PRINT@417,"*******************************"
100 PRINT@449,"*******************************"
110 PRINT@173,"casino";
120 PRINT@228,"BY I.C.SELLMAN";
130 PRINT@292,"MARCH 1983";
140 PLAY"V31CDEFGABAGFEDC"
150 CLEAR500
160 CLS
170 PRINT@11,"casino";
180 PRINT@43,"******";
190 PRINT@224,;:INPUT"ENTER YOUR NAME AND PRESS       'ENTER'";NAME$
200 IF LEN(NAME$)>5 OR LEN(NAME$) 10 THEN SOUND1,10:GOTO 190
210 SOUND200,5
220 PRINT@224,"          HELLO ";NAME$;".","WOULD YOU LIKE THE INSTRUCTIONS (Y/N)
."
230 A$=INKEY$:IF A$="" THEN 230
240 IF A$="Y" THEN SOUND 200,5:GOSUB 280:GOTO630
250 IF A$="N" THEN SOUND 200,5:CLS0:GOTO630
260 SOUND1,10
270 GOTO230
280 REM**instructions*********
290 CLS
300 GOSUB550
310 PRINT@97,"THE IDEA OF THIS GAME IS TO WINAS MUCH MONEY AS YOU CAN AT THE BLA
CKJACK TABLE IN THE CASINO.  YOU CAN BET ONE, TWO, THREE,    FOUR OR FIVE HUNDRE
D POUNDS ON  ANY ONE HAND. YOU HAVE FROM THE TIME YOU ENTER THE CASINO TO    MID
NIGHT TO TRY
320 PRINT@336,"TO BREAK THE    BANK WHICH CONTAINS 10000 POUNDSAT THE START OF T
HE GAME."
330 GOSUB580
340 GOSUB550
350 PRINT@97,"AT THE START OF EACH HAND YOU  ARE DEALT YOUR FIRST CARD AND   THE
N ASKED TO PLACE YOUR BET.   THEN YOU ARE DEALT YOUR SECOND  CARD. AFTER THAT YO
U CAN PRESS   'T' TO TWIST OR 'S' TO STICK.   THE NORMAL BLACKJACK RULES APPLY.AF
TER YOU STIC"
360 PRINT"K THE COMPUTER   PLAYS ITS CARDS THEN TELLS YOU  WHO HAS WON AND THE C
URRENT     STATE OF YOUR MONEY";
370 GOSUB580
380 GOSUB550
390 PRINT@97,"AT THE END OF EACH HAND YOU CANPRESS:"......" 1) 'I'  FOR INSTRUCT
IONS"..." 2) 'E'  TO END GAME"..." 3) 'R'  TO START AGAIN";
400 GOSUB580
410 GOSUB550
420 PRINT@97,"PRESS 'B' FOR BLACKJACK RULES.";
430 PRINT@449,"PRESS A KEY TO CONTINUE";
440 A$=INKEY$
450 IF A$="" THEN 440
460 IF A$<>"B"THEN RETURN
470 CLS
480 SOUND200,5
490 PRINT@10,"BLACKJACK";
500 PRINT@42,"*********";
510 PRINT@96," THE AIM IN BLACKJACK IS TO GET THE TOTAL OF YOUR CARDS TO AS   NE
AR TWENTYONE AS YOU CAN WITH  OUT GOING OVER TWENTYONE.IF YOU HAND IS AN ACE AND
 A PICTURE    CARD OR A TEN THEN YOU HAVE     FONTOON.IF YOU HAVE FIVE CARDS  WH
ICH TOTAL LE"
520 PRINT"SS THAN TWENTYONE THEN YOU HAVE A FIVECARD TRICK  WHICH CAN ONLY BE BE
ATEN BY     FONTOON";
530 GOSUB580
540 RETURN
550 PRINT@8,"INSTRUCTIONS";
560 PRINT@40,"************";
570 RETURN
580 PRINT@481,"PRESS A KEY TO CONTINUE";
590 IF INKEY$=""THEN 590
600 SOUND150,5
610 CLS
620 RETURN
630 REM**level****
640 CLS
650 PRINT@11,"LEVEL";
660 PRINT@43,"*****";
670 PRINT@97,"1) BEGINNER"
680 PRINT@161,"2) INEXPERANCED";
690 PRINT@225,"3) AVERAGE";
700 PRINT@289,"4) GOOD";
710 PRINT@353,"5) EXPERT";
720 PRINT@449,"ENTER THE NUMBER OF THE SKILL  LEVEL YOUR WISH (1 TO 5)";
730 ET#=INKEY$
740 IF ET#="" THEN 730
750 ET=VAL(ET#)+6
760 IF ET<7 OR ET>11 THEN SOUND 1,10:GOTO730
770 SOUND200,5
780 CLS
790 PRINT@11,"CASINO";
800 PRINT@43,"******";
810 PRINT@128,"      WELL ";NAME$;
820 IF ET=7 THEN PRINT@193,"YOU CHOSE THE BEGINNER'S LEVEL ARE YOUR SURE IT WON'
T BE TOO   EASY?"
830 IF ET=8 THEN PRINT@193,"YOU CHOSE THE INEXPERANCED     LEVEL IS THAT WHAT YO
U WANT?"
840 IF ET=9 THEN  PRINT@193,"YOU CHOSE THE AVERAGE LEVEL    ARE YOU SURE YOU ARE
 MR.AVERAGE";
850 IF ET=10THEN PRINT@193,"YOU THINK YOUR GOOD HEY? ";
860 IF ET=11THEN  PRINT@193,"SO YOU THINK YOUR AN EXPERT DO YOU' WELL I HOPE YOU
 ARE TELLING THE TRUTH.";
870 PRINT@449,"DO YOU WISH TO CHANGE YOUR MINDNOW (Y/N)?";
880 A$=INKEY$
890 IF A$="" THEN880
900 IF A$="Y" THEN SOUND200,5:GOTO630
910 IF A$="N" THEN SOUND200,5:GOTO940
920 SOUND1,10
930 GOTO880
940 CLS0
950 TIMER=0
960 DIMA(52)
970 DIM COM(5)
980 DIM T(2,2)
990 BANK=10000
1000 TS=5000
1010 GOTO1580
1020 REM card select**************
1030 CARD=RND(52)
1040 IF A(CARD)=1 THEN1030
1050 A(CARD)=1
1060 RETURN
1070 REM screen set up ************
1080 PMODE3,1:PCLS
1090 PCLS2
1100 LINE(5,5)-(251,187),PSET,B
1110 PAINT(0,0),4,4
1120 LINE(0,96)-(256,96),PSET
1130 DRAW"BM15,15;C3S4;U4H2F2E2BM+4,+6"
1140 DRAW"BM+1,+0;C3S4;R2EU4HL2GD4FBM+7,+0"
1150 DRAW"BM+0,-6D5FR2EU5BM+4,+6"
1160 DRAW"U6R3FDGL3RF3BM+4,+0"
1170 DRAW"BM+6,0"
1180 DRAW"BM+1,+0HU4ER2FHL2GD4FR2EBM+4,+1"
1190 DRAW"U5ER2FD5U3L4BM+8,+3"
1200 DRAW"U6R3FDGL3RF3BM+4,+0"
1210 DRAW"U6R3FD4GL3BM+8,+0"
1220 DRAW"BM+0,-1FR2EH4ER2FBM+4,+5"
1230 DRAW"BM15,107U6F2E2D6BM+4,+0"
1240 DRAW"BM+2,+0U4H2F2E2BM+4,+6"
1250 DRAW"BM+6,0"
1260 DRAW"BM+1,+0HU4ER2FHL2GD4FR2EBM+4,+1"
1270 DRAW"U5ER2FD5U3L4BM+8,+3"
1280 DRAW"U6R3FDGL3RF3BM+4,+0"
1290 DRAW"U6R3FD4GL3BM+8,+0"
1300 DRAW"BM+0,-1FR2EH4ER2FBM+4,+5"
1310 FORX= 15 TO107 STEP92
1320 DRAW"BM128,"+STR$(X)+"BM+2,+0U6L2R4BM+4,+6"
1330 DRAW"BM+1,+0R2EU4HL2GD4FBM+7,+0"
1340 DRAW"BM+2,+0U6L2R4BM+4,+6"
1350 DRAW"U5ER2FD5U3L4BM+8,+3"
1360 DRAW"R4L4U6BM+8,+6"
1370 DRAW"BM+0,-2R4BM+0,-2L4BM+8,+4"
1380 NEXTX
1390 SCREEN1,0
1400 RETURN
1410 REM cards*******************
1420 CARD$="R40D60L40U60"
1430 DRAW"BM"+STR$(X)+","+STR$(Y)+";C1"+CARD$
1440 PAINT(X+5,Y+5),1,1
1450 RETURN
1460 REM deal cards*************
1470 FORY=25TO 92+25 STEP92
1480 FORX=10TO60 STEP50
1490 GOSUB1020
1500 IFY=25 THEN SOUND150,5 ELSE SOUND 200,5
1510 GOSUB1410
1520 IFX=10 THEN M=1 ELSE M=2
1530 IF Y=25  THEN  GOSUB1650:DRAW"S4":GOSUB1860 ELSE COM(M)=CARD
1540 GOSUB1980
1550 IF X= 10 AND Y=25 THEN GOSUB 3130
1560 NEXT X,Y
1570 RETURN
1580 REM
1590 REMcontrol*******************
1600 GOSUB1070:REMscreen set-up
1610 GOSUB1460:REMdeal cards
1620 R=1
1630 GOSUB2090
1640 GOSUB2430
1650 REM draw cards ii
1660 IF CARD= 1 THEN Z=0
1670 Z=INT((CARD-1)/13)
1680 IF Z=0 OR Z=1 THEN C=3 ELSE C=4
1690 DRAW"BM"+STR$(X+20)+","+STR$(Y+30)+";C"+STR$(C)+"S16"
1700 ON CARD-Z*13 GOTO 1710,1720,1730,1740,1750,1760,1770,1780,1790,1800,1810,18
20,1830
1710 DRAW"BM+2,+2L4UER2EU2HL2GBM+10,+5":RETURN
1720 DRAW"BM-2,+1FR2EUHL2R2EUHL2GBM+8,+5":RETURN
1730 DRAW"BM+1,+2U6G3R4BM+4,+3":RETURN
1740 DRAW"BM-2,+1FR2EU2HL3U2R4BM+4,+6":RETURN
1750 DRAW"BM-2,+0ER2FDGL2HU4ER2FBM+4,+5":RETURN
1760 DRAW"BM+0,+2U2E2U2L4BM+8,+6":RETURN
1770 DRAW"BM-1,+2R2EUHL2HUER2FDGL2GDFBM+7,+0":RETURN
1780 DRAW"BM-2,+1FR2EU4HL2GDFR3BM+4,+3":RETURN
1790 DRAW"BM-2,+1FR2EU5":RETURN
1800 DRAW"BM-1,+2R2EU4HL2GD4FBM+1,-2F2":RETURN
1810 DRAW"BM-2,+2U6BM+0,+3RE3G3F3":RETURN
1820 DRAW"BM-2,+2U5ER2FD5U3L4":RETURN
1830 DRAW"BM-3,+2U6GBM+4,+4FR2EU4HL2GD4":RETURN
1840 DRAW"BM-2,+1FR2EU4HL2GD4BM+8,+1":RETURN
1850 DRAW"BM-1,+2U6GBM+6,+5":RETURN
1860 ON Z+1 GOTO 1870,1880,1890,1900
1870 A$="DL2D3L2D2R3D2RU2R3U2L2U3L2":GOTO1910
1880 A$="DG5R5D2U2R4H4":GOTO1910
1890 A$="F5G5H5E5":GOTO1910
1900 A$="BM+2,+3H4D2F3H3U2G2F5E5H2D3U3G3":GOTO1910
1910 FORA= 1TO 2
1920 IF A=1 THEN X1=X+7:Y1=Y+2
1930 IF A=2 THEN X1=X+33:Y1=Y+48
1940 DRAW"BM"+STR$(X1)+","+STR$(Y1)+"C"+STR$(C)+A$
1950 PAINT(X1,Y1+5),C,C
1960 NEXTA
1970 RETURN
1980 REM card total**************
1990 Z=INT((CARD-1)/13)
2000 C=CARD-(Z*13)
2010 IF Y=25 THEN R=1 ELSE R=2
2020 IF C=12 THEN GOSUB 2060:GOTO2050
2030 IF C=13 OR C=11 OR C=10 OR C=9 THEN T(R,1)=T(R,1)+10:GOTO2050
2040 T(R,1)=T(R,1)+C+1
2050 RETURN
2060 T(R,1)=T(R,1)+11
2070 T(R,2)=T(R,2)+1
2080 RETURN
2090 REMcheck*****************
2100 IF T(R,1)>21 ANDT(R,2)>0 THEN2140
2110 IF PN=0 THEN IF T(R,1)=21 AND TW=0 THEN GOTO2780
2120 GOSUB2230
2130 IF PN =1 THEN RETURN
2140 IF T(R,1)=<21 THEN RETURN
2150 IF T(R,2)>0 THEN2340
2160 FORL=4TO1STEP-1
2170 COLORL,L
2180 LINE(25,35+92*(R-1))-(210,80+92*(R-1)),PSET,BF
2190 DRAW"BM30,"+STR$(80+92*(R-1))+"C4S26BM+0,-1U5R3FDGFDGL3U3R3BM+5,-3D5FR2EU5B
```

```
M+4,+5FR2EH4ER2FBM+6,+5U6L2R4BM+4,+6
2200 PLAY"V31L150ABCDGFACBGFFDAEEDFBGACBGFEADBGFFAEAFG"
2210 NEXTL
2220 IF R=1 THEN 3120 ELSE 3400
2230 COLOR2,2
2240 LINE(177,6+92*(R-1))-(240,20+92*(R-1)),PSET,BF
2250 DRAW"BM180,"+STR$(13+92*(R-1))+";C3"
2260 AA$=STR$(T(R,1))
2270 AA=LEN(AA$)
2280 FORP=2TOAA
2290 Q=VAL(MID$(AA$,P,1))
2300 ON Q+1 GOSUB1840,1850,1710,1720,1730,1740,1750,1760,1770,1780
2310 DRAW"BU2"
2320 NEXTP
2330 IF T(R,2)<>1 THEN RETURN
2340 IF T(R,1)>21 THEN T(R,1)=T(R,1)-10:T(R,2)=T(R,2)-1:GOTO2230
2350 IF F=1 THEN F=0:RETURN
2360 DRAW"C4"
2370 DRAW"BM+4,+2R2EU4HL2GD4FBM+7,+0U6R3FDGL3RF3BM+8,-2"
2380 AA$=STR$(T(R,1)-T(R,2)*10)
2390 F=1
2400 DRAW"C3"
2410 GOTO2270
2420 RETURN
2430 IK$=INKEY$
2440 IF IK$="" THEN2430
2450 IF IK$="T" THEN GOSUB2480
2460 IF IK$="S" THEN 2630
2470 GOTO2430
2480 REM twist
2490 TWIST=TWIST+1
2500 SOUND 150,5
2510 IF TWIST>3 THEN 2710
2520 X=60+48*TWIST
2530 IF R=1 THEN Y=25 ELSE Y=25+92
2540 GOSUB1020
2550 GOSUB1410
2560 GOSUB1650
2570 DRAW"S4"
2580 GOSUB1860
2590 GOSUB1980
2600 GOSUB2090
2610 IF TWIST>2 THEN 2710
2620 RETURN
2630 REMstick
2640 T(R,2)=0
2650 GOSUB2090
2660 IF T(1,1)<14 THEN2430
2670 DRAW"C4BM100,"+STR$(93+92*(R-1))+"FR2EH4ER2FBM+6,+5U6L2R4BM+6,+6R2L4R2U6L2R
4BM+5,+6HU4ER2FHL2GD4FR2EBM+4,+1U6BM+0,+3RE3G3F3"
2680 SOUND150,5
2690 IF R=2 THEN GOTO3120
2700 GOTO2880
2710 REMfive-card trick
2720 T(1,2)=2
2730 DRAW"C3BM80,"+STR$(93+92*(R-1))+"U3R4L4U3R4BM+6,+6R2L4R2U6L2R4BM+4,+0D4F2E2
U4BM+4,+6R4L4U3R4L4U3R4BM+11,+6HU4ER2FHL2GD4FR2EBM+4,+1U5ER2FD5U3L4BM+8,+3U6R3FD
GL3RF3BM+4,+0U6R3FD4GL3BM+16,+0U6L2R4BM+4,+6U6R3FDGL3RF3BM+6,+0R2L4R2U6L2R4"
2740 DRAW"BM+5,+6HU4ER2FHL2GD4FR2EBM+4,+1U6BM+0,+3RE3G3F3"
2750 S(R)=1
2760 SOUND150,5
2770 IF R=1THEN 2880 ELSE 3120
2780 REM***pontoon***
2790 IF R=1 THEN Z=94 ELSE Z=186
2800 DRAW"BM100,"+STR$(Z)+"C3U6R3FDGL3BM+9,+3R2EU4HL2GD4FBM+7,+0U6F6U6BM+6,+6U6L
2R4BM+5,+6R2EU4HL2GD4FBM+8,+0R2EU4HL2GD4FBM+7,+0U6F6U6
2810 T(R,2)=0
2820 S(R)=1
2830 PN=1
2840 SOUND150,5
2850 GOSUB2090
2860 PN=0
2870 IF R=2 THEN 3420
2880 REMcom cards
2890 FORD=1TO1000:NEXTD
2900 FORX=10TO60 STEP50
2910 IF X=10 THEN M=1 ELSE M=2
2920 CARD=COM(M)
2930 TW=0
2940 R=2
2950 Y=92+25
2960 SOUND200,5
2970 GOSUB1650
2980 DRAW"S4"
2990 GOSUB1860
3000 NEXTX
3010 GOSUB2090
3020 R=2
3030 IF T(2,1)<16 THEN GOSUB2480
3040 IFT(2,1)>15 AND T(2,1)<18 THEN 3060
3050 GOTO3080
3060 RN=RND(3)
3070 IF RN =1 THEN GOSUB2480 ELSE 3110
3080 IF T(2,1)>17 THEN GOTO3100
3090 GOTO3030
3100 '
3110 GOSUB2630
3120 GOTO3400
3130 REM ask for stake
3140 DRAW"BM120,50 C3R4L4U3R4L4U3R4BM+4,+6U6DF4DU6BM+6,+6U6L2R4BM+4,+6R4L4U3R4L4
U3R4BM+4,+6U6R3FDGL3RF3BM+4,+0"
3150 DRAW"BM+6,-1FR2EH4ER2FBM+6,+5U6L2R4BM+4,+6U5ER2FD5U3L4BM+8,+3U6BM+0,+3RE3G3
F3BM+4,+0R4L4U3R4L4U3R4BM+4,+6"
3160 A#=INKEY$
3170 IF A#="" THEN3160
3180 STAKE=VAL(A$)
3190 IF STAKE<1 OR STAKE>5 THEN SOUND1,10:GOTO 3160
3200 SOUND200,5
3210 FORD=1TO100:NEXTD
3220 FOR F=1 TO 3
3230 SOUND150,1
3240 DRAW"C4BM130,70S16"
3250 ON STAKE GOSUB  1850,1710,1720,1730,1740
3260 DRAW"S8BM-2,+0S16"
3270 FORD=1TO2
3280 DRAW"BM+0,-1FR2EU4HL2GD4BM+8,+1"
3290 NEXTD
3300 FORD=1TO100:NEXTD
3310 COLOR2,2
3320 LINE (120,53)-(230,90),PSET,BF
3330 FORD=1TO100:NEXTD
3340 FORD=1TO100:NEXTD
3350 NEXTF
3360 DRAW"BM150,60S4"
3370 COLOR2,2
3380 LINE(115,40)-(220,60),PSET,BF
3390 RETURN
3400 REMend
3410 FORD=1TO 1000:NEXTD
3420 FORQ=1TO2:IFS(Q)<>0 THEN3500
3430 NEXTQ
3440 IF T(1,1)>21 THEN WINNER=1:GOTO3530
3450 IF T(2,1)>21 THEN WINNER=2:GOTO3530
3460 IF T(2,1)=T(1,2)THEN WINNER=1
3470 IF T(2,1)<T(1,1)THEN WINNER=2
3480 IF T(2,1)>T(1,1)THEN WINNER=1
3490 GOTO3530
3500 IF S(1)<S(2)THEN WINNER=1
3510 IF S(1)=S(2)THEN WINNER=1
3520 IF S(1)>S(2)THEN WINNER=2
3530 IF WINNER=1THEN A$="SORRY "+NAME$+"!":B$="THE COMPUTER WON THAT HAND"
3540 IF WINNER=2THEN A$=NAME$:B$="YOU WON THAT HAND"
3550 TIME=INT(TIMER*20/3000)
3560 HOURS=INT(TIME/60)+ET
3570 MINUTES=INT(TIME-(HOURS-ET)*60)
3580 IF INT(MINUTES/10)*10=MINUTES THEN MINUTES=MINUTES+1
3590 TIME=HOURS+MINUTES/100
3600 TR=11-HOURS+(60-MINUTES)/100
3610 SCREEN0,0
3620 IF WINNER=1 THEN TS=TS-STAKE*100:BANK=BANK+STAKE *100
3630 IF WINNER=2 THEN TS=TS+STAKE*100:BANK=BANK-STAKE*100
3640 IF BANK=0 THEN E=1
3650 IF TS=0 THEN E=2
3660 Z$=INKEY$
3670 CLS
3680 PRINT@13,"casino";
3690 PRINT@45,"******";
3700 PRINT@97,A$,,B$;
3710 PRINT@192,"YOU HAVE";TS;"POUNDS";
3720 PRINT@224,"THE BANK CONTAINS";BANK;"POUNDS";
3730 PRINT@321,"THE TIME IS";TIME;"PM THERE IS   ONLY";TR;"UNTIL THE TABLES CLOS
E"
3740 PRINT@449,"PRESS ANY KEY FOR NEXT HAND    EXCEPT 'I', E  OR 'R'.";
3750 IF TR=<0 THEN FOR D=1TO1000:NEXTD:SOUND50,20:GOTO3900
3760 IF TS<=0 THEN FOR D=1 TO1000:NEXTD:SOUND50,20:GOTO4040
3770 IF BANK<=0 THEN FOR D=1TO1000:NEXTD:SOUND50,20:GOTO4180
3780 AN$=INKEY$:IF AN$="" THEN 3780
3790 IF AN$="I"THENGOSUB290
3800 IF AN$="R" OR AN$="E" THEN GOSUB 4320
3810 CLS0
3820 GOTO3830
3830 T(1,1)=0:T(1,2)=0:T(2,1)=0:T(2,2)=0
3840 FORX=1TO52:A(X)=0:NEXTX
3850 FORX=1TO5:COM(X)=0:NEXTX
3860 TW=0
3870 PN=0
3880 S(1)=0:S(2)=0
3890 GOTO1590
3900 REM **time up**************
3910 CLS
3920 PRINT@11,"casino";
3930 PRINT@43,"******";
3940 PRINT@100,"BAD LUCK ";NAME$;"!","THE TABLES ARE NOW CLOSING YOU  WINNINGS A
MOUNT TO";TS;"YOU DID NOT BREAK THE BANK BY";BANK;"    POUNDS."
3950 FOR D=0 TO31
3960 PRINT@384+D,CHR$(140);
3970 NEXTD
3980 PRINT@449,"WOULD YOU LIKE TO RETURN       TOMORROW NIGHT (Y/N).";
3990 A$=INKEY$
4000 IF A$="" THEN 3990
4010 IF A$="Y" THEN SOUND200,5:RUN
4020 IF A$="N" THEN SOUND200,5:CLS:END
4030 SOUND1,10:GOTO3980
4040 REM**run out of money******
4050 CLS
4060 PRINT@11,"casino";
4070 PRINT@43,"******";
4080 PRINT@100,"BAD LUCK ";NAME$;" !",,,"YOU RAN OUT OF MONEY AND SINCE  WE ALLO
W NO CREDIT YOU MUST NOW LEAVE",,,," THE TIME IS";TI;"PM",,,,"GOOD NIGHT";
4090 PRINT@417,"WOULD YOU LIKE TO RETURN       TOMORROW NIGHT WITH SOME MORE   M
ONEY (Y/N).";
4100 FOR D=0 TO31
4110 PRINT@384+D,CHR$(140);
4120 NEXTD
4130 A$=INKEY$
4140 IF A$="" THEN 4130
4150 IF A$="Y" THEN SOUND200,5:RUN
4160 IF A$="N" THEN SOUND200,5:CLS:END
4170 SOUND1,10:GOTO4040
4180 REM**broke the bank********
4190 CLS
4200 PRINT@11,"casino";
4210 PRINT@43,"******";
4220 PRINT@100,"WELL DONE ";NAME$" !",,," YOU HAVE MANAGED TO BREAK THE  BANK NO
W YOUR WINNINGS TOTAL    15000 POUNDS",,,,"THE TIME IS NOW";TI;" PM.",,,,"GOOD N
IGHT";
4230 FOR D=0 TO31
4240 PRINT@384+D,CHR$(140);
4250 NEXTD
4260 PRINT@417,"WILL YOU GIVE US A CHANCE TO   WIN SOME MONEY BACK TOMOOROW    N
IGHT (Y/N).";
4270 A$=INKEY$
4280 IF A$="" THEN GOTO4270
4290 IF A$="Y" THEN SOUND200,5:RUN
4300 IF A$="N" THEN SOUND 200,5:CLS:END
4310 SOUND1,10:GOTO4180
4320 CLS
4330 PRINT@11,"CASINO";
4340 PRINT@43,"******";
4350 PRINT@225,"ARE YOU SURE (Y/N) ?";
4360 INPUTA$
4370 IF AN$="E" AND A$="Y" THEN SOUND200,5: CLS:END
4380 IF AN$="R"AND A$="Y" THEN SOUND200,5 :RUN
4390 IF A$="N" THEN SOUND200,10:RETURN
4400 SOUND1,10
4410 GOTO4320
4420 END
```

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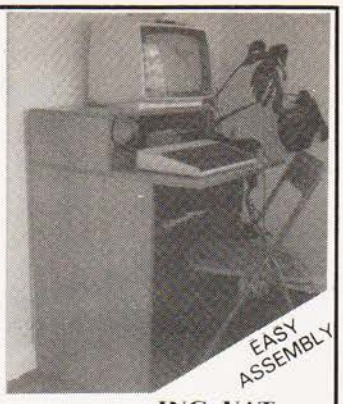

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PICTURE PUZZLE (DRAGON 32)
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VOYAGER (VIC 20 8 OR 16K)
The mission is simple, but its completion is far from being so. As captain of starship you have all the best facilities at your disposal. Unfortunately the klingons oppose you. A great M/C version of this classic computer game.

SPHINX (VIC 20 16K)
A riveting, full colour graphic adventure. That pits you against the spells and guardians of the tomb. In your quest to uncover the treasure of the pharoahs. This game will have you enthralled.

BIRD OF PREY (BASIC VIC 20)
Evil baron von fritz is out to kill his cousin, the much loved Prince Rupert. The Baron intends to throw the prince from his plane into the sacred fire pit. But you the eagle of the north will make every endeavour to save your friend Prince Rupert. With colour, sound, this M/C game is a must.

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Adam Arrives at last

The CBS Colecovision is to be expanded into a full blown computer system soon, with the addition of the Adam.

Expansion Module 3 turns the Colecovision into an Adam microcomputer. The Adam has 64K of RAM, a full typewriter keyboard, a built-in high speed cassette drive, and an 80 column daisywheel letter quality printer.

The computer is supplied with Smart BASIC on tape and a game, also on tape. A word processor is built in to use the printer.

The computer consists of three parts, the printer, the keyboard which is detached on a coiled cable, and the central processor box which contains the extra 64K and the tape drive.

The computer will be able to support another tape drive and possible a disc drive.

The central processor box plugs into the expansion slot on the front of the Colecovision game console, giving the system a very large 'footprint', that is it takes up a lot of desk or table space.

A dedicated Adam will be available later on in the year that does not need to be plugged in to the Colecovision and has a much smaller 'footprint' but can still have a slot to take standard cartridges and Adam joysticks. Adam joysticks are the same as the Colecovision sticks except that they are a cream colour.

The stand alone unit and the plug in unit will be totally compatible. No UK price has yet been set but the price in America is about $700.

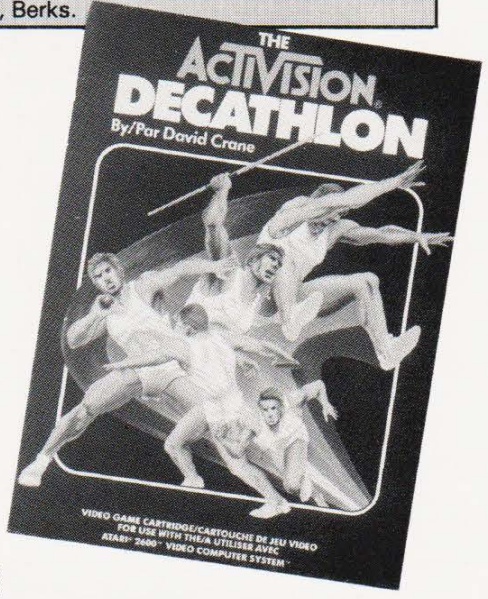
CBS are at Headley Rd East, Woodley, Berks.

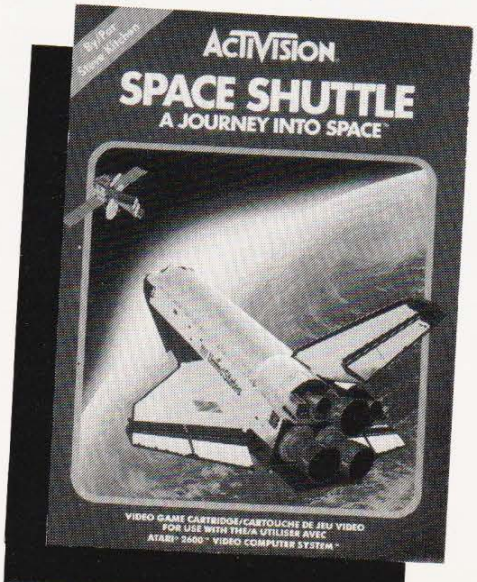
Activision Action

New from Activision for the Atari VCS are Decathlon and Space Shuttle A Journey Into Space.

Decathlon is modelled on the olympic decathlon event. You play the part of a competing athlete. Running is accomplished by moving your joystick back and forth, the faster you move the stick the faster your character moves. Your alter ego is made to jump, throw and pole vault by pressing the fire button.

The events that you have to compete in are 100m, 400m, 1500m, 110m hurdles, javalin, shot put, long jump, high jump, pole vault, and discus. The high jump and pole vault are very realistic with the little man doing a flop over the bar and flicking himself over the pole vault bar.





Up to four players can compete with each other for points just like in a real decathlon.

Space Shuttle is a simulation of a space shuttle flight to rendezvous with a satellite and return to earth again.

There are full graphics throughout the flight with a view out of the cockpit window. Half the screen is taken up with instrumentation.

Activision are also releasing their best selling River Raid for the Mattel Intellivision and Beam Rider for the CBS Colecovision.

All Activision cartridges are £29.95 except those for the Intellivision which retail for £24.95.

Activision are at CGL House, Golding Hill, Loughton, Essex 1G10 1RR.

news news news

Sinclair and Oric Up-grades

Lots of new machines have been released recently. Sinclair have brought out the long awaited QL computer and Oric have re-engineered the Oric and called it the Oric Atmos.

The QL is aimed at the BBC market at £399 and comes with 128K of RAM, a real keyboard, twin microdrives, 512 by 256 graphics resolution in four colours, or 256 by 256 resolution in eight colours with flashing, and two joystick ports are included as standard but need an adaptor.

A new version of Sinclair BASIC called Super BASIC is in the QL taking up 32K. There is also a ROM cartridge port for the QL that is similar to the Spectrum Interface Two cartridge port but it will not accept the same cartridges.

Oric have set their sights slightly lower with the Atmos. At £170 this machine falls between the Spectrum and the Commodore 64, price wise. The only external difference between the Atmos and the Oric is the case. The top of the Atmos has a real full stroke keyboard that has a very nice feel to it. The colour has changed to a tasteful black with a garish red trim.

The BASIC has altered clearing up the bugs that have caused a lot of problems with the original Orics and bringing in improved cassette operation with the saving and recall of DATA on to tape, a PRINT AT command and controlled auto repeats on the keyboard. The Oric manual has also been totally re-written by an independent author.

To coincide with the Atmos launch, the new re-styled disc drives were announced. Also 'dressed' in black with red trim the drives work with the Hitachi three inch format, and include a full disc operating system to use files on the disc effectively with 13 new commands.

The Oric printer has also been given a new lease of life and now comes in the Atmos colours, but is otherwise identical to the Oric printer.

The Oric 1 will no longer be manufactured. You can contact Oric at Coworth Park, London Rd, Ascot, Berkshire SL5 7SE Sinclair are at 23 Motcomb St, London SW1 X1B.

Colecovision Extras

CBS have announced some new add-ons for the best selling Colecovision system.

The Atari adaptor box is now on shop shelves after a long delay following court proceedings involving CBS and Atari. The box plugs in the expansion port and has all the switches that the Atari VCS/2600 has such as colour/BW, left and right difficulty, game select, and reset. It also has two slots for Atari joysticks and of course an Atari catridge slot.

This module turns your Colecovision into an Atari VCS and will run all of the VCS cartridges that are currently in the shops.

Two controllers are due for the release in March. The Super Controller is a device looking like the hilt of a sword with a grip for your hand that has four buttons on it for your fingers, there is a guard that goes over your hand and on top if this is the joystick, a 12 button keypad and a paddle like control knob.

The Roller Controller is a track ball that the standard joysticks plug into. A Roller Controller, or track ball as it is usually called, works by spinning a ball mounted in it in the direction that you wish to go. This technique was first used by Atari in their famous Missile Command arcade game.

Both these controllers have special games written for them, also due out in March, they are Rocky for the Super Controllers, and for the Roller Controller there is Victory and Slither.

Rocky, as its title suggests, is a boxing game featuring a very realistic display of the ring with Rocky against Clubber. Victory is a terrain following Zap the aliens Scramble type of game. Slither, however, is a novel game involving you fighting against snakes, tyrannosaurs, and pterodactyls in a desert.

CBS Electronins are at Headley Rd East, Woodley, Berks.

New Releases . . .

Mission Software have just released a novel game for the 48K Spectrum and the Dragon 32 computers. Called Mission 1 — Project Volcano, the game is a spy adventure game with secret agents battling it out around the eastern bloc.

With the game you get a passport, various maps, briefings, and instructions also included. The idea is to break the secret code used by the baddies.

So if you are interested in becoming a secret agent, Project Volcano is available mail order for £6.95 from Mission Software, Command Headquarters, 1st floor, 49 Grange Rd, Darlington, Co Durham DL1 5NB.

Artic Computing have two new releases for the Spectrum 48K called Monkey Bizness and Bear Bovver.

Monkey Buizness is a 'Kong' based game with the monkey taking our hero's girl up a building. The idea of the game is to get her back. This is not as easy as it sounds as our monkey friend is throwing barrels at you.

Bear Bovver finds you as a bear driving a Sinclair electric buggy. But the car eats up batteries so Ted Bear must be in continual search for batteries for his car. It is not easy to do this though as there are bovver bears out to stop little Ted Bear and if that isn't enough they will set their pet Nasher on to you.

Both games retail at £6.95. Artic are also releasing their much acclaimed adventure series for the Commodore 64. These adventures have previously only been available on the 48K Spectrum.

Artic are at Main St, Brandesburton, Driffield YO25 8RL.

Penetrating Sofware

Penetrator, the best selling Melbourne House Spectrum game, is shortly to be released for the Commodore 64.

The idea of the game is to fly across the enemy's territory avoiding the usual hazards of missiles and other nasties. When you have gone through this you need to destroy an illegal cache of neutron bombs.

One feature of Penetrator is the ability to edit or re-design the terrain to suit your own needs.

Also out from Melbourne House shortly is the long awaited H.U.R.G. which stands for High resolution User friendly Real time Games designer.

As its titles suggests HURG is a program that allows you to design your own machine code games from scratch with no knowledge of machine code.

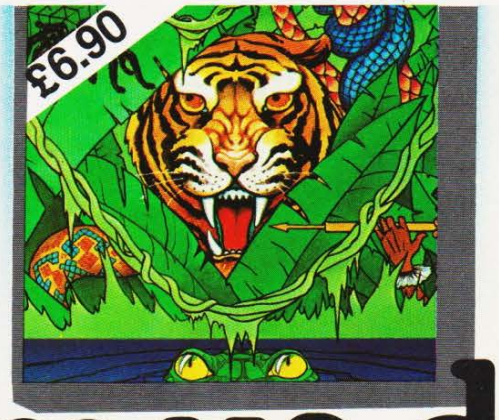
HURG was due to be released last year but extensive modifications and improvements have been made to the original design and Melbourne House say that it is the most advanced utility program of its kind.

Melbourne House are running a £3,000 competition to coincide with the launch for the best program designed with HURG. Details can be obtained from Melbourne House.

The *first* copies of HURG will be given away in *Games Computing's* prize competition this month, which you'll find elsewhere in this issue.

HURG costs £14.95 and Melbourne House are at Castle Yard House, Castle Yard, Richmond TW10 6TF.

"ATTENTION EARTHLINGS...



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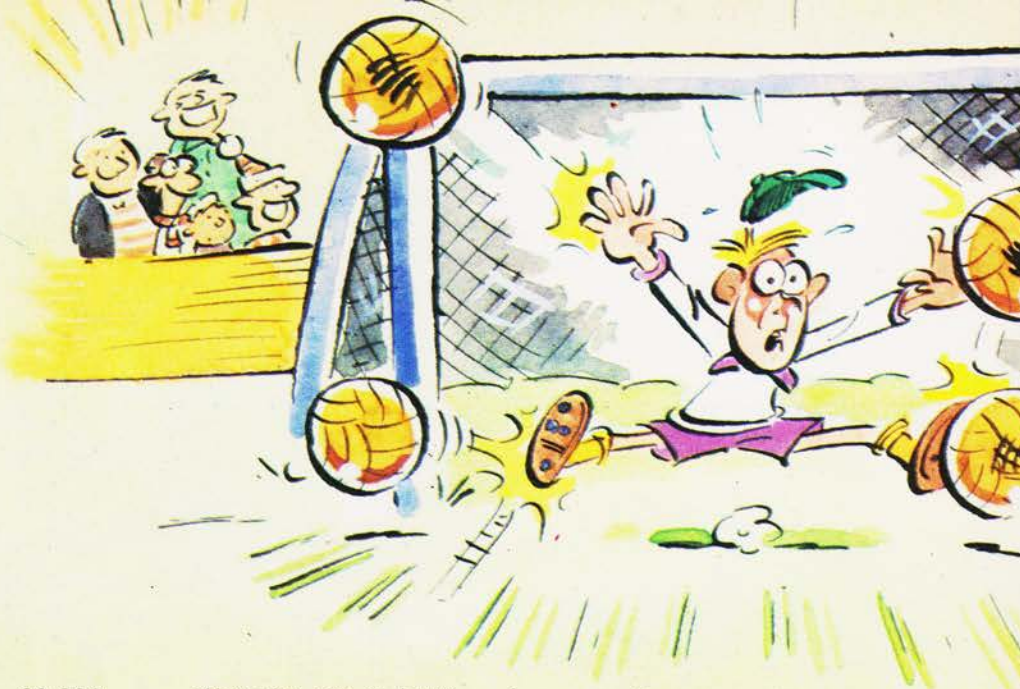


Tired of playing endless space games? Well then plant your feet firmly back on the ground again and play this football game. Your team are through to the European Cup. Unfortunately through your negative tactics you always draw 0-0. Which means the tie has to be settled by penalites, the first team to score five goals going through to the next round. (Where doughtless you will draw 0-0 again!)

When playing the game if the attacker on the screen is blue shirtied you decide whether to kick the ball Right, Left, or Straight ahead by using the >,< and ? keys respectively. The computer will automatically assume the keepers roll. A word of warning you may out gues the keeper but nerves or just plain lack of skill may mean that you miss kick and the ball will sail wide of the goal!

If the attacker is red shirted you on your keepers cloth cap and decide which way you are going to dive using the > ,< and ? keys as before. The computer will not shoot until you have decided which way you are going.

Program Description

Line No.	Function
10-40	Introduce the game if its the first round.
50-60	Sets shirt colour for this cycle.
70-500	Displays pitch,goal,crowd,attacker, ball and stationary keeper.
60-680	Waits for you to input shot direction if its your turn. Or randomly works out the shot direction if you are in goal.
620,680,690	Allows a random miss to occur.
720-980	Waits for you to input dive direction if you are in goal or works it out randomly if you are attacking.
990	Counts cycles.
1000-1090	Checks to see if someone has won if you have to go next round. If computer has game ends.
PROCKRIGHT	moves the keeper to the right.
PROCKLEFT	moves the keeper to the left.
PROCPAUSE (L%)	pauses for a set time.
PROCPITCH	draws white lines on pitch.
PROCBALL	moves ball on screen.
PROCCHECK	checks to see if goal, save or miss has occured sets up appropriate scarf colour if any of those events has occured.
PROCSCARF	displays scarfs in crowd.
PROCMAN	sets up and displays attacker.
PROCBLANK	blanks out stationary keeper and replaces him with background of netting.
PROCSCORE	adds 1 to score if a goal has been scored and displays score at the top of the screen.
PROCTITLE	displays instructions and round number.

RUNS ON BBC/B

Variables Used

x%,Y%,Z%,C%,W%,S%,D%,V%,J%,
T & E = tab positions.

0%,P% =	graphic co-ordinates of the ball.
U% =	counts number of cycles.
ROUND =	round of cup.
K =	U% / 2.
L =	shirt colour.
p =	1 or 2.
MA =	count in repeat loop.
X,Y =	tab co-ordinates of center of goal.
A =	input shot direction.
H =	input dive direction.
J =	random number of calculate shot direction or miss occuring.
M =	random number to calculate keepers direction of movement.
B =	computers score.
N =	your score.
C =	dive direction.
F =	shot direction.
I =	save or goal.
S =	input to continue.

SUGGESTED ADDITIONS

With a knowledge of sound it should be relatively easy to add appropriate noises to the program such as whistle, crowd rattles and a tune on completing a round successfully. So why not have a go it could add to the fun. If you do, let me know.

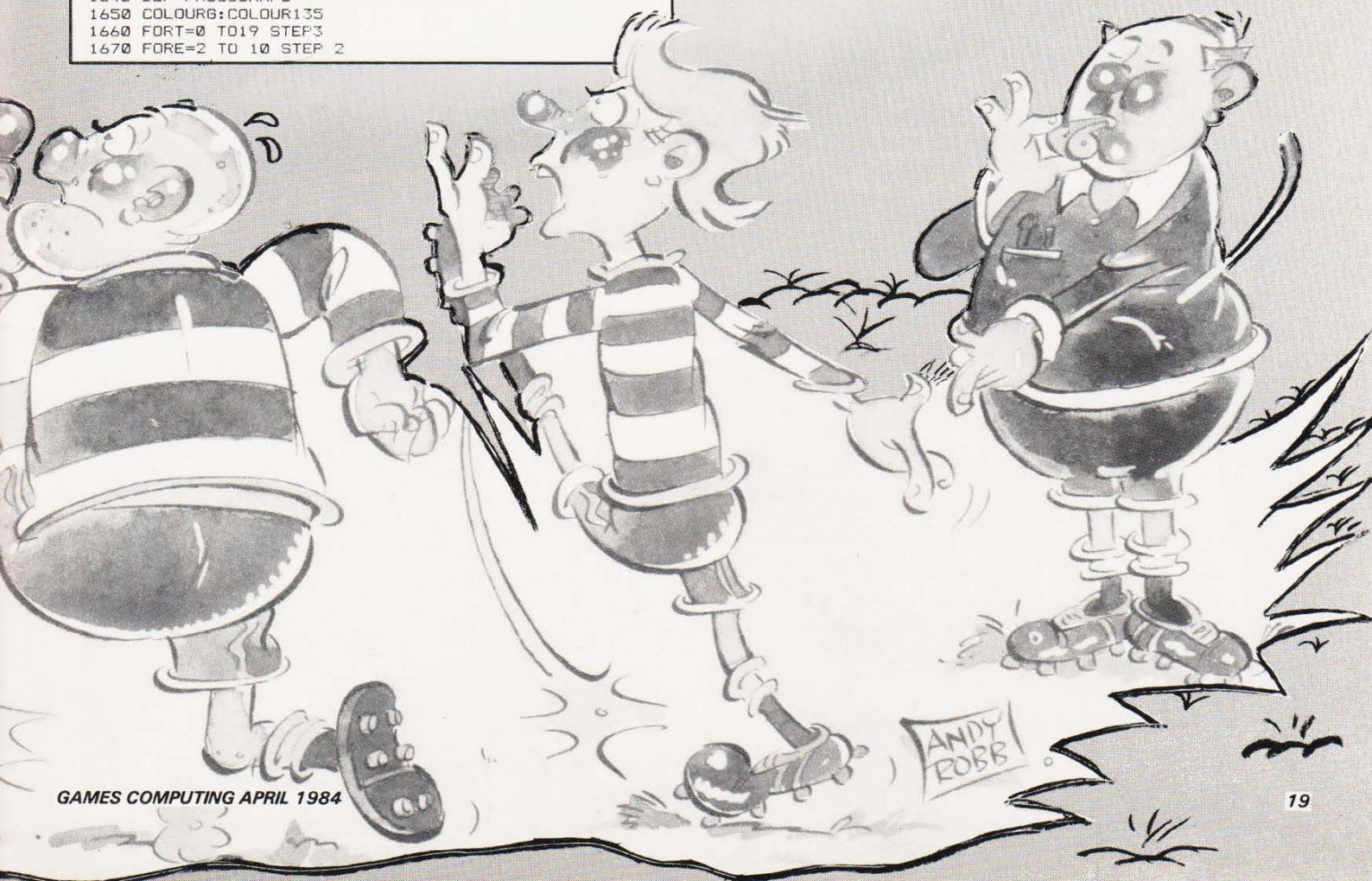
PENALTY

```
 10 ROUND=1
 20 MODE 4
 30 U%=0:B=0:N=0:I=0
 40 PROCTITLE
 50 K=U% MOD 2
 60 IF K=0 L=4 ELSE L=1
 70 MODE2
 80 *FX 15,1
 90 P=1:C=0
100 PROCSCORE
110 P=0
120 VDU4
130 COLOUR7
140 COLOUR128
150 VDU 23,240,24,60,126,219,255,102,60,24
160 FORX%=0TO19
170 FORY%=2TO10
180 PRINT TAB(X%,Y%);:VDU 240
190 NEXT ,
200 COLOUR130
210  FORZ%=0TO19
220 FORC%=15 TO 30
230 PRINT TAB(Z%,C%);:VDU 32
240 NEXT ,
250 COLOUR0
260 COLOUR135
270 FORW%=11TO 14
280 PRINTTAB(5,W%);:VDU 32
290 PRINTTAB(13,W%);:VDU 32
300 NEXT
310 FORS%=5TO13
320 PRINTTAB(S%,11);:VDU32
330 NEXT
340 VDU23,244,255,85,255,85,255,85,255,85
350 FORD%=6TO12
360 FORV%=12 TO 14
370 PRINTTAB(D%,V%);:VDU 244
380 NEXT ,
390 PROCPITCH
400 VDU4
410 VDU23,241,0,0,0,0,0,60,60,24
420 VDU23,242,255,255,189,189,189,60,60,36
430 VDU23,243,36,66,129,66,36,195,0,0
440 COLOUR128:COLOUR3
450 PRINTTAB(9,14);:VDU243
460 PRINTTAB(9,13);:VDU242
470 COLOUR7
480 PRINTTAB(9,12);:VDU241
490 PROCMAN
500 PROCPAUSE(100)
510 VDU23,246,0,0,127,0,0,127,0,0
520 VDU23,247,1,3,255,127,127,255,3,1
530 VDU23,248,252,0,96,224,224,96,0,252
```

```
540 MA=0:X%=9:Y%=14:X=X%:Y=Y%:C=0
550 O%=600:P%=140
560 IF L=1 THEN GOTO620
570  A=INKEY(0)
580  IF A=44 F=-1
590  IF A=46 F=1
600  IF A=47 F=0
610 IF A=-1 THEN GOTO570
620 J=RND(11)
630  IF L=4 THEN GOTO 670
640  IF J<=3 THEN F=1
650  IF J>3 AND J<=6 THEN F=-1
660  IF J>6 AND J<=9 THEN F=0
670  IF J=10 F=2
680  IF J=11 F=-2
690 VDU23,249,0,0,254,0,0,254,0,0
700 VDU23,250,128,192,255,254,254,255,192,128
710 VDU23,251,63,0,6,7,7,6,0,63
720  IF L=4 THEN GOTO790
730 H=INKEY (0)
740  IF H=44 THEN GOTO 820
750  IF H=46 THEN GOTO 880
760  IF H=47 THEN GOTO 940
770  IF H=-1 THEN GOTO730
780  VDU5
790 M=RND(3)
800  IF M=3 THEN GOTO 940
810 IF M=1 THEN GOTO 820ELSE 880
820 REPEAT
830  IF MA=0 THEN PROCBLANK
840 PROCKLEFT
850 PROCBALL
860  UNTIL MA=2
870 GOTO980
880 REPEAT
890  IF MA=0 THEN PROCBLANK
900 PROCKRIGHT
910 PROCBALL
920 UNTIL MA=2
930 GOTO980
940 REPEAT
950 PROCBALL
960 MA=MA+1
970 UNTIL MA=2
980 PROCPAUSE(150)
990 U%=U%+1
1000  IF B=5 OR N=5 THEN GOTO 1020
1010 GOTO50
1020 VDU4
1030  IF N=5 THEN ROUND=ROUND+1 :GOTO 20
1040 VDU4
1050  PRINTTAB(4,16);"GAME OVER"
1060  PRINTTAB(3,18);"YOU LOST ";B;"-";N
1070 PRINTTAB(4,20);"IN ROUND";ROUND
1080  VDU31,0,31
1090 END
1100  DEF PROCKRIGHT
1110 J%=(X%-1)+MA
1120 VDU4,17,0,17,135:PRINTTAB(J%,Y%);:VDU244,17,3,17,
128,246,247,248,5
```

```
 1130 MA=MA+1
 1140  C=2
 1150 ENDPROC
 1160 DEF PROCKLEFT
 1170 J%=(X%-2)-MA
 1180 PRINTTAB(J%,Y%);:VDU 4,17,3,17,128,251,250,249,17
,0,17,135,244,5
 1190 MA=MA+1
 1200 C=1
 1210 ENDPROC
 1220 DEF PROCPAUSE(L%)
 1230  TIME=0
 1240 REPEAT UNTIL TIME=L%
 1250 ENDPROC
 1260 DEF PROCPITCH
 1270  GCOL0,7
 1280 MOVE 250,540
 1290 DRAW 250,450
 1300 DRAW 960,450
 1310 DRAW 960,540
 1320 MOVE 10,540
 1330 DRAW 10,30
 1340 DRAW 1270,30
 1350 DRAW 1270,540
 1360 VDU 23,252,0,0,24,60,60,24,0,0
 1370  MOVE600,140:VDU5,252
 1380 ENDPROC
 1390 DEF PROCBALL
 1400 FOR Y=1 TO 106
 1410  GCOL0,7:MOVE O%,P% :VDU5,252
 1420 PROCPAUSE(2)
 1430 GCOL0,2:MOVE O%,P% :VDU252
 1440 P%=P%+2:O%=O%+F
 1450 NEXT
 1460  GCOL0,7:MOVE O%,P% :VDU5,252
 1470 VDU4
 1480 PROCCHECK
 1490 ENDPROC
 1500 DEF PROCCHECK
 1510  IF P%<564 THEN GOTO1630
 1520  VDU4
 1530 COLOUR5:COLOUR128
 1540  IF F=2 OR F=-2 THEN PRINTTAB(1,1);" HA HA HA HA
HA ":I=2:GOTO 1580
 1550 IF C=1 AND F=-1 OR C=2 AND F=1 OR C=0 AND F=0 THE
N PRINTTAB(1,1);"SAVE ! SAVE ! SAVE!":I=2:GOTO 1580
 1560 PRINTTAB(1,1);"GOAL ! GOAL ! GOAL!"
 1570 I=1
 1580 IF I=2 AND L=1 G=4
 1590 IF I=2 AND L=4 G=1
 1600 IF I=1 AND L=4 G=4
 1610 IF I=1 AND L=1 G=1
 1620 IF P%=564 THEN PROCSCARFS
 1630 ENDPROC
 1640 DEF PROCSCARFS
 1650 COLOUR6:COLOUR135
 1660 FORT=0 TO19 STEP3
 1670 FORE=2 TO 10 STEP 2
```

```
 1680 VDU23,253,237,108,237,108,237,108,237,108
 1690 PRINTTAB(T,E);:VDU253
 1700 NEXT ,
 1710 PROCSCORE
 1720 ENDPROC
 1730 DEF PROCMAN
 1740 VDU23,254,36,36,36,36,36,102,0
 1750 GCOL0,7
 1760 MOVE600,60:VDU5,254
 1770 MOVE600,120:VDU241
 1780 GCOL0,L
 1790 MOVE600,90:VDU242
 1800 VDU4
 1810 ENDPROC
 1820 DEF PROCBLANK
 1830 VDU4,17,0,17,135
 1840 FOR Q=1TO3
 1850 PRINTTAB(X,Y);:VDU244
 1860 Y=Y-1
 1870 NEXT
 1880 ENDPROC
 1890 DEF PROCSCORE
 1900  IF P=1 THEN GOTO1930
 1910  IF L=1 AND I=1 B=B+1
 1920  IF L=4 AND I=1 N=N+1
 1930 VDU4
 1940 COLOUR128:COLOUR4
 1950  PRINTTAB(0,0);"YOUR SCORE ";N;
 1960 COLOUR1
 1970  PRINT" COMP ";B
 1980 VDU5
 1990 ENDPROC
 2000 DEF PROCTITLE
 2010 CLS
 2020 PRINT;SPC(10);"PENATY DECIDER"
 2030 PRINT'';SPC(6);"EUROPEAN CUP ROUND ";ROUND
 2040 PRINT'''';"Youre team of blue shirted"
 2050 PRINT"Men are in the cup final."
 2060 PRINT" After an action packed game which went int
o extra time"
 2070 PRINT"neither team managed to score."
 2080 PRINT" So now its down to sudden death"
 2090 PRINT"penaties the first team to score "
 2100 PRINT"five goals wins."
 2110  PRINT" You decide which way your player shoots o
r dives by"
 2120 PRINT"using the following keys"
 2130 PRINT'';"   Left <     Right >"
 2140 PRINT';"   Straight/Keeper stationary '?'"
 2150  PRINT'''';"   PRESS ANY KEY TO PLAY"
 2160  S=INKEY(0)
 2170  IF S=-1 THEN GOTO2160
 2180
 2190  ENDPROC
```



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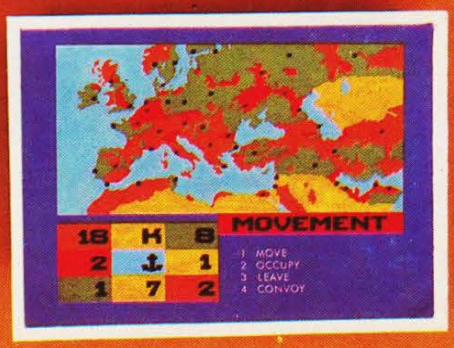

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fantasy SOFTWARE

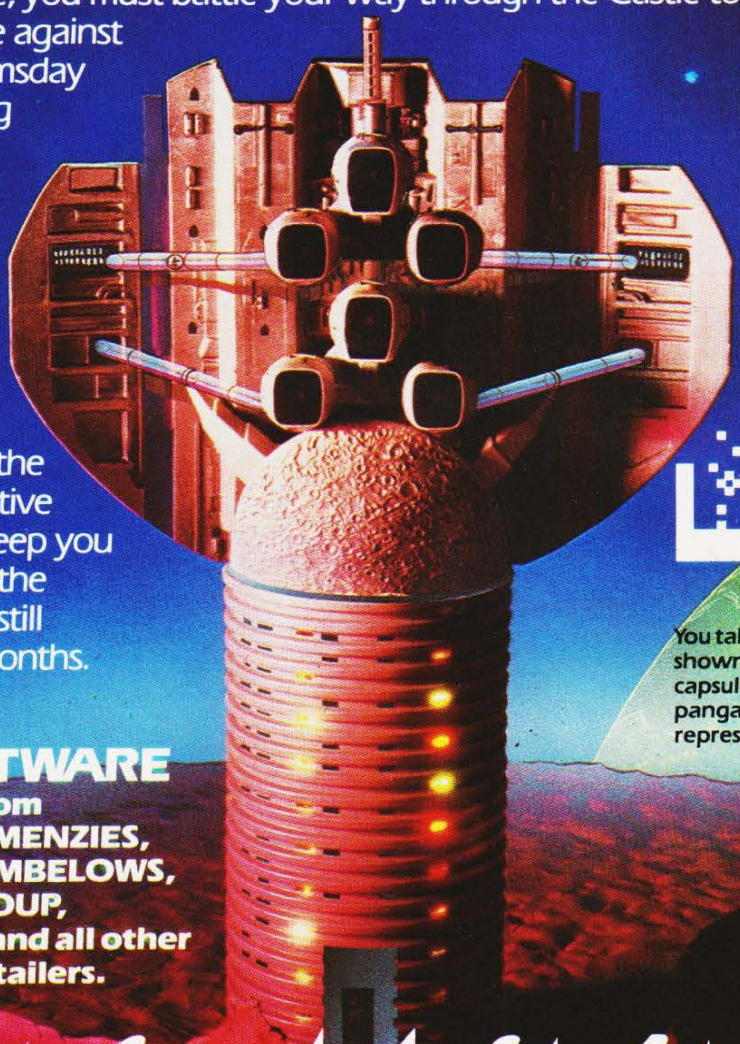
DOOMSDAY CASTLE

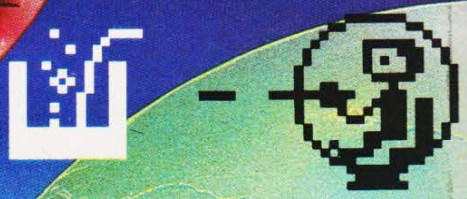
is an arcade style game with the feel of a real adventure

Doomsday Castle consists of a labyrinth of 76 complexly inter-connected Halls and Passages where you will meet a whole host of adversaries serving the infinitely evil Scarthax, the Garthrogs, the Orphacs, the phenomenally nasty Googly Bird and the Urks which manifest themselves in over fifty unbelievably weird and wonderful guises.

Scarthax has scoured the Universe to bring together the six ancient stones of lifeforce. United in Doomsday Castle they are being used to wield an irresistable power over the cosmos, emanating waves of corruption through every galaxy.

To save the Universe, you must battle your way through the Castle to find and collect the six stones and use their force against Scarthax to destroy Doomsday Castle, hopefully escaping yourself before the final cataclysmic explosion. The task is not easy (saving the Universe never is!) and it will take youmany games to unfold the structure of Doomsday Castle and discover the locations of the ancient stones. The addictive arcade style action will keep you coming back to play but the overall challenge should still keep you occupied for months.





You take on the role of our super hero ZIGGY shown here above in his exploratory capsule in combat with an Urk disguised as a pangalactic gargleblaster (!!) This is a true representation of the on-screen graphics.

FANTASY SOFTWARE
is available from
W.H.SMITHS, JOHN MENZIES, LASKYS, GREENS, RUMBELOWS, SPECTRUM GROUP, COMPUTERS FOR ALL and all other good software retailers.

For 48K Spectrum

DOOMSDAY CASTLE

is available at £6.50 from
FANTASY SOFTWARE, FALCONBERG LODGE, 27A ST GEORGES ROAD, CHELTENHAM, GLOS GL50 3DT
despatched by return first class post together with free membership and current newsletter of the Fantasy Micro Club.
Trade Enquiries welcome – telephone 0242-583661.

The Runaway Robot Replies

Dear *Games Computing*
I had to write and say that I think your magazine is great, it is better than any other magazines that I buy.

I especially like the section on War games for computers, *From Rome to Ram.*

I also must say that your programs actually worked when I type them in. I own a VIC-20 and I think it's good to see that you had as many programs for the VIC as for the Spectrum. Keep it up.
Yours
Barry Mayes

I'm glad to hear that you like *Games Computing* Barry and hope you continue to do so in the future. Our Wargames series is to continue indefinitely, so you have no worries about that coming to an end for the time-being.

Dear Editor
Congratulations for bringing out the best computer magazine in the shops today. I am thoroughly delighted with it and especially like the programs which you print for use on our own computers.

However, after reading the first two issues I was disappointed to see only one program for the CBM 64, seeing as this is one of the most popular computers, along with the Spectrum. So please, more programs for the CBM 64. Also in some of the programs some of the graphics do not come out as clearly as possible, while in others they come out superbly. Finally, I would like to know whether some of the programs suitable for the VIC would run on the CBM 64 without any conversions. If they are suitable would you please say so on page where the program is.

Once again well done (I can't wait for the next issue).
Yours Sincerely
David Buckmaster

I will try to answer your queries one by one. Firstly we can only print what programs are sent in to us, so if there are any budding programmers for the CBM 64, or any other computer, who have written games for their computer why not send them in with some accompanying documentation like the programs in this magazine. We do pay for anything that is published.

Secondly, some listings are clearer than others because some printers are better than others.

Lastly, all VIC programs are compatible with CBM 64 programs as long as you adjust the POKE, PEEK, and PRINT statements accordingly as the VIC has a different size screen layout to the CBM 64 and the control registers for colour and sound are different. We do have a section marked Conversion Clues on each program, which should help you overcome these problems.

Dear Sir/Madam
RE: School of Death.
Firstly is this program meant to be copied? If so, there are a great number of lines to lengthy to be put in the Oric 48K. To quote the manual you are not allowed to have lines that are longer than 78 characters. The manual does not explain how to get out of this situation.

As most of the lengthy lines come where the line numbers run consecutively it is a mammoth task to renumber and insert extra lines.

Your comments and advice would be gratefully appreciated by a fed up mum and a confused son.
Yours Sincerely
Mrs J Darke

It can be a bit of a problem with the Oric, as a lot of our longer programs require you to have lines longer than 78 columns. The answer is that you can only type in lines up to 78 characters long, so by replacing "?" for "PRINT" you can save four characters. This shorthand entry of PRINT is the same with all microsoft BASICs. When the program is listed the "?"s will be reconverted into "PRINT"s and the line will look as if it's longer than 78 characters.

Dear *Games Computing*
Your second magazine is just as good as the first congratulations and keep up the good work.

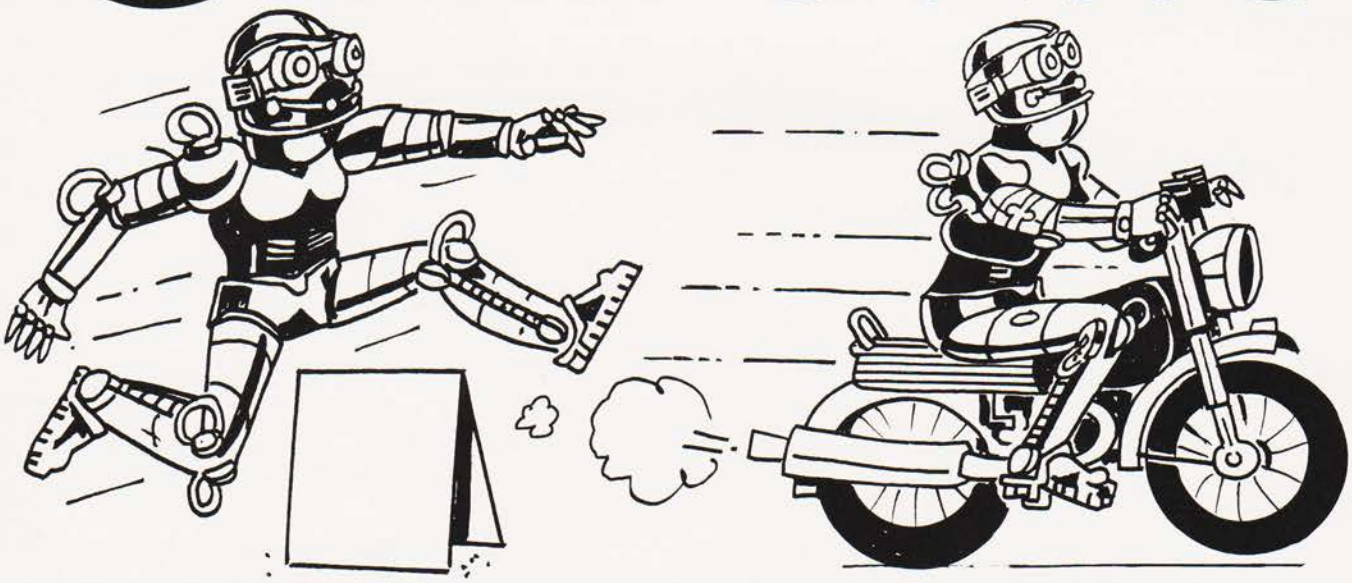
Thank you for mentioning the Mattel Intellivision system, so few magazines do since the Colecovision came on the market.

I would like to know why Mattel don't make better use of their machine by using more cartridge power. Mattel cartridges can be up to 64K so games can be equal if not better than those by Colecovision. The most powerful game I have at the moment is a 12K Tron Maze-a-Tron.

I own a Lucky Keyboard that I got from the Silica Shop in Kent. It's language is BASIC, although I don't know of a BASIC that uses commands such as CALL SHOW, CALL GRAB for graphics, or CALL NOTE, and CALL TONE for sound. The booklet supplied is not too explicit and tells you to order a book called *Step By Step Guide To BASIC.* This book is not going to be released in England.
Yours Faithfully
Steven Roberts

Have you got any opinions to air, has someone somewhere upset you and you want to grizzle and gripe? Or maybe you're full of the joys of spring and feel like telling a happy story?
Whatever you want to say, be it good, bad or indifferent drop us a line here at Games Computing and get it off your shoulders.
Send your letters to:
'Postman Pat', Games Computing, 1 Golden Square, London W1.

GAMES COMPUTING



If you're the type of person who takes their computer and video games seriously you should be reading Games Computing every month.

You'll find a galaxy of games to zap you into the outer realms of space in each issue which you can play on your own computer. And regular program features include exciting adventure games, brain twisting strategy games and super sports games.

PLUS: Software Reviews, the latest news from games makers and players, our special wargames series and fascinating features.

DON'T MISS OUR FREE PULL OUT POSTER PROGRAM IN EACH ISSUE.

COMMODORE 64 • SPECTRUM • BBC • ORIC • DRAGON • TANDY

IF YOU THINK YOU'VE GOT THE BETTER OF YOUR COMPUTER, YOU'D BETTER THINK AGAIN....

We all enjoy a good action game on our home computers, but after a while doesn't chasing the alien across a screen wear a little thin? That's the time to take on the superior challenge of a Warmaster strategy game — plenty of action, plenty to think about, and plenty of titles to suit every taste.

Take on Warmaster and really put your home computer through its paces.

CONFRONTATION
Build-on game that offers a basic format for any modern, non-nuclear conflict. Contains a modern European scenario with facility to create others of your choice using air and land forces. Two-player game.

Spectrum 48K	**£7.95**
BBC-B	**£7.95**

RED BARON
Offers the excitement of arcade action but requires the tactical thought of war games. Pit your biplane against one or two of the Kaiser's aces in this aerial combat game.

Spectrum 48K	**£5.95**

PARAS
Dramatic all-graphics campaign. Your hand-picked force has dropped behind enemy lines to capture a strategic river crossing. Two versions of the game with ten levels of play.

BBC-B	**£6.95**
Spectrum 48K	**£5.95**
Oric 1 48K (coming soon)	**£6.95**

JOHNNY REB
There's still plenty of fight left in the Confederate South as each side selects forces to manoeuvre on a full-graphics battlefield. Play against the computer o challenge a friend.

Spectrum 48K	**£5.5**
Oric 1 48K	**£6.9**
BBC-B	**£6.9**
Dragon 32/Tandy Colour 32K	**£6.9**
Commodore 64 (coming soon)	**£6.9**

DREADNOUGHTS
Suspense-filled high seas drama as the pride of the German Grand Fleet is locked in battle with the Royal Navy. Two-player game.

Spectrum 48K	**£5.95**

BATTLEZONE 2000
Futuristic wargame. Your tanks, missile launchers, infantry etc. have to destroy an all powerful computer-controlled battle machine. Can you save Planet Earth?

BBC-B	**£6.95**

Available from John Menzies, Lightning Dealers and better software shops or clip the coupon for fast delivery.

Please send me (tick box)

Confrontation	Spectrum 48K	£7.95	☐
	BBC-B	£7.95	☐
Red Baron	Spectrum 48K	£5.95	☐
Paras	BBC-B	£6.95	☐
	Spectrum 48K	£5.95	☐
	Oric 1 48K (coming soon)	£6.95	☐
Johnny Reb	Spectrum 48K	£5.50	☐
	Oric 1 48K	£6.95	☐
	BBC-B	£6.95	☐
	Dragon 32/Tandy Colour 32K	£6.95	☐
	Commodore 64 (coming soon)	£6.95	☐
Dreadnoughts	Spectrum 48K	£5.95	☐
Battlezone 2000	BBC-B	£6.95	☐

Free colour catalogue listing all Lothlorien games ☐

I enclose a cheque/P.O. for £_____ made payable to M C Lothlorien.

Please debit my Access No. ____/____/____/____ Signed_____

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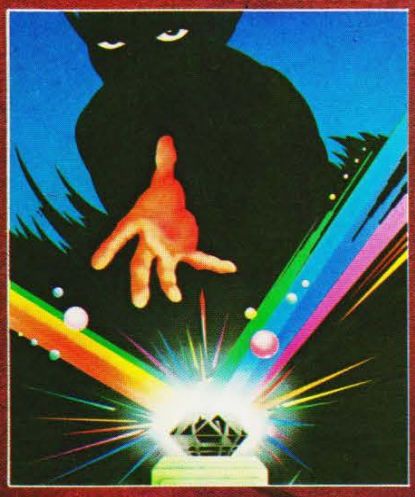
LOTHLORIEN
the mind stretcher

JUST AROUND THE CORNER, A NEW



BLACK CRYSTAL

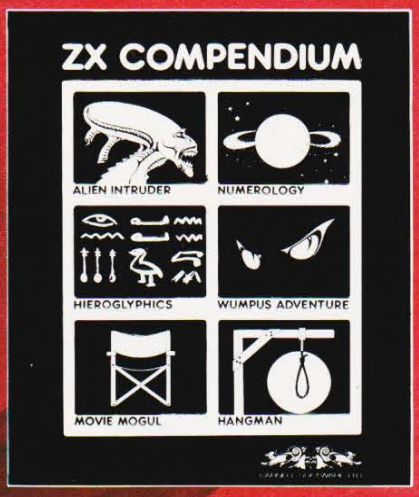
The Classic, six program adventure game for the 48K Spectrum and 16K ZX-81 computers. No software collection is complete without it.

"BLACK CRYSTAL is an excellent graphics adventure and a well thought out package" (Sinclair User, April '83).

"BLACK CRYSTAL has impressed me by its sheer quantity and generally high quality of presentation. I am afraid I have become an addict" (Home Computing Weekly, April '83).

SPECTRUM 48K 180K of program in six parts . . . only £7.50
ZX-81 16K over 100K of program in seven parts . . . only £7.50

Why pay more for less of an adventure?



ZX-81 COMPENDIUM

Alien Intruder. Wumpus Adventure, Numerology, Hangman, Hieroglyphics, Movie Mogul.

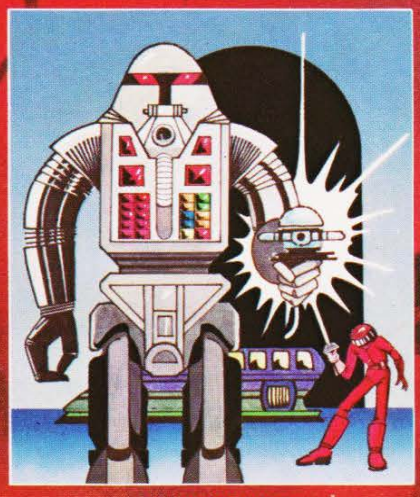
The ideal software package for all 16K ZX-81 owners. Six major programmes on two cassettes for only £6.50.

"Alien Intruder/Hieroglyphics — Both programs make good use of graphics and words to make a very entertaining package." (Sinclair User, Aug '82)

"Alien/Hieroglyphics/Wumpus/Movie — A varied mix from Carnell, all featuring imaginative responses and graphics and all of them good games for all ages (Hieroglyphics is particularly good for children)." (Popular Computing Weekly, Aug '82)

THE ADVENTURES OF ST. BERNARD

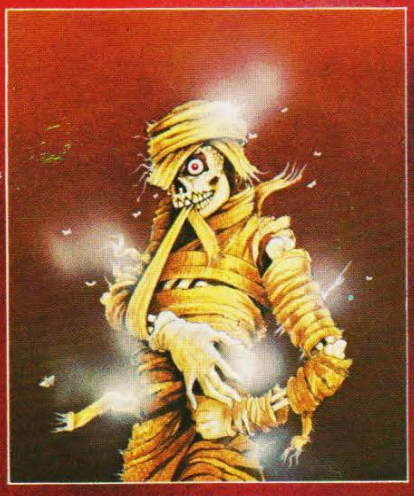
An exciting, fast moving, machine code, arcade game where you guide your intrepid St. Bernard through the perils of the icy wastelands to rescue his Mistress from the clutches of the abominable snowman. 48K Spectrum £5.95.



STARFORCE ONE

Take on the robot guardians of the central computer in a superbly stylised three dimensional battle game. 48K Spectrum £5.95.

(100% MACHINE CODE ARCADE ACTION)



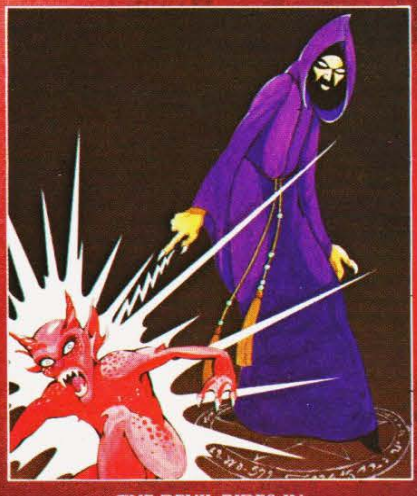
THE CRYPT

written by Stephen Renton

Prepare yourself for the many challenges that shall confront you when you dare to enter "THE CRYPT".

You will battle with giant scorpions, Hell spawn, Craners, Pos-Negs and if you are unlucky enough — the Dark Cyclops in this arcade style adventure.

Available now for the 48K Spectrum @ £4.95



THE DEVIL RIDES IN

I uttered the last incantations as the clock struck thirteen. All fell silent except for a faint rustling in the corner. From out of the shadows they came, all Hell's fury against me but I was not defenceless until the Angel Of Death, astride a winged horse, joined the battle. Avoiding his bolts of hell fire, I took careful aim. My chances were slim, but if my luck held . . . 48K Spectrum £5.95.

(Fast moving, machine code, all action, Arcade game)

RANGE FROM CARNELL SOFTWARE

COMING SOON

"THE WRATH OF MAGRA"

The first born has been destroyed. The Black Crystal of Beroth has been banished. The alliance of Evil has been defeated by the armies of Lord Fendal. So ends the Third Age. Now we invite you to write your name in the history of the Fourth Age of the Third Continent.

You will meet friends and enemies, old and new, in the long awaited sequel to Volcanic Dungeon. Using high resolution graphics and combining the best qualities of "Black Crystal" and "Volcanic Dungeon", we will allow you to become part of this tale of revenge.

"The Wrath Of Magra" comes as three, 48K programs on cassette, boxed with instruction manual and book detailing the history of the Third Continent and the many spells you will be using throughout the game.

NOTE: "The Wrath Of Magra" is a complete adventure. You need not buy "Volcanic Dungeon" or "Black Crystal" to play it.

Available through most good computer stores or direct from:
Carnell Software Ltd, North Weylands Industrial Estate, Molesey Road, Hersham, Surrey KT12 3PL.
Dealers: Contact us for your nearest wholesaler.

CARNELL SOFTWARE LTD

The BBC Micro can now give your children a private education.

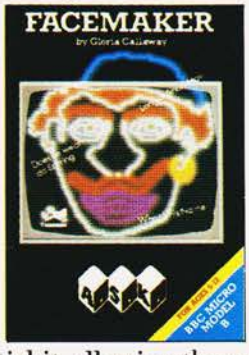
The BBC Microcomputer now accounts for 80% of the computers being ordered under the current D.O.I. Primary School Scheme.

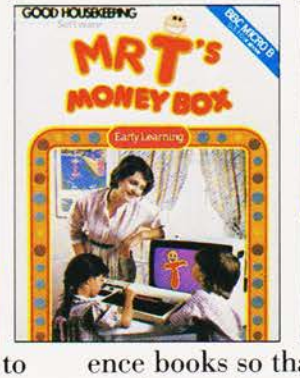
It's also the computer which a rapidly increasing number of people are choosing for their homes.

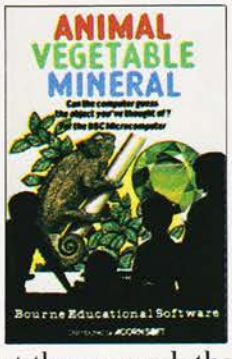
One of the reasons for its success is that it makes learning highly entertaining for everybody. From children who are getting to grips with the alphabet, to adults who want a gentle but intensive introduction to the complex world of computing.

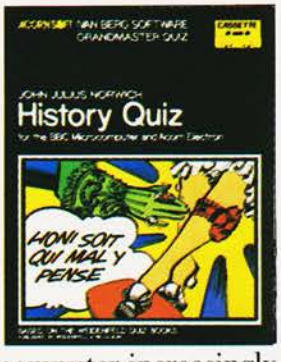
Now, there's a substantial new catalogue of educational programs specially for the BBC Microcomputer.

It has been developed by Acornsoft, the software division of Acorn Computers who manufacture the BBC Micro.









Making faces without getting scolded.

With the new Facemaker program, your children can make over a million faces. It's like an identi-kit, allowing them to depict anyone they want. They start by choosing the eyes. Then they can choose the mouth, the ears, the nose, the facial outline and the hairstyle.

And if they really fancy dressing up, they can add earrings and hats.

In doing all this, they learn to read and spell, as well as developing their powers of description.

The money program, two games for the price of one.

Mr. T. is an engaging little figment of the microchip who can teach your children all the complexities of our coinage system.

His Money Box program has two games, each of which can be played at different levels.

In Money Match, the challenge is to collect a set of coins, matching them according to shape, size and value.

In Money Box, you can give your child and Mr. T. a helping hand to get all the coins on the screen into the box. (It's always different, because the coins on the screen are based on the small change you have to hand.)

A chance to teach the Micro a thing or two.

With the Animal, Vegetable, Mineral program, the children can get the computer guessing.

They think of an object. The BBC Micro has to decide what it is.

If it doesn't come up with the answer, the children can keep giving it hints.

In doing so, they are encouraged to question the difference between such things as crocodiles and alligators, or whether oil is vegetable or mineral.

The program also encourages them to consult reference books so that they can ask the computer increasingly tough questions.

Questions on Julius Caesar from J. Julius Norwich.

John Julius Norwich's History Quiz is one of the new BBC Micro Grandmaster quiz series which also covers theatre, crime and detection, music, science fiction and royalty.

On the history front, there are 300 brain-testing questions, covering all aspects of British history from Julius Caesar to Margaret Thatcher.

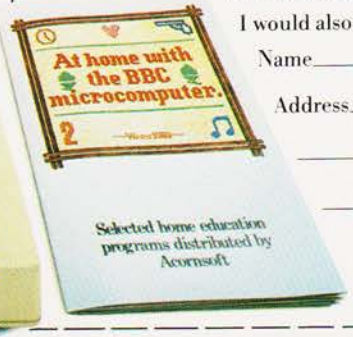
And to increase the educational value, Mr. Norwich has posed the questions from angles which will give a broader understanding of events.

For the full catalogue, clip the coupon.

There are thirty more new BBC Micro programs in Acornsoft's new catalogue.

For a free copy, complete the coupon, or telephone 0933-79300. Or ask your local BBC Micro dealer.

If you're not yet a BBC Micro owner, you can get full details of the computer at the same time.



To Acornsoft, c/o Vector Marketing, Denington Estate, Wellingborough, Northants NN8 2RL. Please send me the new Acornsoft catalogue "At Home With The BBC Microcomputer."

I would also like details of the BBC Micro ☐ (tick)

Name_____

Address_____

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ACORNSOFT GC4

FINAL FRONTIER

You have been on a mission taking cargo to Alpha Centuri when you run into an Asteroid Storm. Contained in the asteroid belt are fuel dumps, flags and dockers, left over from other ships. You must dodge your way through the Asteroid Belt collecting the fuel dumps, flags and dockers.

To Play

Use the joystick, right for right, left for left ; down for hyperspace.

You are the yellow ship at the top of the screen. You collect the fuel dumps, flags and dockers by ramming them.

Graphics

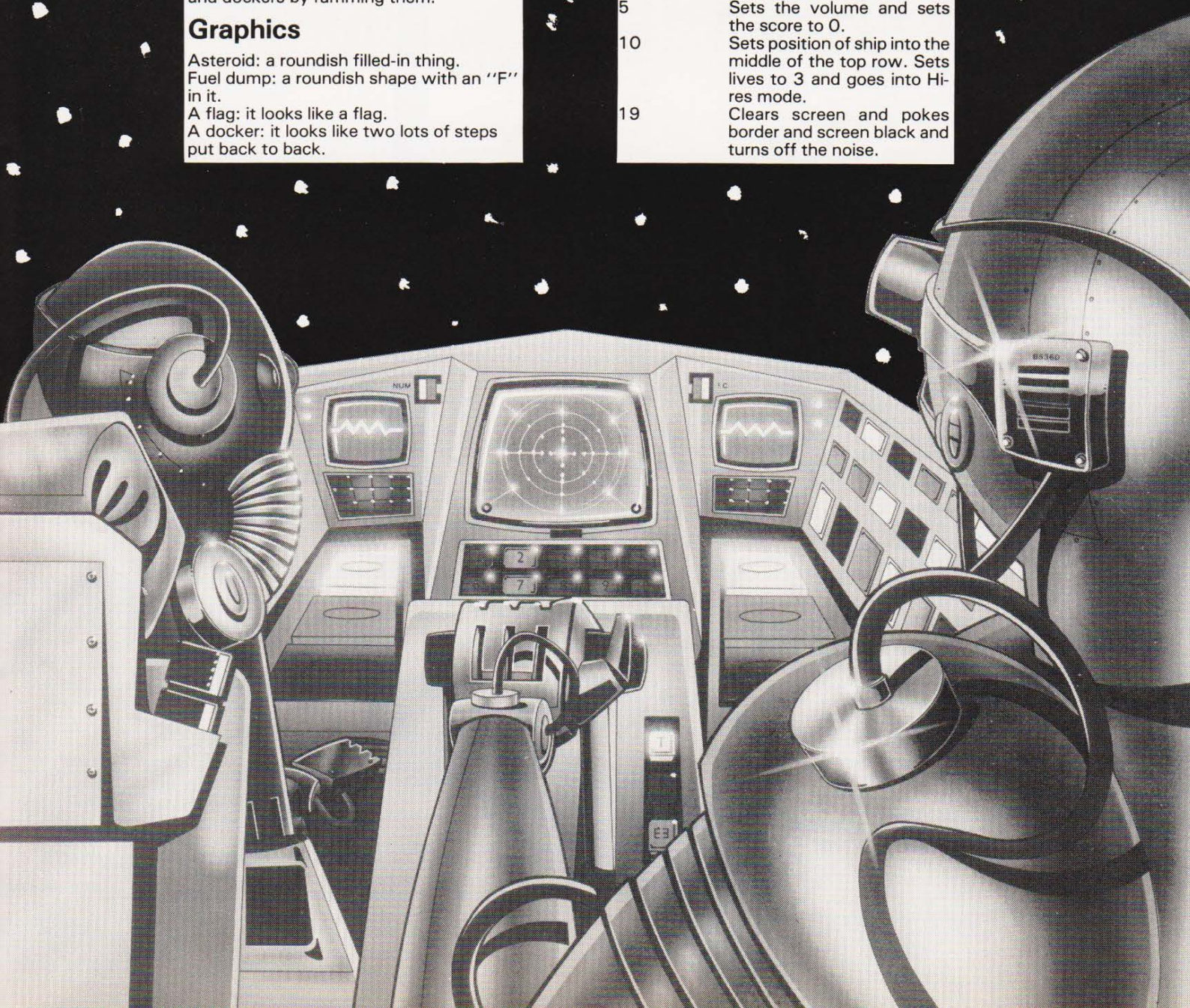
Asteroid: a roundish filled-in thing.
Fuel dump: a roundish shape with an ''F'' in it.
A flag: it looks like a flag.
A docker: it looks like two lots of steps put back to back.

Points

You get a point as the screen scrolls upwards and:
A fuel dump 5 points
A flag 20 points
A docker 50 points

Rundown

1	Sets Hi-Score to 1250 and sets Hi-Scorers' name to * * VIC-20 * * THEN GOSUBS to instructions and the user definable graphics routine.
5	Sets the volume and sets the score to 0.
10	Sets position of ship into the middle of the top row. Sets lives to 3 and goes into Hi-res mode.
19	Clears screen and pokes border and screen black and turns off the noise.



FINAL FRONTIER

20	Pokes up your ship. Chooses a random position in the bottom half of the screen and defines it as C. Pokes ship to yellow.
21	If a random number (0-1) is more than 0.975, then it pokes C as a Flag; then goes to 26.
22	If it is more than 0.7 it pokes C as a fuel dump.
23	If it is less than 0.05 then it pokes C as a docker.
25	Pokes * as a docker.
26-27	Sets joystick variables.
30	Moves right.
35	Hyper space.
40	Moves left.
50	Checks if you have crashed; if so, it goes to 500.
51	Sees if you have rammed a docker; if so, it increases your score by 50.
52	Sees if you have rammed a fuel dump; if so, it increases your score by 5.
53	See if you have rammed a Flag; if so, it increases your score by 20.
55	Pokes a random note.
60	Scrolls screen. Increases score by one then goes to 20 to start loop again.
90	Pokes a space in A. Gives a new location. Pokes your space ship there and goes to 20.
500	Takes away one of your lives. Sees if you have none left. If you have run out, then it goes to 1000.
505	Returns to normal mode.
510	Pokes the border green and screen black. Shows score and how many lives you have left.
515	Pokes a blowing up noise.
520	Delay loop.
530	Returns to Hi-res mode and goes to 19 to continue game.
1000	Returns to normal mode. Clears screen. Pokes red border and black screen and turns noise off.
1010	Prints "YOU'RE DEAD".
1020	Prints your score.
1025	Delay loop.
1030	If your score is bigger than the Hi-Score, then your score becomes the Hi-Score and goes to 1050.
1040	Go to 2000.
1050	Prints "ENTER YOUR NAME". If you have entered more than eleven characters, including spaces, it asks again.
1060	Goes to 2000.
2000	Clears screen.
2001-2002	Pokes top and bottom lines different coloured blocks.
2010	The Hi-Scorer's name with his/her score.
2030	Prints "PRESS FIRE".
2040	Checks if you have pressed fire; if you have, it goes to 5.
2050	Goes to 2040.
5000	Clears screen and pokes border to red and screen to black.
5001-5002	Does the same as 2001-2002.
5010	Prints THE.
5020-5120	Prints "FINAL FRONTIER" in five block high letters, using the VIC's RVS on facilities.
5125	Goes through all screen and border locations, three times to give flashing effect.
5130	Goes to 10000.
5150-5180	Sets up user definable graphics.
5190	Goes into Hi-res mode and returns to start game.
10000	Clears screen and prints in RVS on INSTRUCTIONS.
10010	Sets up first part of instructions as A$.
10011	Sets F to 36876 (a sound channel) and turns on volume.
10012	Prints out first part of instructions letter by letter, making machine gun sound.
10015	Sets second part of instructions as A$.
10016	Does the same as 10012 but with second part of instructions.
10017	Prints: BY DOING THIS it gets the cursor to the beginning of a line.
10020	Sets final parts of instructions as A$.
10026	Does same as 10012 but with final part.
10040	Delays loop. Goes to 5150.

Variables

A	Your ship.
C	Random position in bottom half of screen for Asteroid, Fuel Dump, Flag or Docker.
SC	Your score.
LI	Lives left.
HI	Hi-Score.
HI$	Hi-Scorer's Name.
PA, PB, RB, M and N	Joystick variables.
A$	Used in instructions.
I	Used in setting up Hi-res.
T	Used in most for . . . Next loops.

Hints on Play

Go for a docker, if you see one and use hyperspace as much as possible. The game uses up around 2400 bytes.

```
1 HI=1250:HI$="**VIC-20**":GOSUB5000
5 POKE36878,15:SC=0
10 PRINT"■■":POKE36879,8:A=7691:LI=3:POKE36869,255
19 PRINT"■":POKE36879,8:POKE36877,0
20 POKEA,0:C=INT(RND(1)*254)+7933:POKEA+30720,7
21 IFRND(1)>.975THENPOKEC,4:GOTO26
22 IFRND(1)>.7THENPOKEC,3:GOTO26
23 IFRND(1)<.05THENPOKEC,5:GOTO26
25 POKEC,2
26 PA=37151:POKEPA,0:PB=PA+1:RB=PB+2
27 M=PEEK(PA):POKERB,127:N=PEEK(PB):POKERB,255
30 IF(NAND128)=0THENA=A+1:POKEA-1,1
35 IF(MAND8)=0THEN90
40 IF(MAND16)=0THENA=A-1:POKEA+1,1
50 IFPEEK(A+22)=2THEN500
51 IFPEEK(A+22)=5THENSC=SC+50
52 IFPEEK(A+22)=3THENSC=SC+5
53 IFPEEK(A+22)=4THENSC=SC+20
55 POKE36876,INT(RND(1)*128)+128
60 PRINT:SC=SC+1:GOTO20
90 POKEA,1:A=INT(RND(1)*22)+7680:POKEA,0:GOTO20
500 LI=LI-1:IFLI=0THEN1000
505 POKE36869,240
510 POKE36879,13:PRINT"■■■■■■■■■■■SCORE"SC"LIVES"LI
515 POKE36877,220
520 FORT=1TO1000:NEXT
530 POKE36869,255:GOTO19
1000 POKE36869,240:PRINT"■■":POKE36879,10:POKE36876,0
1010 PRINT"YOU'RE DEAD"
1020 PRINT"SCORE"SC
1025 FORT=1TO2000:NEXT
1030 IFSC>HITHENHI=SC:GOTO1050
1040 GOTO2000
1050 PRINT"■■■ENTER YOUR NAME":INPUTHI$:IFLEN(HI$)>11THEN1050
1060 GOTO2000
2000 PRINT"■"
2001 FORQW=0TO21:POKE7680+QW,160:POKE8164+QW,160:POKE38400+QW,(QWAND7)
2002 POKE38884+QW,(QWAND7):NEXTQW
2010 PRINT"■■■■■■1 "HI$;HI
2030 PRINT"■■■■■■■■■■■■■■■PRESS FIRE"
2040 IFPEEK(37151)=94THEN5
2050 GOTO2040
5000 PRINT"■■":POKE36879,10
5001 FORQW=0TO21:POKE7680+QW,160:POKE8164+QW,160:POKE38400+QW,(QWAND7)
5002 POKE38884+QW,(QWAND7):NEXTQW
5010 PRINT"■■■■■■■■■■■THE"
5020 PRINT"■■"
5030 PRINT"■■■■■■   ■ ■ ■ "
5040 PRINT"■■■■■■ ■■ |   |■| "
5050 PRINT"■■■■■■   ||   |   | "
5060 PRINT"■■■■■■ ■■ |   |■| "
5070 PRINT"■■■■■■ ■■ | ■■■ |■| |   "
5080 PRINT"■■"
5090 PRINT"■   |  ■   |■|   ■   |  ■"
5095 PRINT"■■ ■■ ■ |■|   ■ ■ |■■ ■ "
5100 PRINT"■■   |   |■|   ■ ■|   |   "
5110 PRINT"■■ ■■   ■ ■|   ■ ■|■■   "
5111 PRINT"■ ■■ ■ |   | ■■■ ■ ■|   |■ "
5120 PRINT"■■■■■■■BY WALLI"
5125 FORT=1TO3:FORS=0TO255:POKE36879,S:NEXTS,T:POKE36879,8
5130 GOTO10000
5150 FORT=0TO511:POKE7168+T,PEEK(32768+T):NEXT
5160 FORI=7168TO7215:READA:POKEI,A:NEXT
5170 DATA60,126,195,219,126,60,24,0,0,0,0,0,0,0,0,0
5180 DATA60,126,126,255,255,126,126,60,60,66,90,145,153,82,66,60
5185 DATA254,254,254,254,254,192,192,192,0,0,24,24,60,60,255,255
5190 POKE36869,255:RETURN
10000 PRINT"■■■+++++INSTRUCTIONS+++++"
10010 A$="■■■■■■AVOID THE ROCKS AND  ■RAM THE FUEL DUMPS ,  ■FLAGS AND DOCKERS■"
10011 F=36876:POKE36878,15
10012 FORT=1TOLEN(A$):FORG=255TO128STEP-6:POKEF,G:NEXTG:POKEF,0:PRINTMID$(A$,T,1
);:NEXTT
10015 A$="      FOR BONUS POINTS"
10016 FORT=1TOLEN(A$):FORG=255TO128STEP-6:POKEF,G:NEXTG:POKEF,0:PRINTMID$(A$,T,1
);:NEXTT
10017 PRINT
10020 A$="■■■ TO MOVE USE THE      ■ JOYSTICK;DOWN FOR   ■  HYPERSPACE"
10026 FORT=1TOLEN(A$):FORG=255TO128STEP-6:POKEF,G:NEXTG:POKEF,0:PRINTMID$(A$,T,1
);:NEXTT
10040 FORT=1TO5000:NEXT:GOTO5150
READY
```

COMPETITION

There for the taking this month are twenty copies of Melbourne House's HURG program.

HURG stands for High resolution User friendly Realtime Games designer. As its name suggests HURG allows ZX Spectrum users to design and program his or her own high speed machine code games without any knowledge of machine code.

The program is menu driven and allows the user to devise his own game by answering simple questions about the nature of his game. The game can then be saved to tape and reloaded as an independent program using HURG for driver software.

There are three arcade programs included to demonstrate the use of HURG and to give the user insight into the techniques used. You do not simply redefine the graphics on well worn games as with other games designer programs but start from scratch using your own ideas.

HURG was developed by Melbourne House from the development system that they have used to program their best selling games for the Spectrum and other computers.

HURG is not yet on the market so that the lucky winners of our competition will be among the first people to get this amazingly advanced games programming aid.

Melbourne House first started in 1977 as a book publishing company. In 1980, however, Alfred Milgram Managing director of Melbourne House saw the possibilities of computer books and consequently *30 Programs for your ZX80* was published. It became a best selling computer book and Melbourne House have never looked back, producing books on all subjects for a majority of micros on the market.

Early 1982 saw their debut into the software business. Since then Melbourne House have never been out of the software charts with a string of best selling games to their credit, like the Horace series, Terror Daktil, and many others including one of the most advanced adventure games ever written, The Hobbit, which is now available for the BBC Micro, Commodore 64, Oric 1, as well as the original Spectrum version.

Melbourne House will soon extend their range of games to cover the Dragon, VIC-20, and the Electron. The range of books caters for these machines already and covers every aspect of computing.

How to Win Your Designer Program

Printed on this page is a wordsquare and a list of games by Melbourne House. All you have to do is to find the list of words in the square and ring them. The words can go from left, right, up, down, backwards, forwards or diagonaly. Where a program name has more than one word the words that make up the program name will be connected but not necessarily in sequence.

When you have found all the letters you will find there are some letters left over. These will make up 10 words and some letters. Put these on the back of the envelope that your entry coupon is in. The words read from left to right and top to bottom. All the words should be ringed on the coupon.

M	H	E	S	P	I	D	E	R	S	P	T
L	B	U	O	U	N	R	N	E	E	E	I
H	H	O	R	A	C	E	O	U	R	N	B
S	E	S	H	G	C	H	I	R	U	I	B
G	H	R	E	A	S	T	O	O	T	T	O
L	U	G	R	T	C	R	I	O	N	R	H
N	U	O	S	E	D	I	R	F	E	A	R
I	H	E	E	A	N	D	S	L	V	T	Y
R	E	S	K	I	I	N	G	S	D	O	A
L	T	T	I	M	E	G	A	M	A	R	E
S	I	D	E	S	I	G	N	E	R	L	C
L	G	C	T	U	A	N	O	M	S	O	C

Hobbit

Terror Dactil

Penitrator

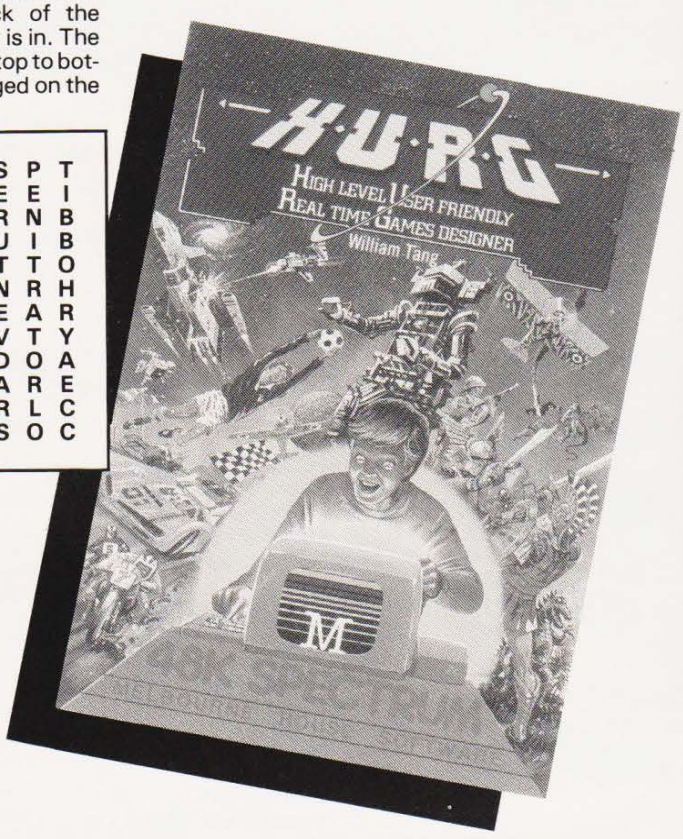
Classic Adventure

Cosmonaut

H.U.R.G

Horace Goes Skiing

Horace And The Spiders



Competition Rules

1. This competition is open to all UK readers of *Games Computing*, except employees of Argus Specialist Publications Ltd, their printers and distributors, employees of Melbourne House or anyone connected with them.
2. As long as the correct coupon is used for each entry there is no limit to the number of entries per person, photocopies will not be accepted.
3. All entries must be postmarked before April 30, 1984.
4. The prizes will be awarded to the first 20 correct entries picked out of the bag.
5. No correspondence will be entered into with regard to the results and it is a condition of entry that the editor's decision is final.
6. The winners will be notified by post and the results will be published in a future issue of *Games Computing*.

Competition Coupon

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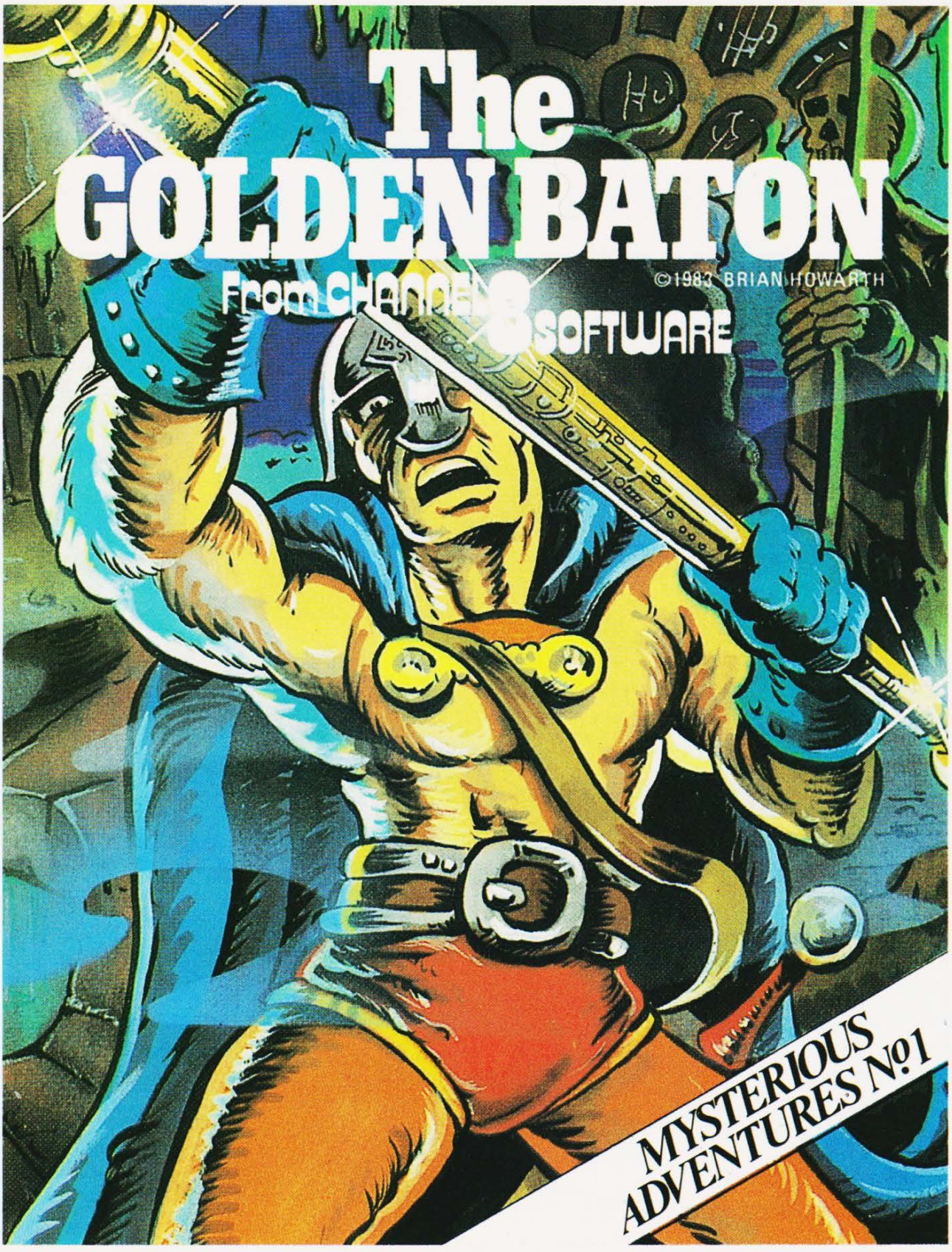

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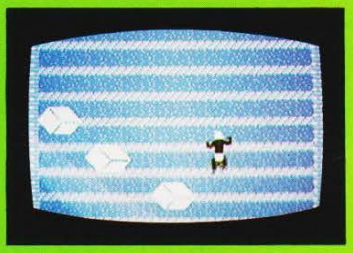
FOR THE 64 commodore

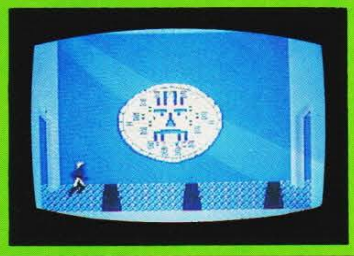
If you've got a 1541, you don't want to spend ages waiting for cassette games to load. Freed from the restraints of loading times, Audiogenic Disk Games can give you typically around 30K of machine code! More code means better games, better graphics and sound, more variation, and those little extra touches that you will come to expect from a game. Here are our first great releases!

FORBIDDEN FOREST

Forbidden Forest is more of a quest than just a game! The action takes place in a four dimensional scrolling forest landscape which many have entered, but none has returned. Yes, I did say FOUR dimensional - day fades into night as the action unfolds! The quest is to seek out and destroy the Demogorgon, mystic ruler of the Forbidden Forest. Before you can even set eyes on him you will have to contend with his army of fearsome creatures, including mutant spiders, showers of giant frogs, snakes, dragons, skeleton soldiers and more! You have only your trusty bow and arrows to depend on!

*





AZTEC CHALLENGE

A challenge on an epic scale! Aztec Challenge takes you on a journey to Mexico and the ancient pyramid of Tenochtitlan. The ancient Aztec gods and their devotees have ensured that no ordinary human can learn the secrets of the temple and live to tell the tale. The pyramid is protected by all manner of treacherous traps and hidden perils - an epic test of your courage and cunning. Aztec Challenge features no less than seven totally different screens - here are just three of them - each of which presents a brand new challenge. We hope your joystick can stand up to it!

*

SLINKY

Slinky, the spring, was having fun hopping about when suddenly he came upon a pile of coloured blocks, so he thought he'd play around on them for a while. Much to his amazement he found that they changed colour when he landed on them. Wow! But unknown to him, the blocks belonged to the Wicked Wizard, who sent his friends along to tease our poor hero. Slinky is a real fun package with ninety-nine levels, amazing reward displays, and action replays. Where else could you meet such charming characters as Dusty the dust cloud, Marge the magnet, Ralph the random raindrop, and Lorenzo the chameleon hopper?

*

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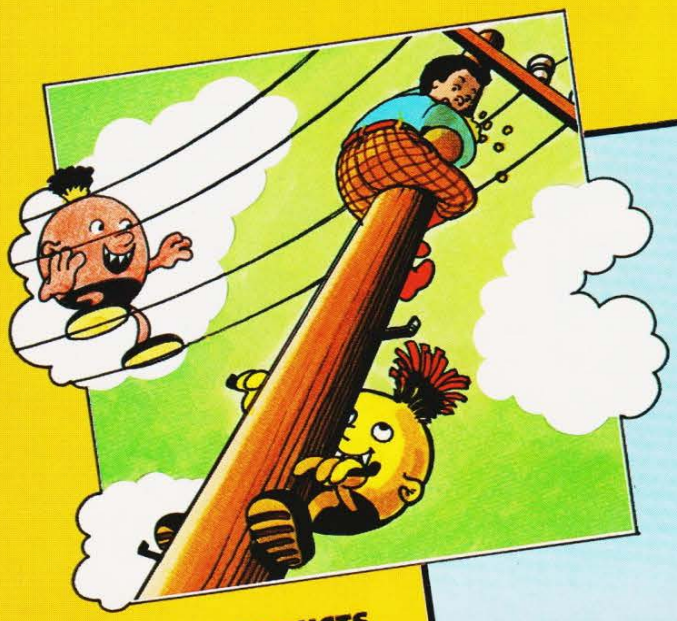
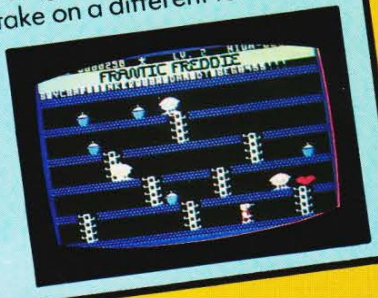


FRANTIC FREDDIE

Frantic Freddie is fun all the way! Played to an unbelievable soundtrack of brilliantly arranged tunes, Frantic Freddie contains all the ingredients that make a game into a classic! Freddie is a telephone line engineer who has to climb up and down the telegraph poles, picking up pots of gold and avoiding the dreaded Greeblies. The Greeblies take on a different form with every new screeen, but one thing's for sure - they may look cute, but they show no mercy! Frantic Freddie also features wacky messages, funny interludes and silly bonuses. Frantic Freddie - a game with a sense of humour!



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PEGASIS

Pegasis takes us back to the mythical age when the battle between Good and Evil was fought by heroes on winged steeds. As the champion of the forces of Good, you must topple the evil Black Warriors from their jet black flying horses by swooping down on them from above, then land and finish them off before they can remount. In order to keep airborne, you must keep your wings flapping with the joystick Fire button, and control direction with the stick. The brilliant programming of Pegasis gives you stunning graphics, bonus creatures, great wing flapping sound effects, an incredible simulation of flying horse aerodynamics, plus - two players can play at the same time!

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Flying Feathers

NEW

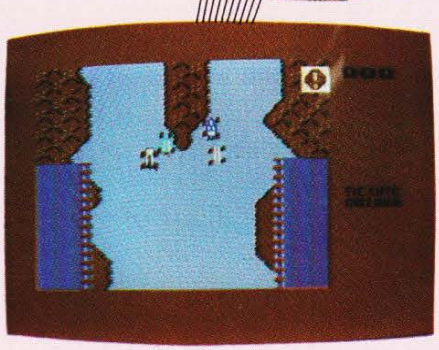
In this highly original game you are the gamekeeper on the lake trying to stop greedy eagles taking all the fish. Two different methods with 4 skill levels each are available for your shot gun. Specially scored music with freeze frame ability, and for the technically minded 10 sprites (yes, that's right, there are only 8 on the 64).
High scores kept.
All machine code.

Bumping Buggies

Thrills and spills is what you'll get in this highly addictive motor racing game. You'll be driving over some pretty hazardous terrain having to cope with lakes, islands, rock formations and, not least, other cars which are intent on making you crash. Luckily you can vary your speed and line and you have one ace up your sleeve – when you maintain a sufficient speed you can jump over obstacles to help you out of trouble. The track gets progressively more difficult with 20 different patterns and you have to cope with driving conditions in the four seasons of the year.
Like most bubble bus classics, Bumping Buggies has its own specially scored music and is in machine code.

Only £6.99 each

NEW



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SOFTWARE

ROAD RUNNER

Runs on: BBC B
Made by: Superior Software
Price: £7.95

As with all Superior Software programs there is no explanation of the nature of the game. Knowing nothing about Road Runner I was a little apprehensive. I need not have worried as the game is brilliant.

You control a red racing car and must drive around a maze. Of course you have a task. You must drive over 10 checkpoint flags before you are given a renewed maze. There are two kinds of obstacle. Firstly three green racing cars which are hell bent on your destruction which they achieve by colliding — with you! Secondly boulders which fortunately remain stationary.

Your defence against the green cars is either out-manoeuvering or emitting smoke which sends them into an uncontrollable spin. The only defence against the boulders is one of non-contact!

The graphics are superb — they are both colourful and smooth, and the sound is fairly good. One feature that I liked was the short rag-time burst of music at the start of each game. The control keys are easily mastered and there is a joystick option. All in all, the game is of a very high standard and represents very good value for money.

STEEPLE JACK

Runs on: Atari + Joystick
Made by: English Software
Price: £9.95

The first thing you notice is the front cover is a screen shot not a misleading artists impression.

You are supposed to be a boy (name of Jack) having a dream about climbing a chimney, by using the joystick and fire button, to climb ladders on a never-ending chimney which has random gaps. These gaps must be avoided or you fall off.

Easy? Well yes, but there are other hazards, pac-man like ghosts and multi-coloured falling elephants whose resemblance is more like that of a single bed.

The general response of the joystick is good, once you get into the fact flow of the game. Skill levels are 0-4 inclusive. The superb sound effects that are available on the Atari, have not been used to full effect. The scrolling effect of the graphics on the chimney and ladders are smooth and consistant I especially liked that animated face of Jack, with flashing eyes and darting tounge (but why just a head).

My overall opinion is good, but not to the usual standards of English Software, it soon became boring and the poor sounds were annoying.

There was a bug on the first loading which no matter how many times I tried I could not repeat, it was that by holding the joystick fully left and pressing start, Jack jumped of the ladder but did not fall. There by avoiding all hazards.

This did give a chance to let the game run on and seemed to reach a maximum speed but the format never changed in the 3000 metres that I sat through.

Not a game I would recommend.

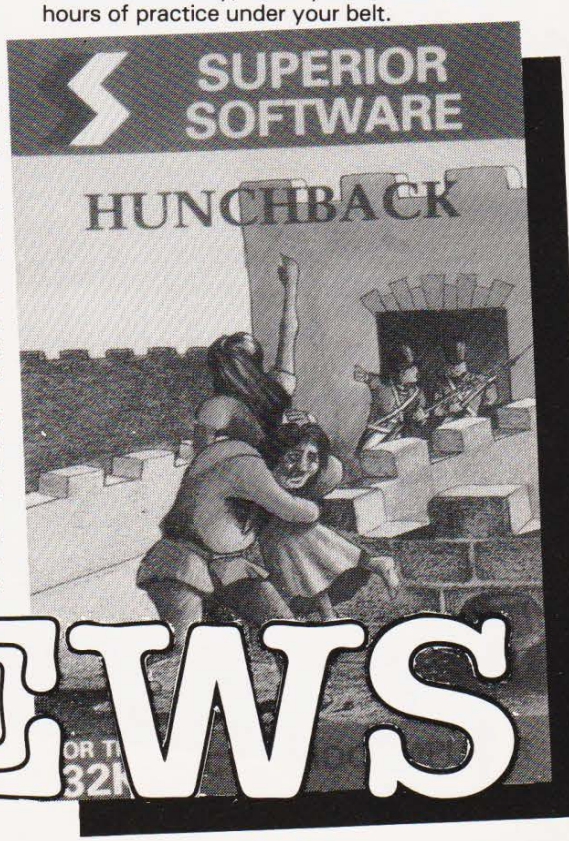
HUNCHBACK

Runs on: BBC B
Made by: Superior Software
Price: £7.95

Having heard a lot about the game I was eager to get started. When I first tried it I was amazed how difficult it was. The idea is that you, Hunchy, run along the battlements of a castle and attempt to rescue Esmerelda. The obstacles, — but of course, include cannon balls, arrows and anti-social guards.

The keys are simple to learn: left, right and jump, and there is a joystick option which would improve the game. The graphics are excellent, especially the way Hunchy jumps and the guards raise and lower their deadly spears. Sound is not very well used, but is adequate.

I think the game is very testing addition to the most complete collection and is well worth the money, once you have a few hours of practice under your belt.



REVIEWS

SOFTWARE

CRAZY PAINTER

Runs on: BBC B
Made by: Superior Software
Price: £7.95

This is a game whose type has a proven pedigree involving the painting in of boxes on a grid whilst running the gauntlet. In this one the gauntlet can be anything from spear carrying natives to cannibalistic teddy bears.

Deviations in this version include making the assassins jump then running past them and role playing on the part of the painter from a normal paint roller to an abnormal gorilla. Points are awarded for consuming articles along the way and I assume for completing all four sides of a box on later screens. I have to assume because I could not stay alive long enough to discover what I was supposed to do on these later screens and the instructions gave little help.

With joystick or keyboard use, good quality graphics and with perseverance this game may well grow on you but on me I'm afraid it died.

I find difficulty in loading Superior Software — despite four different recorders the loading of this and others tend to make them adventure games before I begin.

FAIRGROUND

Runs on: BBC B
Made by: Superior Software
Price: £7.95

I found this to be a well thought out game of its type. The scenario is a rifle range with a wide variety of objects passing in front of your gun and barely sufficient ammunition with which to hit them. Extra bullets can be earned by shooting the appropriately numbered boxes as they appear.

Bonus points are earned for shooting groups of letters in sequence within a time limit in addition to normal hits. Interest in the game is furthered by the inclusion of the infamous 'Smiley' who traverses the rear shelves only to periodically descend and steal bullets if not shot.

A second screen shows a man attempting to reach the side boundaries, when shot he runs the other way until shot again, continuing until his speed defeats and you return to the fair.

Strangely addictive with good sound effects and graphics and with easy key operation this game should keep a room in silence — providing the option of removing the background music is excercised with the first bullet. Incorporating a 'hold' facility and a hall of fame this game grows on you.

SKRAMBLE

Runs on: VIC-20 + 16K Joystick
Made by: Anirog
Price: £7.95

An expanded screen with double height characters making up a colourful title page showing all the aliens and fuel dumps. The game is very playable and makes good use of multicolour graphics, although this makes the display a little chunky. The game is the best replica of the arcade game that I have ever seen. There are six sectors through which you have to guide your rocket ship without the chance to turn around or back out of your mission.

The sectors include rocket attack, cavern, fire balls, city, maze, and finally the nerve centre of the defence that you have to destroy before you run out of fuel. Joystick only, on cassette, and needs 16K expansion.

PACMANIA

Runs on: VIC-20 + 3K
Made by: Mr Chip Software
Price: £5.50

No prizes for guessing what game this is like. Well, why buy this one when there are plenty of others on the market?

The answer is simple: it has twelve levels to suit everyone from the complete beginner to the experienced player. The fact that you cannot use a joystick is cancelled out by a nice little feature that allows you to choose your own key combination.

It has a difficulty level, speed variation and maze size all of three different ranges, visible or invisible maze walls and a choice of still or moving power pills.

The game itself is good with the ghosts becoming more intelligent the higher up the difficulty and speed levels you go. The maze is very good with dead ends and no warp tunnels. The walls themselves are very thin tubes which give a very clear display.

At the end of the games there is a ten place Hall of Fame which includes the choices of difficulty, speed etc which you made at the beginning.

I had no trouble with loading, so the only fault I can find is that when you are playing, the score is not particularly clear. The game is reasonably priced at £5.50 and all in all is probably the best "Pacman" style game for the VIC.

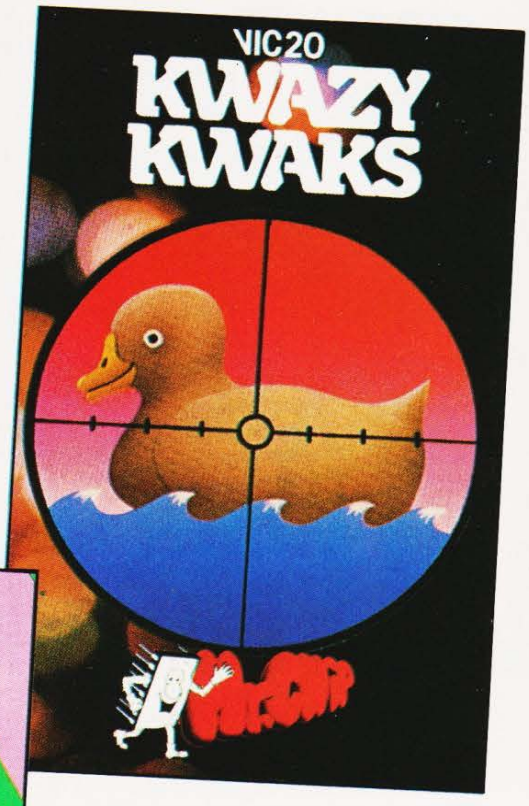
BITMANIA

Runs on: Commodore 64
Made by: Virgin Games
Price: £6.95

When the 64 was new and software was scarce this game might have been welcomed. Time has however moved on and we have come to expect programs that use the excellent sound and graphic facilities of the machine to the full. This offering fails to make the grade.

The scenario has you trapped inside the memory of the 64 where you must evade or destroy the constant stream of bits hurled at you by the CPU. The bits are simply a variety of user defined characters with little original or exciting while sprite graphics are used only to provide a moving background. Little use is made either of the sound facilities and indeed perhaps the most impressive part of the program is the use of graphics and music on the title pages.

Altogether we really have a right to expect better and with better available this program is unlikely to find a place in many collections.



KWAZY KWAKS

Runs on: VIC-20
Made by: Mr Chip Software
Price: £5.50

Kwazy Kwaks is a brilliant replica of the arcade game 'Carnival'. Another great game by S Southern of Mr Chip.

Shoot the ducks and rabbits to gain points, and numbers to gain bullets. But watch out for those low flying ducks who eat up your bullets, the faster you shoot the targets with fewer bullets the more points that you get.

The concise instructions make this game easy to follow. This game is easy to use on joystick as well as keyboard control, with left, right, and fire movements. The characters on screen are double height, the screen is expanded and hi-resolution. The graphics are easy to follow, so the screen is uncluttered and readable.

The carnival music can be turned off by pressing the shift-lock key which is useful if you get annoyed with it.

A certain must for all VIC owners.

REVIEWS

SOFTWARE

NOC A BLOC

Runs on: BBC B
Made by: Vigin Games
Price: £7.95

Whilst not being totally alone in nature this game offers features which make its playing enjoyable if not compelling.

The program loads well and opens with sensibly laid out and uncomplicated instructions; these include the offer of joystick option which I preferred. Within the playing area are found blocks around which you, as a red bird, are pursued by aliens called 'spods'. The blocks when pushed by you either move or crumble, when moved any unfortunate spot in their way is crushed.

Spods can be temporarily immobilised following their contact with the outer boundaries after suitable energising by you, they can then be trampled on and eliminated. Bonuses are awarded throughout the mult-screen format of the game for time lapsed and for the lining up of suitably marked blocks in a manner prescribed.

Given the confines of my progression I did not find later screens relatively more difficult neither could I rate the graphics more than above average in quality.

Although only 'high score' was illustrated the aim of the game being to kill spods and accrue points still had me reincarnating and coming back for more.

CHESS

Runs on: BBC B
Made by: Computer Concepts
Price: £8.95

Computer Concept's latest version of their chess program would satisfy both novice and master alike.

The instruction booklet provided gives thorough but concise explanation to the superb flexibility and detail offered. Not only is it possible to select board and piece colour, level of play, and duration you can even consult the computer as to the wisest move you can make yet force it to think again over a move that it may wish to make. An action replay of the game can be summoned or you can retrogress move by move thereby enabling complete analysis of your situation; this is still furthered by the Save to tape or disc facility upon completion.

From the high resolution graphics through the total control of skill and level to the technicalities of en passant and castleing this programme is complete.

It is advertised as being 'quite simply the best chess game available' — I for one wouldn't doubt it.

WIDOWS REVENGE

Runs on: Commodore 64
Made by: Bubble Bus
Price: £6.99

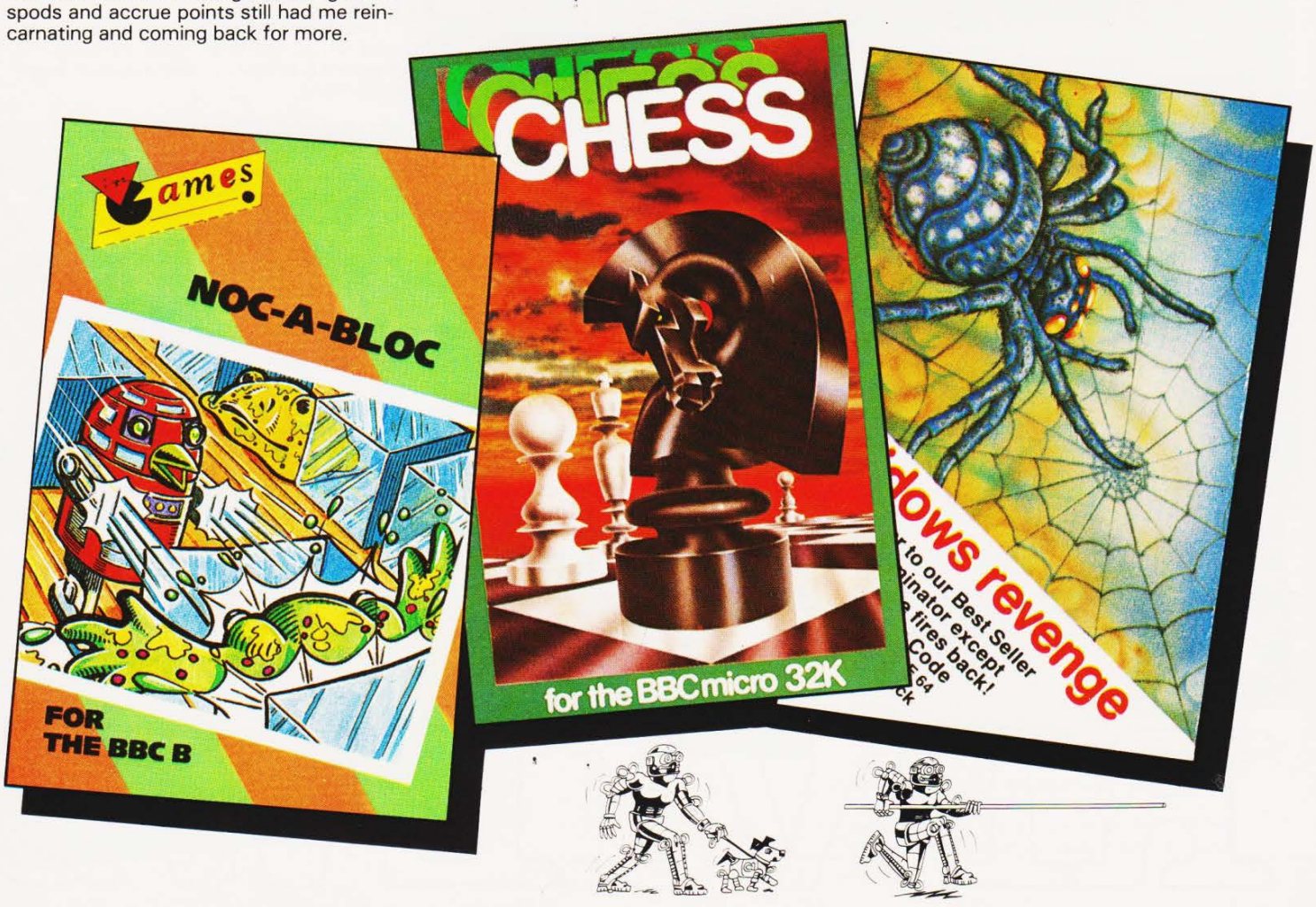
Billed as the sequel to Exterminator from the same company, this is a further variation of the Centipede theme.

The main difference on this occasion is that the warrior ants, which appear to have ousted the centipedes, can actually shoot back. Pest control definitely becomes a more dangerous task.

All the same this lacks some of the refinements of the original. The graphics are slightly cruder in design and the motion is less smooth. There is a two player option but there is no pause facility and no keyboard alternative to the joystick although as the joystick is used in part 1, the control, back arrow, 1, 2 and fire keys will operate albeit awkwardly.

Sound too is less impressive so that the option of turning it off would have been welcome but this too has disappeared in the changeover from Exterminator.

All in all this program suffers from the Rocky, Jaws and Superman syndrome — sequels do not always stand comparison with the original. Still I suppose it's only fair that the insect life of the garden should have a chance to strike back!



REVENGE OF THE MUTANT CAMELS

Runs on: Commodore 64
Made by: Llamasoft
Price: £7.50

Life for anyone writing commercial programs for the Commodore 64 used to be fairly easy. The vast majority of stuff being poorly put together sprite and sound programs or simple re-writes of VIC or PET stuff, with a few exceptional programs such as Virgin's Falcon Patrol standing out from the crowd or being exorbitantly expensive American software.

Now at last some British software is becoming available to show that the 64 is a wonderful machine. Perhaps the best program around is Revenge of the Mutant Camels by Jeff Minter. I was never a great fan of Attack of the Mutant Camels but this program is vastly superior. A friend described it as a cross between Manic Miner and Planetoids, however it has much more in common with the former than the latter.

You control a Star Wars AT-AT like camel capable of jumping great heights and telephone boxes, spitting laser bolts, and being protected by a neutronium shield. A thread of wry wit runs through the topics for the 42 sheets. From the obvious to the subtle, careful with that Eugene, no doubt a side swipe at Eugene Evans of Imagine, protrayed as he is in Manic Miner as well as being the name of the Pink Floyd track. Some of the sheets are very funny. Inkey, Blinkey, and Thud! has you battling against ghosts and pacmen.

Manic Minter has you avoiding dozens of camels being sheperded by Minter himself. Telecoms cumupance has you doing battle with telephones, telephone boxes, and 10 pence pieces, all of which are very nasty to touch.

The program is something of a soapbox for Minter. It starts with extensive and very funny credits of everyone including his dog and plays a great tune. The game shows that camels and llamas are 'llovely', you should be especially careful of all British Telecom property, and that "no cruise is good news" a CND vein that runs through a lot of the screens.

Llamasoft claim that it should take about three months of practice to get through all 42 screens, after which it just gets harder.

The program is recorded on both sides of the tape, once in normal format and once in TURBO format. This allows the 40K program to load in 1½ minutes instead of the 18 it takes normally. I tried this with the old style C2N and a variety of adaptors which allow "normal" cassette recorders with the 64 and found the TURBO unreliable. However on the new style C2N it worked perfectly and the slow copy was usually all right with everything else. At £7.50 it is exceptionaly cheap and I cannot think of anything I would recommend more wholeheartedly to a 64 owner. Buy it and prepare to stand by your beast.

STAR DEFENCE

Runs on: VIC-20 + 16K + Joystick
Made by: Anirog
Price: £7.95

A colourful title page exposing aliens, such as mutants and space ships. A fairly good copy of the arcade game 'Defender' with a few extras thrown in. You have the conventional 'smart' bomb to destroy everything on the screen, and hyperspace to transport you to another quadrant. The extras include a star gate to transport you to where a lander has just adbucted a humanoid. Inviso gives you five seconds of invisibility and immortality for each life.

If you have four rescued humanoids under your ship you can fly into the star gate and be transported over three attack waves. You can play with one to four players and there are two speed levels. The game can be paused and restarted at any time. Joystick only, needs 16K expansion, cassette.

EXTERMINATOR

Runs on: Commodore 64
Made by: Bubble Bus
Price: £6.99

This is yet another variation on the Centipede theme but to be fair it is probably one of the better versions with some novel features.

Much of its interest lies in the good use of the graphics and sound. There is a well drawn eagle with a fascinating wing motion and a cry which sounds more like a seagull than a bird of prey. There's also a spider realistic enough to send a few shivers down sensitive spines.

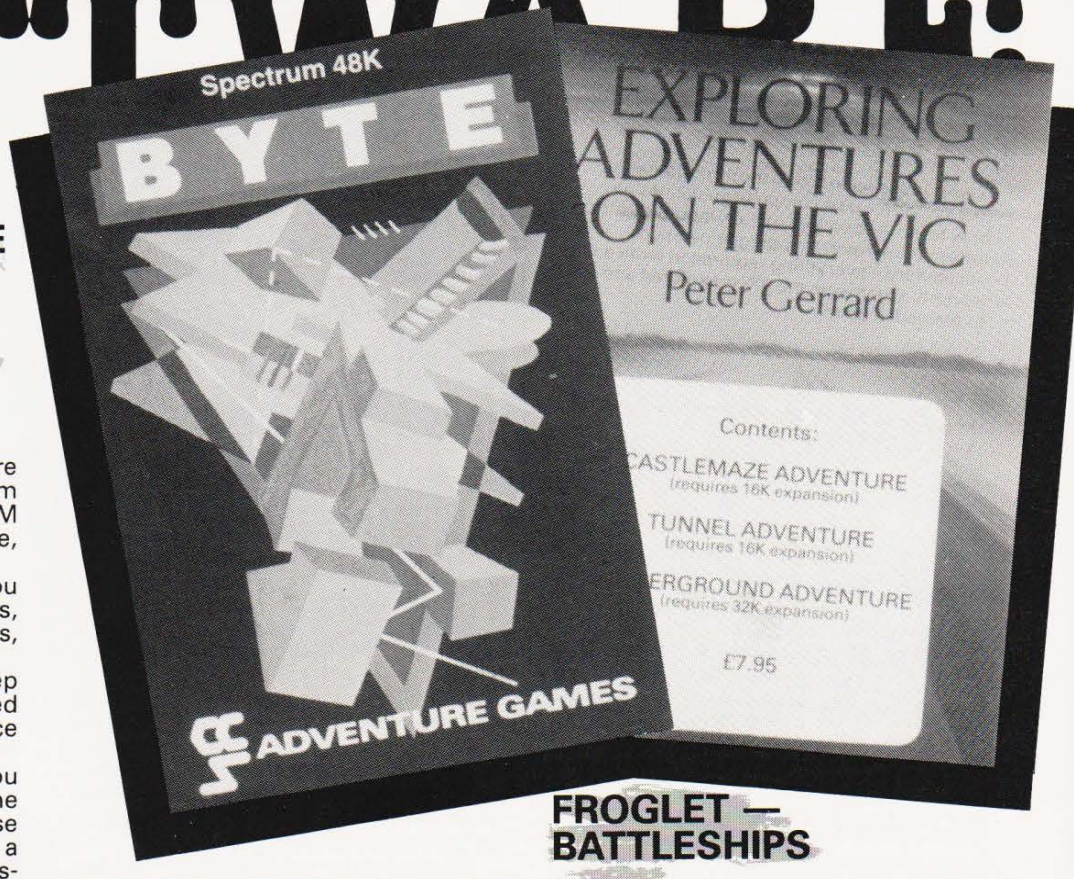
Play can be controlled from the keyboard but a joystick is definitely preferable. Up to nine players can be selected using the numeric keys and other useful features are a pause key and the ability to turn the sound off if it should get a bit wearing.

Easy to start with, the level of difficulty soon builds up though further scoring possibilities are added by the appearance of a scorpion which scuttles menacingly across the screen.

Just enough then to lift it above the competition and make it a worthwhile buy.

REVIEWS

SOFTWARE



EXPLORING ADVENTURES ON THE VIC

Made by: Duckworth
Runs on: VIC 20 + 16K and 32K Expansion
Price: £6.95

Three Adventures on one tape are included in this exciting package from Duckworth. For the first two, 16K RAM is required, and for the final adventure, 32K.

Castlemaze Adventure has you exploring an old castle, with rooms, corridors, mazes, black knights, spiders, pirates, and sourcerers.

Tunnel Adventure places you deep underground in magical caves filled with poisonous snakes and fierce animals.

Underground Adventure traps you inside a vast cavern searching for the key to release you. The format of these three games is standard, with first a description of your location being displayed. This is followed by a list of items visible and a list of exits.

Move around these mind-mazes by typing in two-word commands. There is no guarantee that your intentions will be understood, but the computer has been programmed with a fairly wide vocabulary. You may pick up and carry various items that you find, to use later during the game.

All three adventures are well written and challenging, with, as is customary in Adventures, the Help routine being sufficiently cryptic not to make the game too easy (What DID Hansel and Gretel do?).

Time unfortunately, has not yet permitted me to solve the Adventures, so if you find difficulty in completing them, a book by Peter Gerrard (the author of the programs) is available from Duckworth at £6.95 listing the three programs, together with tips on how to write your own Adventures.

BYTE

Made by: Cases Computer Simulations
Runs on: 48K Spectrum
Price: £5.00

Much of the commercial software available loads a screen file before the main file to give the user something pretty to look at while cursing himself for choosing such a slow cassette based system and wondering if he can afford the micro-drive next month. So, why does Byte load the picture as the very last file after waiting five minutes faced with a blank screen?

After you select one of the seven skill levels you are offered the opportunity to purchase a computer system. Being a faithful Spectrum user I chose the Sinclair machine and proceeded to spend the rest of my alloted cash on various peripherals. The section of the game is very tedious and poorly error trapped. The computer goes on to draw a picture of a grave stone with the caption 'just kidding'. All very nice, but when you have to wait a minute it is a bit pointless.

The game entails exploring the system (memories of TRON?) and buying various bits and pieces. These include teletext modules and estimating circuits. Each keystroke is followed by about seven seconds of noise (the inlay says music), making entry extremely tedious. You are also treated to such insults as 'you moron'.

The whole game involves moving up, down, left, right, forward, and backward — does this really justify the 'true 3D adventure' boast? There are monsters to do battle with and other tasks. The game is written in BASIC and is consequently very slow and it jumped my system more than once.

FROGLET — BATTLESHIPS

Made by: Timeless Software
Runs on: TI 99/4A with Extended Basic
Price: £4.95

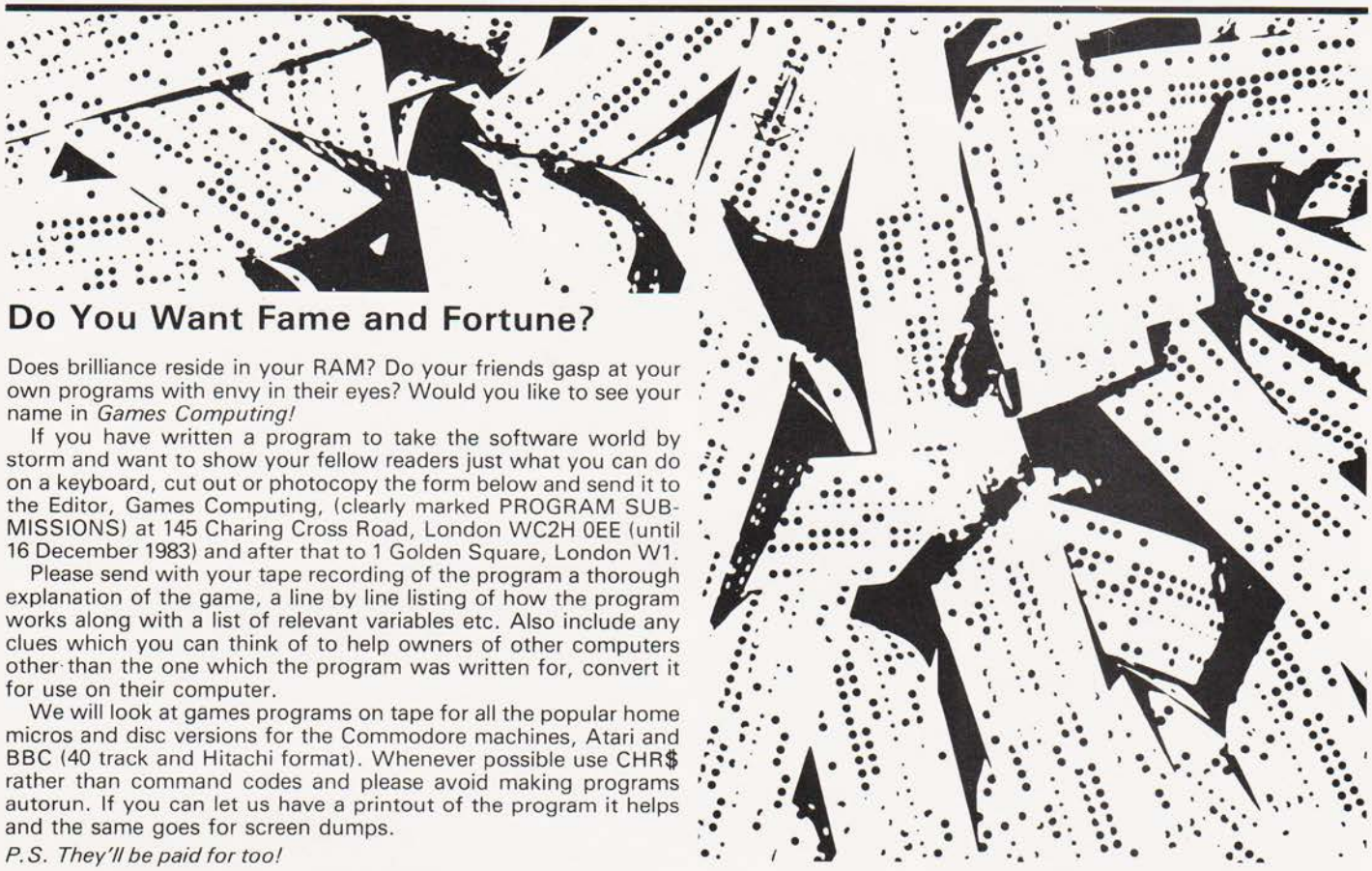
This tape contains two programs — Froglet, a version of Frogger, and that well known favourite, Battleships.

In Froglet, using either keyboard or joystick, you must race against time to safely cross road and river to each of your four frog homes and so obtain a high score. You have traffic to avoid, of course, and the river must be jumped across using the floating logs, lily pads and turtles. When near to a home an unfriendly occupant may appar, in which case a safer place to land must be found. You have three lives in every game, but as each screen is completed the next becomes more difficult.

In Battleships one player competes against the computer, the winner being the first to locate and destroy the other's fleet. There is a choice of three skill levels, each of which controls how intelligently the computer's guesses are made. The screen displays two 10 × 10 grids — one to record your guesses, the other to show the deployment of your fleet and each guess made by the computer. The only instructions provided are those on screen. Unfortunately, they appear so fleetingly that about three RUNs are necessary to read them all properly.

REVIEWS

PROGRAM SUBMISSIONS



Do You Want Fame and Fortune?

Does brilliance reside in your RAM? Do your friends gasp at your own programs with envy in their eyes? Would you like to see your name in *Games Computing!*

If you have written a program to take the software world by storm and want to show your fellow readers just what you can do on a keyboard, cut out or photocopy the form below and send it to the Editor, Games Computing, (clearly marked PROGRAM SUBMISSIONS) at 145 Charing Cross Road, London WC2H 0EE (until 16 December 1983) and after that to 1 Golden Square, London W1.

Please send with your tape recording of the program a thorough explanation of the game, a line by line listing of how the program works along with a list of relevant variables etc. Also include any clues which you can think of to help owners of other computers other than the one which the program was written for, convert it for use on their computer.

We will look at games programs on tape for all the popular home micros and disc versions for the Commodore machines, Atari and BBC (40 track and Hitachi format). Whenever possible use CHR$ rather than command codes and please avoid making programs autorun. If you can let us have a printout of the program it helps and the same goes for screen dumps.

P.S. They'll be paid for too!

★ **PLEASE COMPLETE IN BLOCK CAPITALS**

Your Name Age

Program Name

Computer/memory size it runs on

Amount of memory program occupies

Other computers/memory size which your program runs on

Does your game need joysticks? Yes No

Any known bugs? If so, what are they?

Have you sent your game to another magazine Yes No

Is it original/or a variation on a theme?

Your Address

Telephone Number

Times to contact you

COMPETITION

COLLECT A COLECOVISION CONSOLE IN A GREAT GAMES COMPUTING NAME THE FRAME COMPETITION!

One of the hottest games systems now on the market is being *given away* by its maker CBS in a quick and easy competition requiring just a little games know-how.

The **Colecovision** system is a relative newcomer to the video games scene but since it was launched last year both the system and its games catridges have gained a very strong and dedicated following.

What seems to be the system's strengths are its great graphics which closely rival those achieved by Atari, the market leader in this field, and CBS's policy of only producing games for the system which are bone fide versions of arcade games under licence. To do this they always buy the rights of the original arcade that they want to reproduce. Of course, this is the correct way to go about software reproduction and means that games players will ultimately have much better games to play.

Loads of Software

So far CBS produce Atari compatible cartridges (only released at the end of 1983) or great games like Carnival, Donkey Kong, Gorf, Mouse Trap, Venture, and Smurf with the very popular Zaxxon game soon to be available for the machine too. These are just some of the 26 games currently available for the **Colecovision** itself.

Versions are also on sale to run on the Mattel Intellivision system including Donkey Kong (and Donkey Kong Junior), Carnival, Mouse Trap, and Adventure.

The very latest release for the **Colecovision** is a version of Time Pilot which all at CBS are 'very excited' about. With a bit of luck this brand new game should hit shop shelves during January.

Plenty Of Prizes

Not only has **CBS Colecovision** kindly agreed to give away a **Colecovision**, also up for grabs is the newly launched Atari adaptor. This great little device will enable you to use Atari compatible cartridges with your **Colecovision** console. Just imagine what a boost that will be to your games library! In addition to all the games specifically for the Colecovision you'll also have all the great arcade games which Atari has brought out over the years. And on top of all that is an extra prize consisiting of a range of Atari games cartridges from **Colecovision** for you to use with the complete system.

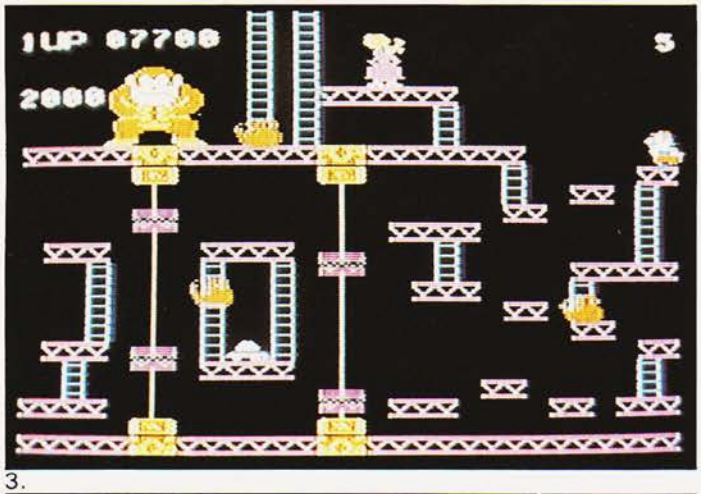
How To Collect Your Colecovision

You'll see printed on this page pictures of frames from best selling **Colecovision** games. All you have to do is put on your thinking cap and name the game frames. Study the picture carefully and see if you can recognise the characters in the screen shot. It's not too difficult because the pictures are in colour so everything should be easy to distinguish.

Don't be alarmed if you think you can only name the game if you already have a **Colecovision** system. You can't. All you must do is use your imagination and find out about the games from catalogues, advertisements or look in your local video games store and see if they have got any **Colecovision** games in stock. But make sure you don't keep pestering them with constant requests to see what Colecovision stuff they have in stock. We wouldn't want to upset them after all.

So, now you know what to do it's all down to you. Remember to read the competition rules very carefully too before sending in your entry. If it is not properly addressed it may not reach us and you wouldn't want to jeopardise your chance of winning this competition, would you?

..



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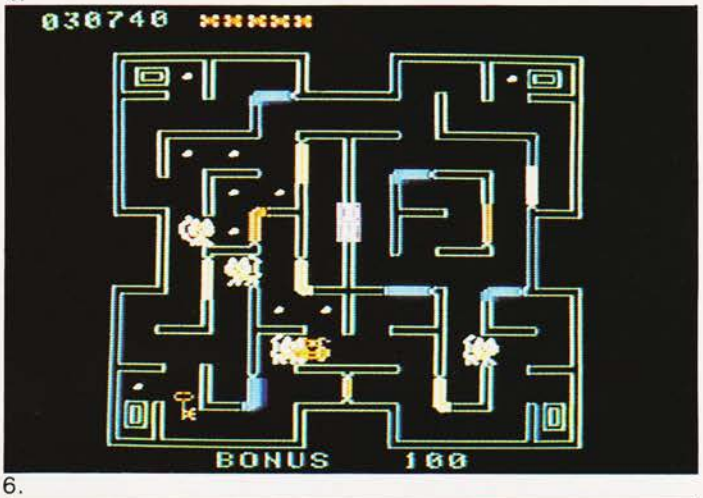

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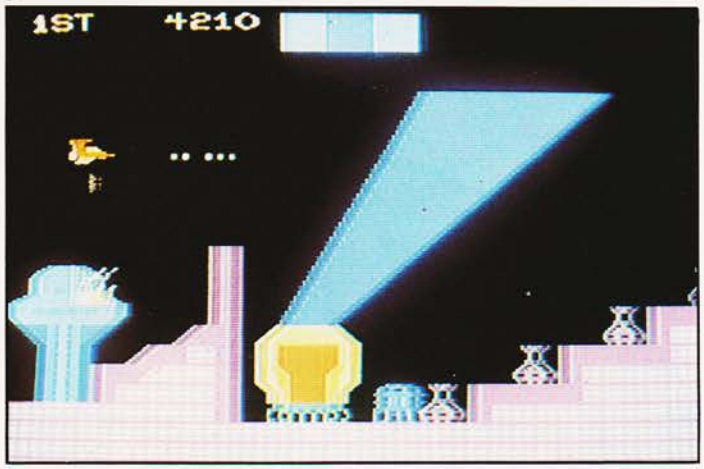

Competition Rules

1. This competition is open to all UK readers of *Games Computing,* except employees of Argus Specialist Publications Ltd, their printers and distributors, employees of CBS Colevision or anyone connected with them.

2. As long as the correct coupon is used for each entry there is no limit to the number of entries per person, photocopies will not be accepted.

3. All entries must be postmarked before April 30, 1984.

4. The prizes will be awarded to the first correct entry picked out of the bag.

5. No correspondence will be entered into with regard to the competition results and it is a condition of entry that the editor's decision is final.

6. The winner's name will be published in a future issue of *Games Computing* and he/she will be notified by post.

Send your entries to **Games Computing/Colecovision Competition** with this coupon. Please write in block capitals.

GAMES COMPUTING/COLECOVISION COMPETITION — April 1984

The Name of the Games are: 1. . . . . .

2. . . . . 3. . . . . .

4. . . . . 5. . . . . .

6. . . . . .

Name . . . . . .

Address . . . . . .

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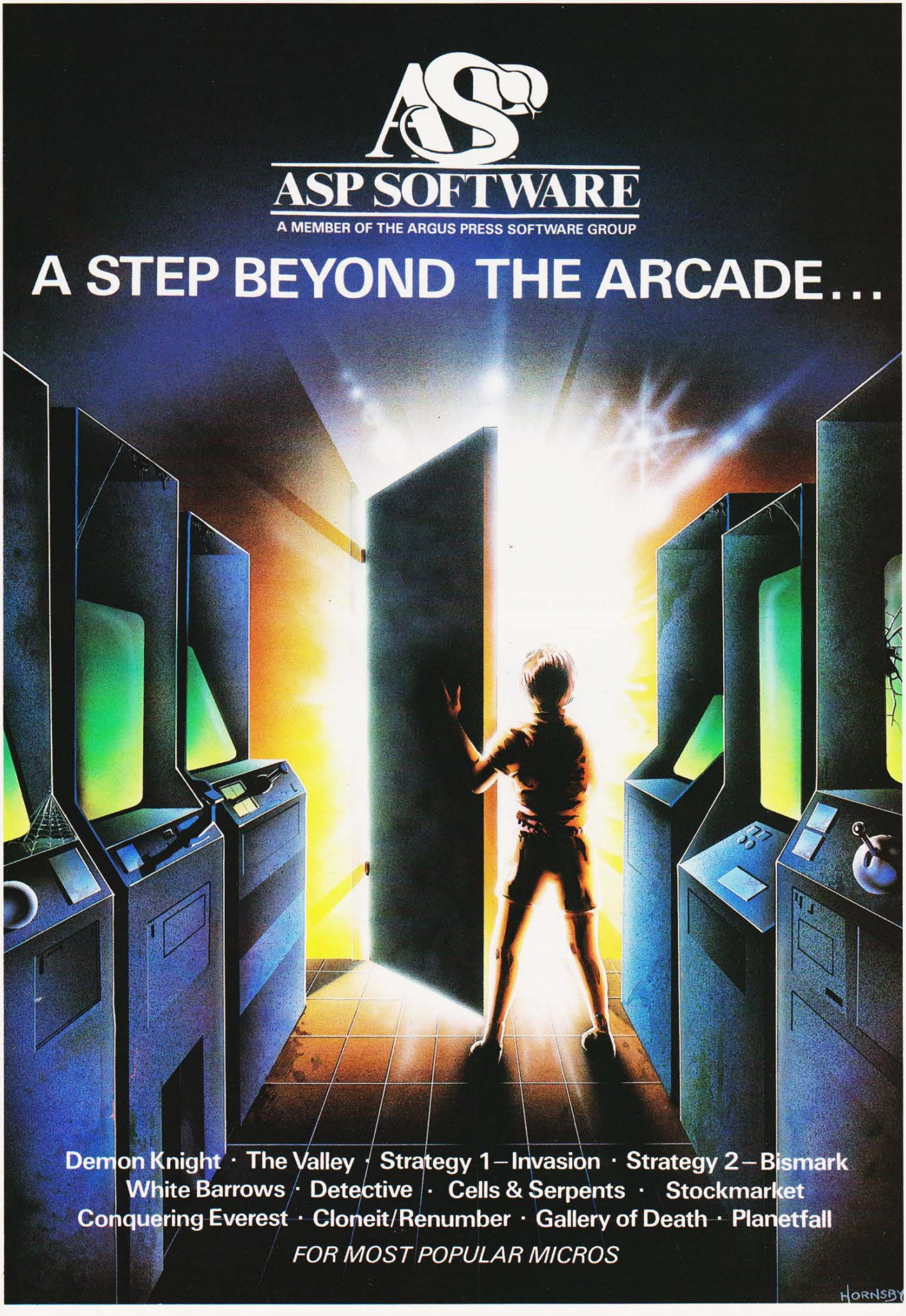
. . . . . Postcode . . . . . .

Telephone number . . . . . Signature . . . . . .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WHAT DO YOU GET?

The bulk of our cassettes are now made by the factory which produced the Horizons tape. Programs are recorded twice and carry on the reverse side an audio narrative to supplement the operating instructions. Where appropriate, cassettes are accompanied by a comprehensive and clearly written instruction manual.

48K SPECTRUM

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Fascinating and realistic simulation of an entire football season. Name your own teams if you wish (English league provided on cassette). Rate each team from one to nine in various success categories such as attack, defence, manager, etc. Watch the season unfold. Includes knock-out cup option.

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Create full colour high-res pictures and store them on cassette for use as titles or background screens in other programs. Or just have fun doodling and build up a cassette library of your creations. Slide show option allows you to review pictures stored on cassette.

16K ZX81

Here is a selection of titles still available for ZX81. Send s.a.e. for illustrated catalogue. These are the ZX81 equivalents of the Spectrum programs described above. Although similar in concept the specifications fall short of the descriptions given for the Spectrum.

"FOOTBALL-LEAGUE"	**Forerunner of "Day of the Match"**	**£4.00**
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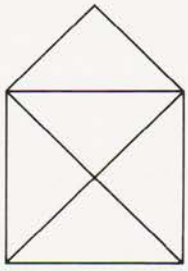
PUZZLES

For no reason that is very convincing, this month's puzzles have squares as a common theme. This is reflected in the shape of the puzzles or their titles, where shapeless.

1 SQUARE DANCE

An easy one to start with — can you draw this without lifting pen from paper or travelling the same line twice?



2 BOX NUMBERS

Apologies if this is a little too much like homework, but given that each letter of the alphabet represents a different number between 0-9

and that $\frac{A\,C\,E\,D}{B\,D} = \frac{A\,I\,A\,C}{D\,C}$

$$A\,B^3 = D\,G\,C\,B$$

$$C\,J\,H\,B = F\,G\,J \times J\,F$$

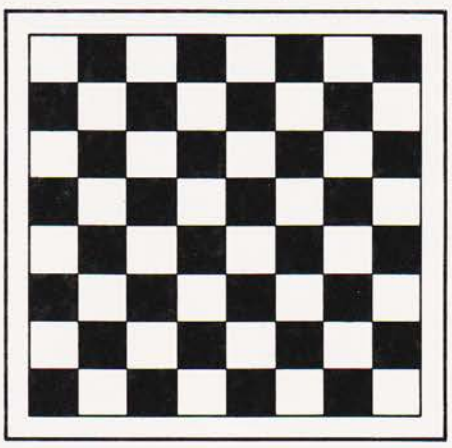
in the following grid

A	C	E	D
I		F	G
A	B		C
C	J	H	B

then what is B J × F G ?

3 ALL SQUARE

This game gives every appearance of being simple too — all you have to do is place eight pieces on the chessboard so that no two pieces are in a straight line — horizontally, vertically or diagonally.



ANSWERS ON p96

SPECIAL SQUARE COMPETITION

4 MAGIC SQUARE

Since squares are this month's theme, we must include a magic square — simply a square filled with rows of numbers that add up the same — across, down or diagonally. A true magic square will use all different numbers — hence

2	7	6
9	5	1
4	3	8

Can you devise a magic square for a four sided square using 1-16?

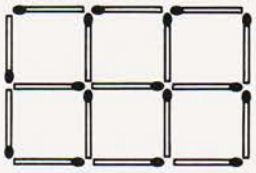
Now that is easy enough — you either spend ten minutes working it out — or look it up in a book. What we would really like to see is *your* computer program, devised to solve the above problem. We will publish the most elegant or simplest program in a future issue, and use this (hopefully) as the basis for more magic square problems in the future. So get to work — and send them in!

5 SQUARE PEGS

Talking of squares, here's an old chestnut you might have forgotten. Join the nine points with four straight lines that pass through each point just once, each starting where the other left off.

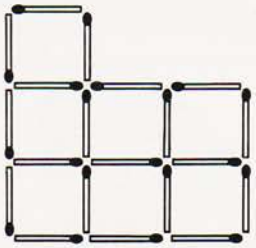
6 SQUARE RIGGED

Some matchstick teasers:
Take away five matches to leave three squares and no odd matches



Add five matches to make ten

Take away three matches and replace them to make five equal squares.



By the way, breaking or burning matches is cheating!

PUZZLES

7 SQUARE MEALS

Lord Gilberdyke once committed a heinous crime at the Court of Falkovia — sleeping through all fifteen verses of the Falkovian National Anthem. His punishment was severe — banishment to the nearby island of Donrovia with all his household for five months.

Arriving there they found the punishment even more harsh — for the island was inhabited by cannibals, and it was their custom to devour *two* people every full moon.

As the exiled party numbered Lord Gilberdyke, his wife and eight retainers, and the moon was waning, it was clear that only two would survive the exile.

The wily Lord Gilberdyke thought quickly and then summoned his household together. "I intend to be entirely democratic in this matter," he lied; "we shall all stand an equal chance of appearing on the menu."

"Each month we shall form a circle, standing in the same positions each time. I shall pick a man at random and start counting clockwise to 13. The unlucky number 13 will take his place in the pot, and I shall start again from the one next to him, again counting to 13. The following months I shall always start from the one after the thirteenth man — or woman."

Now it was his plan to solve all his family problems this way — to be rid of a meddlesome wife and expensive retinue — all except for Miss Bipop, the chambermaid, who happened to be young and reasonably attractive.

At full moon the next month the circle formed according to Lord G's instructions. But in the ensuing time he had forgotten exactly where to start counting, and found himself being dressed for dinner — as the first course. He had made a slight error. Where did he start counting — and where should he have? This is how he set out the circle . . .

Answers for March

1. HEADS YOU WIN

A fifty pence piece and a five pence piece. (One was not a five pence piece — but the other was!)

2. MICROPROCESSOR

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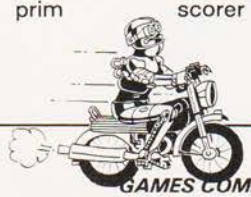

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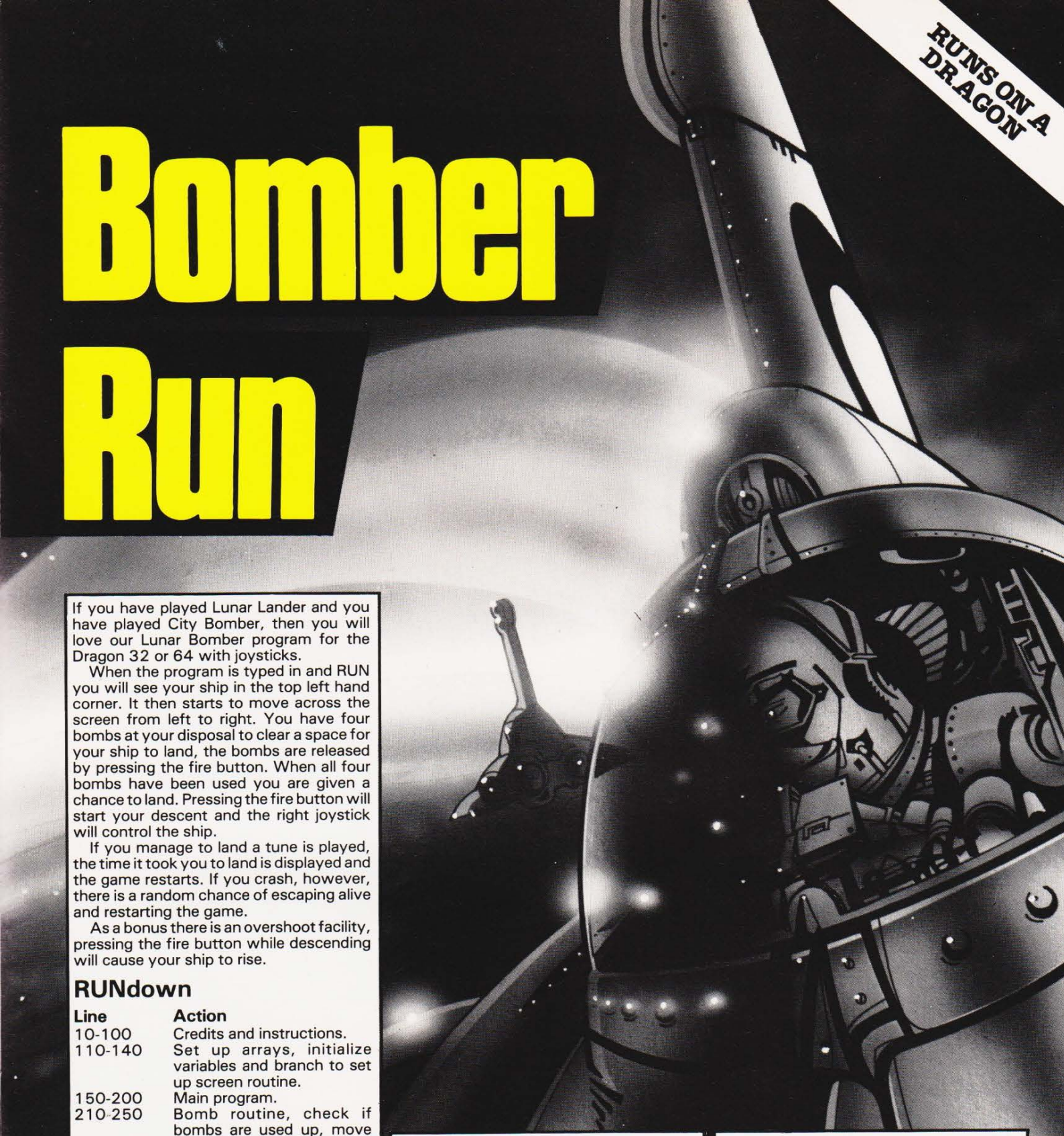
RUNS ON A DRAGON

Bomber Run



If you have played Lunar Lander and you have played City Bomber, then you will love our Lunar Bomber program for the Dragon 32 or 64 with joysticks.

When the program is typed in and RUN you will see your ship in the top left hand corner. It then starts to move across the screen from left to right. You have four bombs at your disposal to clear a space for your ship to land, the bombs are released by pressing the fire button. When all four bombs have been used you are given a chance to land. Pressing the fire button will start your descent and the right joystick will control the ship.

If you manage to land a tune is played, the time it took you to land is displayed and the game restarts. If you crash, however, there is a random chance of escaping alive and restarting the game.

As a bonus there is an overshoot facility, pressing the fire button while descending will cause your ship to rise.

RUNdown

Line	Action
10-100	Credits and instructions.
110-140	Set up arrays, initialize variables and branch to set up screen routine.
150-200	Main program.
210-250	Bomb routine, check if bombs are used up, move bomb and start explosion.
260-320	Landing routine, read joystick, check for safe or crash landing and check for overshoot.
330-380	Safe landing routine, print messages, play tune.
390-410	Crash routine, play tune, decide whether or not to start game again.
420-540	Set up screen, draw ship and bomb and store them into arrays SH and BM, draw random landscape, plots stars at random and draw planet in the distance.

Main Variables Used

X	X coordinate of ship/bomb.
Y	Y coordinate of ship/bomb.
U	Number of bombs used.
S	Time gone by in seconds.
BT	Best time.

Conversion Clues

This program should not be hard to convert as Dragon BASIC is fairly standard. Read through the notes on hot it works to get an idea of what is going on and insert the appropriate graphics commands where needed as these are the only major difference from standard Microsoft BASIC. Here are a few points.

GET Copies an area of the screen and stores it into a previously dimensioned array for later use.

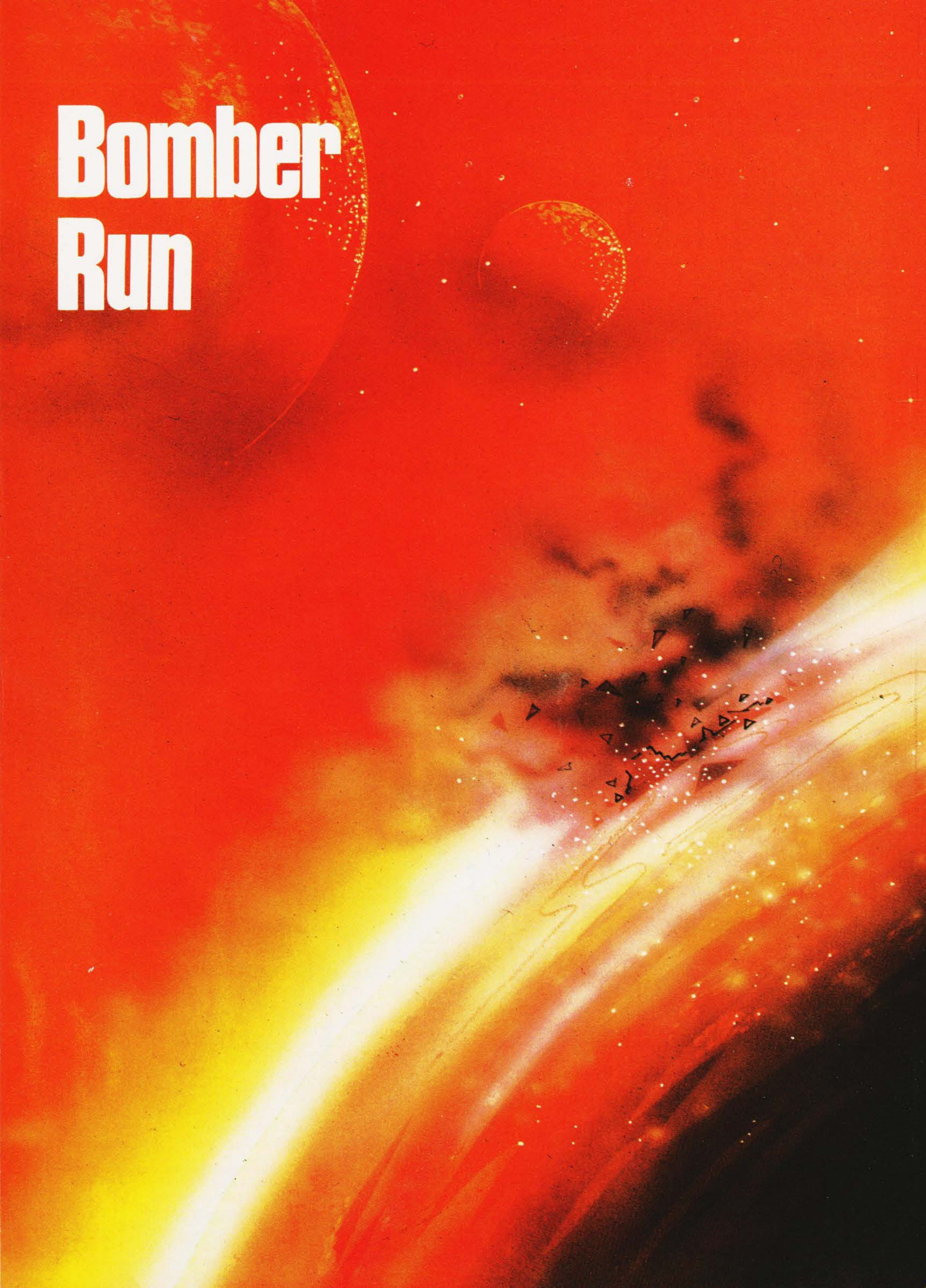
PUT Is the command which puts the arrays contents back onto the screen at the coordinates given.

PSET Is the Dragon equivalent of **PLOT**.

CIRCLE Draws a circle with centre X,Y a diameter of D, and in colour C. The syntax is CIRCLE(X,Y),D,C. This statement can be left out.

All **DRAW** statements that have been used are for drawing the game shapes, namely the ship and the bomb.

Bomber Run



BOMBER RUN

```
10 REM     BOMBER RUN
20 REM BY HARDIP MOTHADA
30 REM       AGED 14
40 REM       7/7/83
50 BT=30
60 CLS:PRINTTAB(10);"LUNAR BOMBER"
70 PRINT:PRINT"YOU ARE IN THE CAPSULE OF AN     ATOMIC F
REIGHTER THAT IS BADLY  DAMAGED AND NEEDS REPAIRS.YOUR
 ONLY HOPE IS TO DROP CANISTERS  OF RADIO-ACTIVE WASTE
ONTO THE  SURFACE OF A DESOLATE PLANET IN THE MIDDLE OF
 NOWHERE.IF YOU CAN LAND YOU ";
80 PRINT"CAN MAKE THE REPAIRS  AND RETURN HOME"
90 PRINT@448," PRESS 'D' KEY TO START DESCENT":SCREEN0,
1
100 IF INKEY$<>"D"THEN 100
110 DIM SH(24),BO(8)
120 PMODE3,1:SCREEN1,0:PCLS3:COLOR3,1
130 U=0:S=0
140 GOSUB 420
150 TIMER=0
160 Y=0:FOR X=0 TO 200 STEP 2
170 PUT(X,Y)-(X+14,14),SH,PSET
180 PLAY"O2L255CFC":IF PEEK(65280)=126 OR PEEK(65280)=2
54 THEN GOSUB 210
190 NEXT
200 DRAW"C3":LINE(0,0)-(230,30),PSET,BF:GOTO 160
210 U=U+1:IF U>4 THEN DRAW"C3":LINE(0,0)-(230,30),PSET,
BF:Y=10:GOTO 260
220 FOR Y=30 TO 235
230 PUT(X+15,Y)-(X+25,Y+10),BOMB,PSET
240 NEXT
250 DRAW"C3":FOR I=1 TO 4:PLAY"O4L255T255ABCDEFG":NEXT:
LINE(0,0)-(230,30),PSET,BF:GOTO 160
260 X=X+2*((JOYSTK(0)<30)-2*(JOYSTK(0)>30))
270 IF X<1 THEN X=1:IF Y<10 THEN Y=10
280 Y=Y+3:PUT(X,Y)-(X+14,Y+14),SH,PSET
290 IF PPOINT(X,Y+15)=2 OR PPOINT(X+20,Y+15)=2 THEN 390

300 IF Y>51 AND( PEEK(65280)=126 OR PEEK(65280)=254) TH
EN LINE(X,Y)-(X+30,Y+30),PSET,BF:Y=Y-10
310 IF Y>176 AND PPOINT(X,Y+15)<>2 THEN 330
320 GOTO260
330 CLS:PRINTTAB(10);"LUNAR BOMBER"
340 S=INT(TIMER/50):IF S<BT THEN BT=S
350 PRINT"WELL DONE YOU HAVE LANDED SAFELY"
360 PRINT:PRINT:PRINT"YOU LANDED WITHIN "S"SECONDS"
370 PRINT:PRINT:PRINT"THE BEST TIME IS"BT"SECONDS"
380 SCREEN0,1:FOR I=1 TO 2000:NEXTI:PLAY"T303L4CEFGECED
CFCGFAGF":GOTO 120
390 CLS:PRINT@224,"        CRASH LANDING":SCREEN0,1:FOR
 P=1 TO 2000:NEXT P
400 IF RND(4)<>1 THEN PRINT@448,"NO SURVIVORS...NO SURV
IVORS...":SCREEN0,1: GOTO 410 ELSE PRINT@448,"   YOU SU
RVIVED,LUCKILY":SCREEN0,1:FORI=1 TO 2000:NEXT:RUN
410 PLAY"O1T2L4DFABB-":FOR I=1 TO 2000:NEXT I:CLS:END
420 DRAW"BM4,0;C2;S4BR4BD4D3L2R4ND6L4D6R4L6D4R2U4R4D4R2
U4L2"
430 GET(0,0)-(14,14),SH,G
440 PCLS3:DRAW"BM0,0;C5;BR4BD4;D5R1U5"
450 GET(0,0)-(10,10),BOMB,G
460 X=0:Y=185:LINE(0,165)-(X,Y),PSET
470 DRAW "C2"
480 X=X+RND(15):IF X>255 THEN X=255
490 Y=Y-RND(30)+13:IF Y>191 THEN Y=191:IF Y<0 THEN Y=0
500 LINE-(X,Y),PSET
510 IF X=255 THEN PAINT(1,191):PAINT(255,191):PAINT(128
,191) ELSE 470
520 FOR I=1 TO 25:PSET(RND(255),RND(120),5):NEXT
530 CIRCLE(245,10),9,4:PAINT(245,10),2,4
540 RETURN
```

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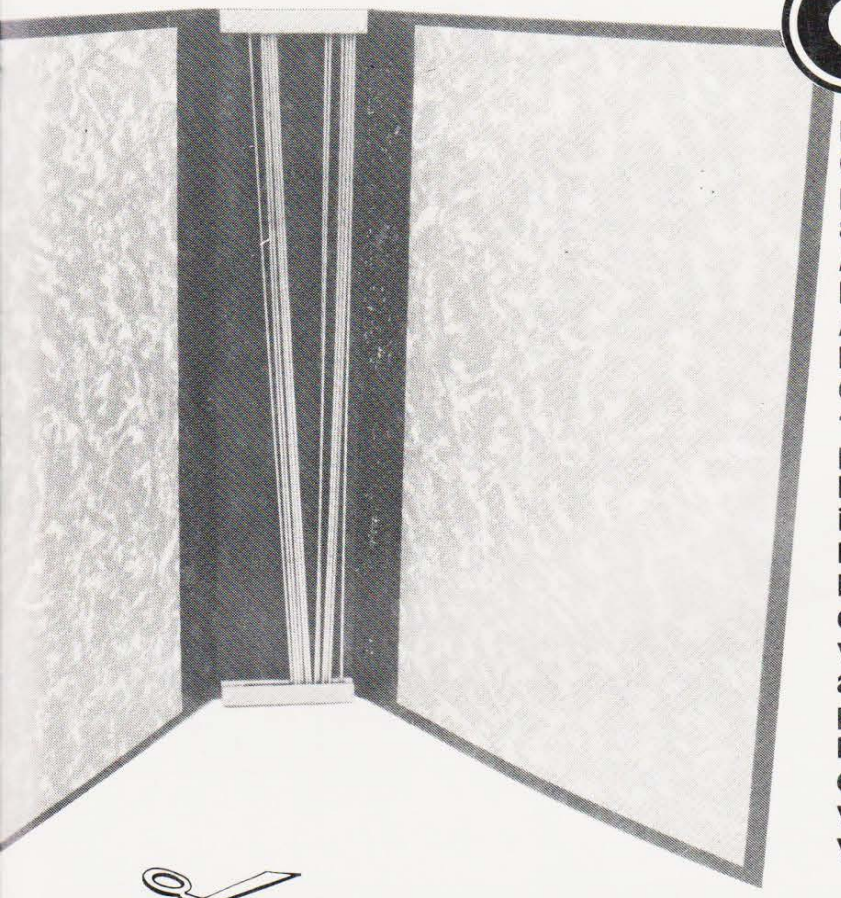

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RUNS ON VIC-20

GUIDED MISSILE

Zap the alien to bits with this arcade game for the unexpanded VIC-20.

In this version of a well known arcade game there is one alien and a 'spook' bomb that are out to get you. You control a space ship at the bottom of the screen that has a single missile launcher and can fire a missile that is guided by the motion of the ship.

The game uses high resolution graphics, full colour, and sound and yet can still fit into a totally unmodified and unexpanded VIC-20.

Controls are 'Z' left, 'M' right, and 'space' to fire.

RUNdown

Line	Action
1-2	Instructions option
3-9	Set up hi-resolution graphics
10-12	Set up variables
12-14	Set up screen
13-32	Main control loop
33-36	Destroy ship
37-41	Destroy alien or bomb
42-44	End game and tidy up system
45-71	Instructions

Main Variables Used

SH	Screen location of ship
MI	Screen location of missile
AL	Screen location of alien
BO	Screen location of bomb
UC	User defined character pointer
S1,S2,S3	Sound registers
V	Volume level
SC	Score
TI$	Time variable
C$	Option input

Conversion Clues

Almost impossible with the VIC as all the control of the sound and graphics is done via PEEKs and POKEs. A look through the VIC manual would tell you all you need to know about them. Commodore BASIC is very straightforward and converts easily to other micros, but I'm afraid that's your only consolation!

W
F
A

```
1 :PRINT"■■■■■■■■■■■■■■■INSTRUCTIONS(Y/N)";:INPUTC$
2 IFC$="Y"THEN45
3 PRINT"■■■■ SETTING UP GRAPHICS:       PLEASE WAIT!"
4 POKE36879,40:POKE52,28:POKE56,28:CLR
5 FORUC=7168TO7679:POKEUC,PEEK(UC+25600):NEXT
6 FORUC=7168TO7207:READA:POKEUC,A:NEXT:POKE36869,255
7 DATA16,56,108,84,84,124,40,68,16,16,16,16,40,40,16,16
8 DATA60,126,90,255,165,155,129,129,16,84,56,254,56,84,16,0
9 DATA0,14,17,14,0,8,139,255
10 PRINT"■":POKE650,128:TI$="000000":SC=0:POKE646,1:Y=30720
11 S1=36874:S2=S1+1:S3=S2+1:S4=S3+1:V=S4+1:SL=3:F=8182
12 SH=8130:MI=SH-22:AL=7742:FORG=1TOSL:POKEF,0:POKEF+Y,6:F=F+1:NEXT
13 PRINT"■■■SCORE="SC:PRINT"■■■■■■■■■■■■■■TIME="TI$
14 POKESH,0:POKEMI,1:POKEV,15
15 POKES1,0:POKES2,0:POKES3,0:POKES4,0:GETA$
16 IFMI<SH-22THEN19
17 IFA$=" "THENPOKEMI,32:MI=MI-22:GOTO19
18 GOTO23
19 POKEMI,32:MI=MI-22:POKES2,225:POKES3,195
20 IFMI<7724THENPOKEMI,32:MI=SH-22
21 IFPEEK(MI)=2ORPEEK(MI-22)=2THENSC=SC+50:GOTO37
22 IFPEEK(MI)=3ORPEEK(MI-22)=3THENSC=SC+10:GOTO40
23 IFA$="Z"THENPOKESH,32:SH=SH-1:POKEMI,32:MI=MI-1:POKES1,225
24 IFSH=8119THENSH=8141:MI=SH-22
25 IFA$="M"THENPOKESH,32:SH=SH+1:POKEMI,32:MI=MI+1:POKES1,225
26 IFSH=8142THENSH=8120:MI=SH-22
27 POKEAL-23,32:IFAL>7742THEN29
28 AL=AL+INT(RND(0)*21)+1:BO=AL+22
29 POKEAL,2:AL=AL+23:IFPEEK(AL)=0THEN33
30 POKEBO,32:BO=BO+22:POKEBO,3:IFPEEK(BO+22)=1THEN33
31 IFAL>8141THENPOKEAL-23,32:POKEBO,32:AL=7742
32 GOTO13
33 POKESH,4:POKEMI,32:PRINT"■■■■■■■■SHIP DESTROYED"
34 FORX=15TO0STEP-0.05:POKES4,135:POKEV,X:NEXT
35 PRINT"■":SL=SL-1:F=8182:IFSL=0THEN42
36 GOTO12
37 PRINT"■■■■■■■■■■■■■■■
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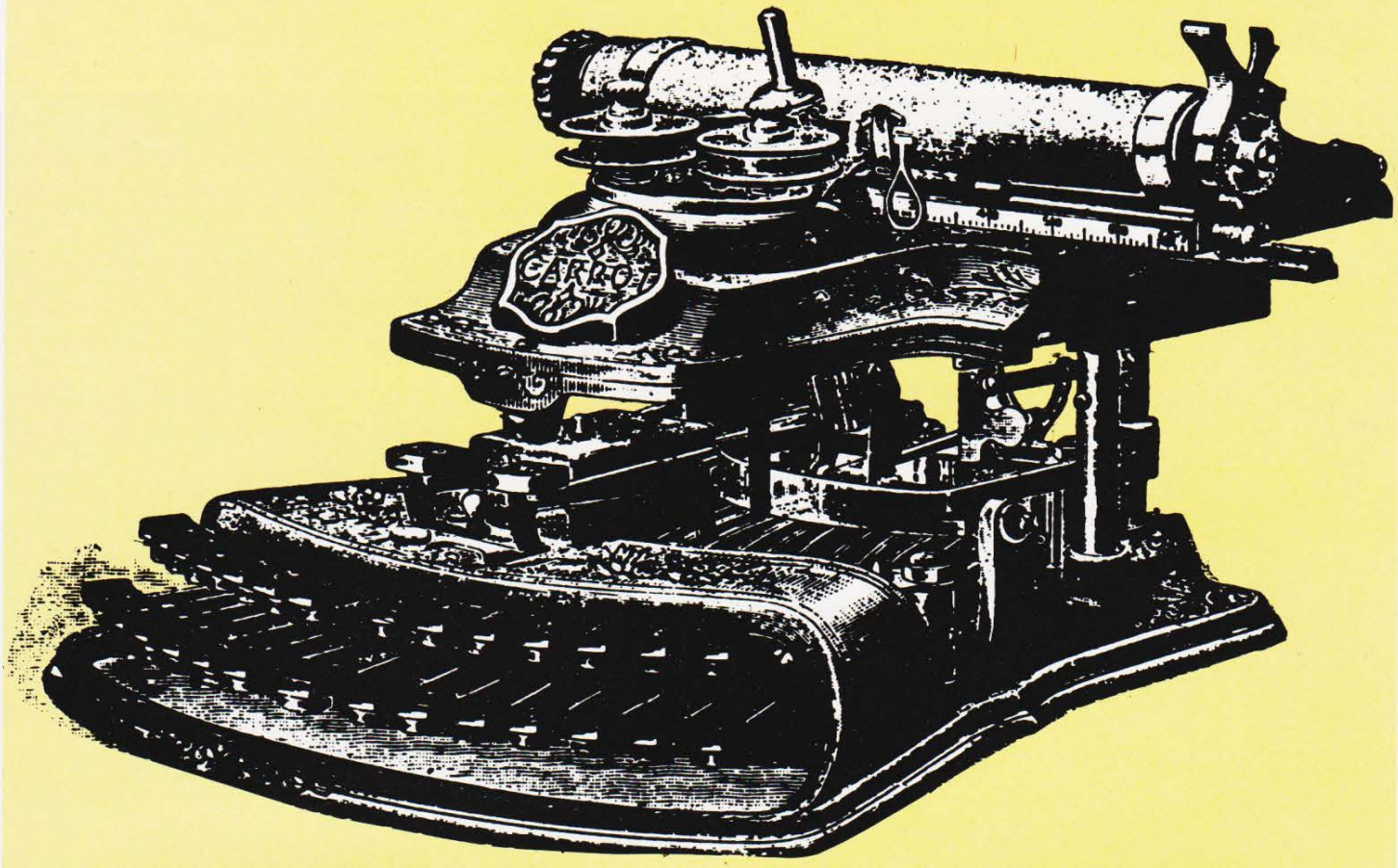

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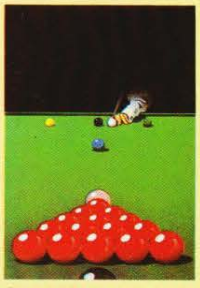

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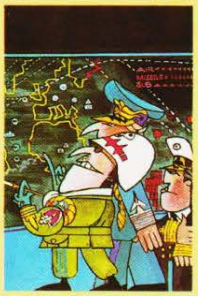

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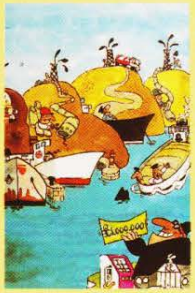

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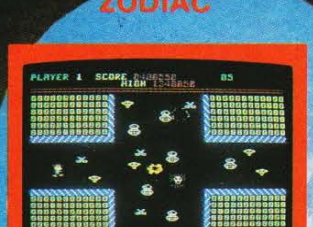
THE NAME FOR

ZODIAC



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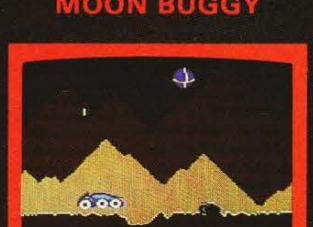

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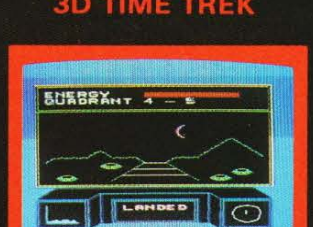

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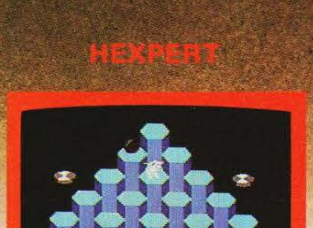

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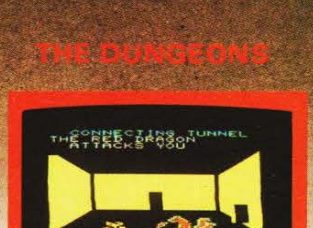

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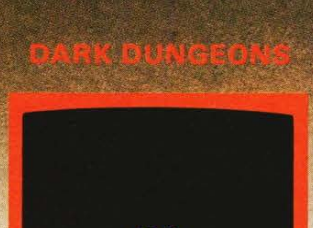

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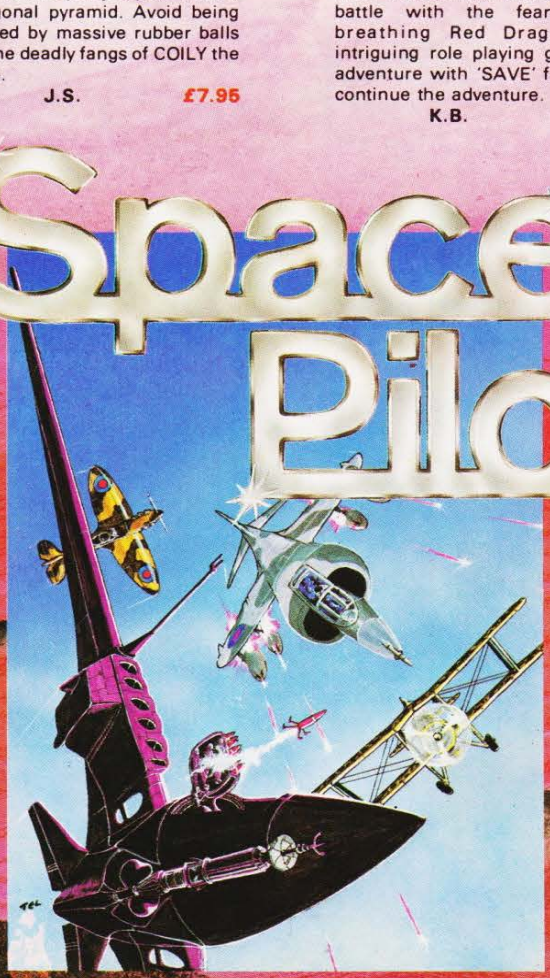

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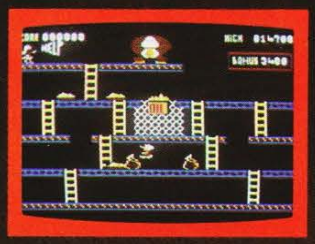

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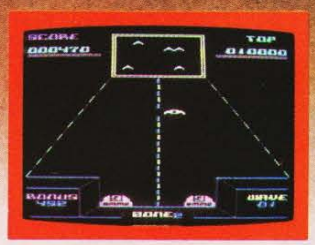

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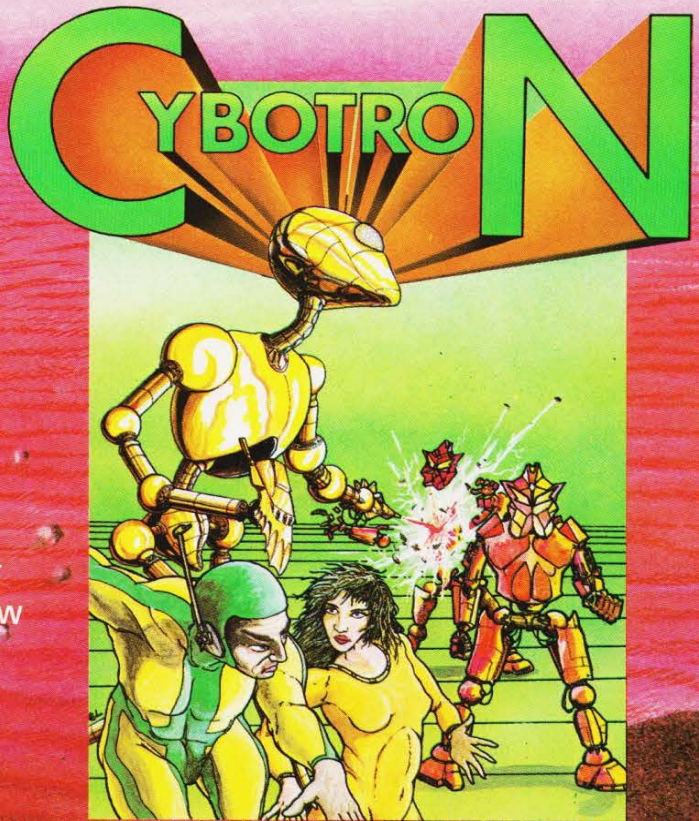

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The TAC-2 joystick is one of the Suncom range of joysticks made by Consumer Electronics. TAC stands for Totally Accurate Control. The control on this stick is excellent as there are no moving parts inside such as micro switches, to go wrong and no pressure pads to wear out. The internal electrical contact is made by having a metal bar for the central shaft of the joystick and metal plates inside to make contact with. The use of stainless steel for the part of the joystick that takes the most strain makes these joysticks one of the most long lasting designs on the market.

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The TAC-2 is compatible with all Atari computers and video games systems, VIC-20, Commodore 64, Sinclair Interface 2, Kempston Interface, and any other computer using the Atari standard 9 pin DIN connector.

Suncom is the trading name for Consumer Electronics, a company that was formed in the summer of last year to sell peripherals for home computers using the latest state of the art technology. Consumer Electronics is expanding its range in the autumn and their new products, details have yet to be released, will be featured in a *Games Computing* competition in the future.

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2. As long as the correct coupon is used for each entry there is no limit to the number of entries per person, photocopies will not be accepted.
3. All entries must be postmarked before April 30, 1984.
4. The prizes will be awarded to the first 10 correct entries picked out of the bag.
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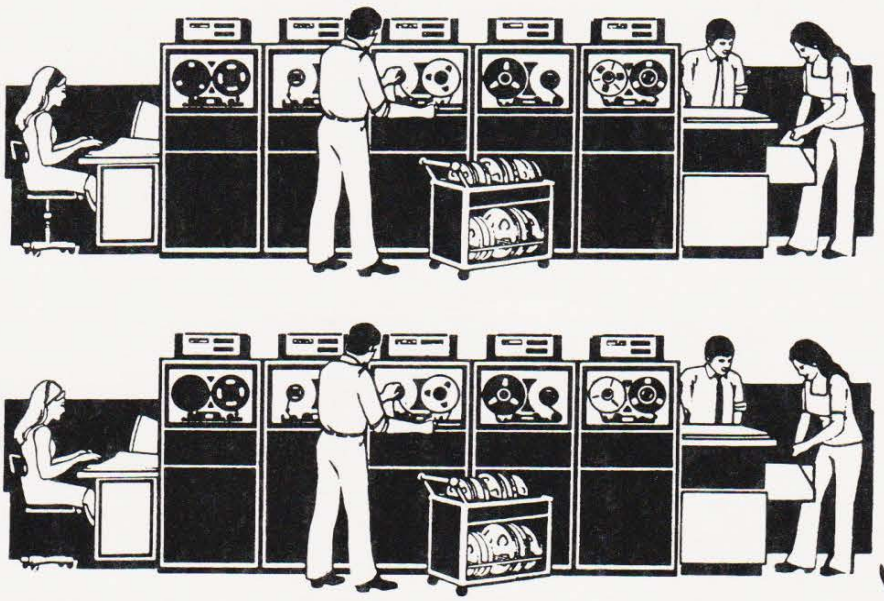
6. The winners will be notified by post and the results will be published in a future issue of *Games Computing*.



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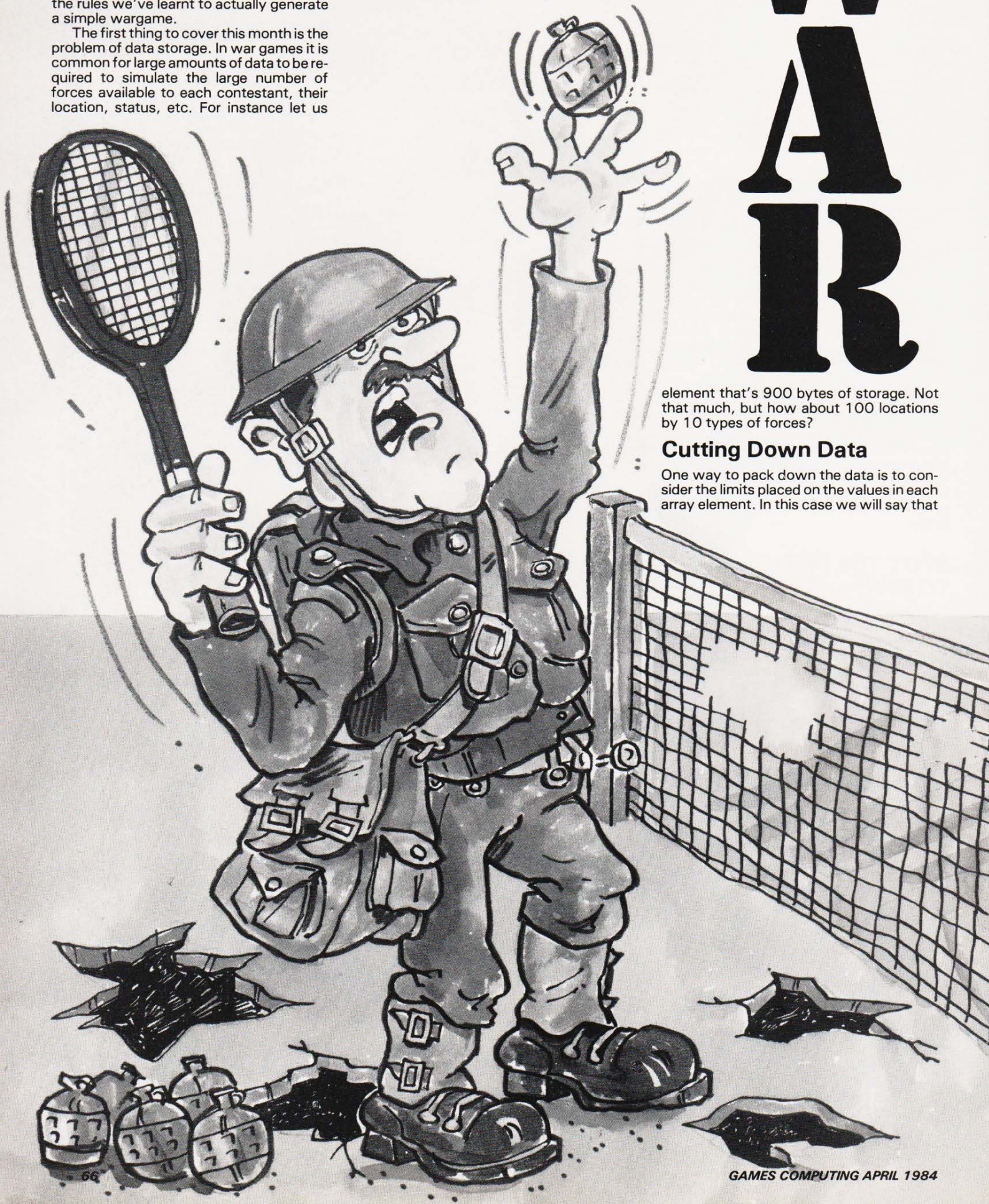
WAR

In the first three articles in this series we have looked at the history of wargames, the nature of a wargame and how to computerise it, and the problems of randomness and generating a computer opponent. In this article I will be completing the analysis of how to produce a computer wargame so that the next article can apply the rules we've learnt to actually generate a simple wargame.

The first thing to cover this month is the problem of data storage. In war games it is common for large amounts of data to be required to simulate the large number of forces available to each contestant, their location, status, etc. For instance let us suppose that we wish to produce a war game where the board is divided into 30 areas; in each area up to 99 units of artillery, cavalry, and infantry can be present. In the computer we can set up an array of 30 (locations) by three (types of forces). However this will require an array of 90 elements and at 10 bytes per array element that's 900 bytes of storage. Not that much, but how about 100 locations by 10 types of forces?



Cutting Down Data

One way to pack down the data is to consider the limits placed on the values in each array element. In this case we will say that

GAMES

each element can contain 0 to 99. But the actual physical limit that can be held accurately in one array element is around 6 million, that's an awful lot of digits going to waste. If we multiply the amount of cavalry by 100, the amount of artillery by 10000, and add the result to the amount of infantry we should be able to store the three forces in one array element. For instance 16 artillery, 65 cavalry, and 48 infantry gives a result of 166,548 — the first two digits are the artillery, the second two are the cavalry and the last two represent the infantry. The BASIC subroutine to amalgamate the numbers is simple, as shown below.

```
LET T=A * 10000+C * 100+ =I
```

The BASIC subroutine to seperate the numbers is as follows:

```
LET A=INT(T/10000)
LET C=INT(T/100)-A * 100
LET I=T-A * 10000-C * 100
```

Where I is infantry, A is artillery, C is cavalry, and T is the combined total.

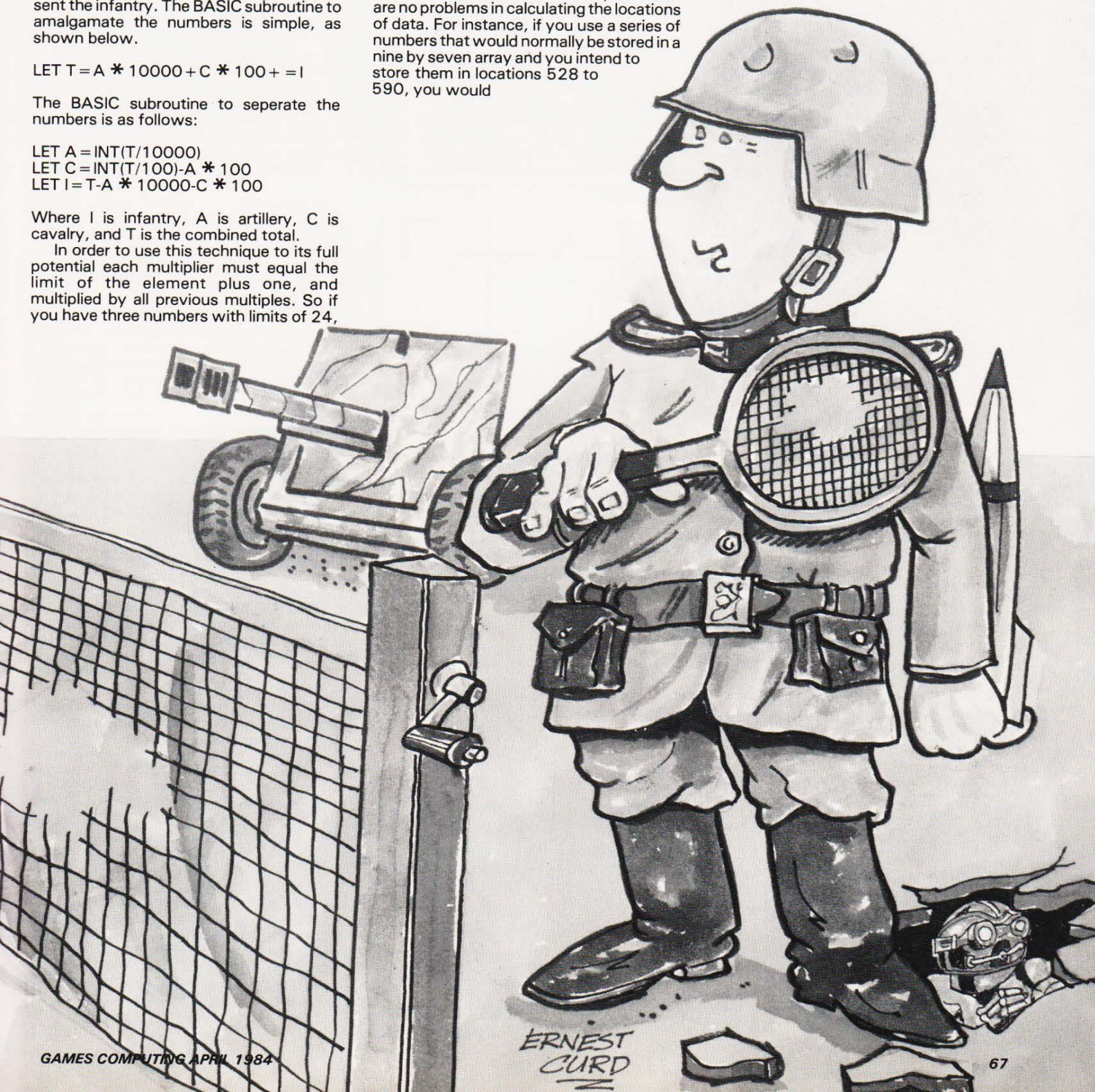
In order to use this technique to its full potential each multiplier must equal the limit of the element plus one, and multiplied by all previous multiples. So if you have three numbers with limits of 24, 32, and 80, the first multiplier will be 25, the second multiplier will be 825 (25 * 33), and the maximum will be 18825 (25 * 33 * 81). In using this method you will need to look at the way your particular computer stores data to find out what is the largest number it can store accuratley.

Another method of packing data is to reserve an area of memory and use it to POKE values into. This means that each value cannot exceed 255 (the maximum value that can be stored in one byte). There are no problems in calculating the locations of data. For instance, if you use a series of numbers that would normally be stored in a nine by seven array and you intend to store them in locations 528 to 590, you would calculate the location of the data as follows:

location = 527 + (0 to 8) * 7 + (1 to 7).

Game Design

The next subject that we must cover is the difficult one of designing the playing board and calculating movement. We shall consider three different types of play area: the evenly divided board, the unevenly divided board, and the open board.



The evenly divided board is a copy of the traditional war game board. It is divided into areas by an even lattice pattern, usually squares or hexagons. Neighbouring areas are calculated so that square (4,5) would be next to squares (3,5), (4,4), (5,5), and (4,6). Hexagon (4,5) would be next to hexagons (3,5), (3,4), (4,4), (5,5), (4,6), and (3,6) — see figs 1 and 2.

The units available to each player run across the board one square or hexagon at a time, but usually being able to move no more than one square or hexagon at a time. Each square or hexagon can have a different terrain which can affect movement. Units occupy a particular square of hexagon and the units in this sort of game tend to be indivisible. Often the presence of enemy units in areas next to those that the friendly unit is to pass through can slow or stop the friendly unit.

This problem of movement across the grid relates to the objective that is to be achieved. If the objective is to reach a particular area then the area to move to is the one that puts you closest to that area; if the objective is to destroy enemy forces then the areas to move to are those next to enemy units.

The best path is the one that uses least movement points to reach the objective. It is found by looking at all neighbouring areas of find the one which best suits movement to the objective, then areas next to that, and so on until all a unit's movement points are used up.

Alternative Design

The next kind of board is the unevenly divided board. In this the play area is subdivided into areas of varying size. The terrain effects of this kind of board are built in, so that difficult terrain has smaller areas than easy terrain. Movement is to neighbouring areas, and a list of neighbouring areas is stored. For example, a game with five areas as in figure three would have a list as follows: Area 1 neighbours 2,3,4,5; area 2 neighbours 1,3; area 3 neighbours 1,2,4; area 4 neighbours 1,3,5; area 5 neighbours 1,4. Units are considered to be in a particular area and to be divisible between neighbours.

Often units can only move to neighbouring provinces and the presence of enemy units in a province prevents movement out of that province. Movement here is also dictated by objective, but since it is usually more limited, it is usually easier to calculate.

Finally there is an open board. This board is more related to the wargaming tables used in figure wargaming. In this board each unit does not have an area location but an absolute location. That is the location of a unit is considered to have an X and Y coodinate for its actual location, and the position on the screen is only an approximation to this location e.g. a unit 823 miles east and 288 miles south of the point of origin may be represented as being at position 82,29 on the screen. Movement is usually done by giving a direction and a distance to move. This type of board works especially well with featureless terrains where only a few self-contained units are involved. Sea battles work well on this type of board, also air and space battles as the third dimension can also be handled on this basis.

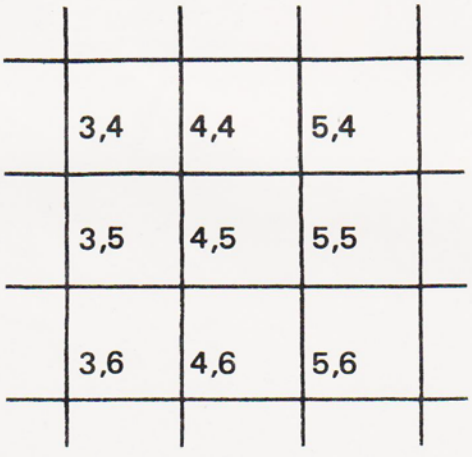


Figure 1 - Square pattern board

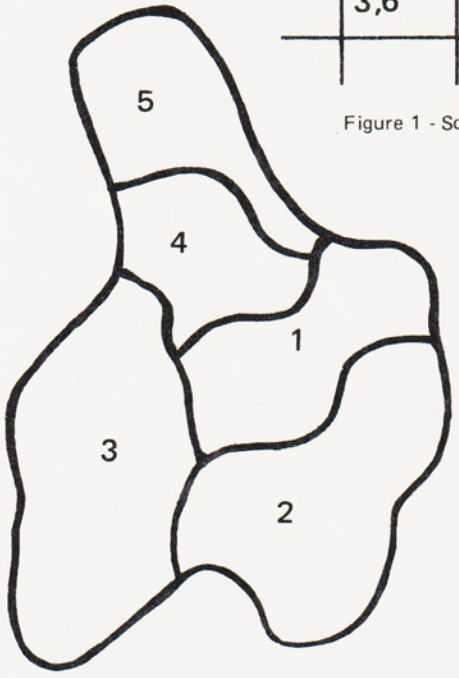


Figure 3 - Unevenly divided board

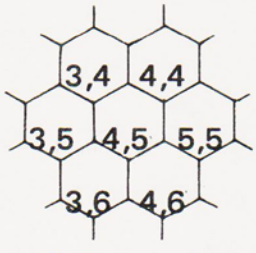


Figure 2 - Hexagon pattern board

Last Words

Finally in this article I will look at the question of play testing. Suppose you have designed and programmed your re-enactment of David vs Goliath. How do you test that the game is programmed correctly, and how about the problem of giving each side a fair chance? And that most difficult of all items to include challenge?

The answer is to test the program by actually playing it. There are other things that can be done to ensure correct code: line-by-line reading of the code should pick up any gross errors of programming; and checking the major equations in the program by hand, calculating them outside the program will help to show whether they are producing sensible results. But some things can only be tested by actually playing the game. You must be prepared to spend many hours in intensive testing of the game, and if possible get a friend to help in the testing. Independent minds (or even fingers) can often find things that you would never have thought of.

There is a difficult line to draw between the wargame that is irretrievably boring and the game that is so close to interesting that it will turn out to be a masterpiece. If your game looks lost don't give up! Fiddle with the formulae, the starting positions the initial forces. Look at the board to see if it can be rearranged. If all else fails then go back to the original design and try the problem as a conventional board game. You'll be surprised how quickly problems show themselves when you are moving cardboard units over a piece of paper.

Presentation

Lastly a quick word on a most important subject: presentation. I cannot stress too highly that an attractive game leads to satisfied players. If your computer has colour and sound then use them as extra methods of passing information on to the player: Have a good map to play the game on; use user defined graphics to represent forces on the map. Don't bombard the player with a mass of figures that he doesn't read, give him only the information that he will read to make the decisions that he is faced with at that moment. Remember it is a *game* that you're designing.

So we have now covered all the major problems associated with designing a wargame, many of the things discussed in the series will apply to other stategic games, and to adventures, so don't disregard this information just because it has been directed at wargames.

In the next two articles we will be going through the design process to actually produce a wargame, and there will be a competition with a cash prize and the chance to have your game published by Argus Press Software — so get designing now!

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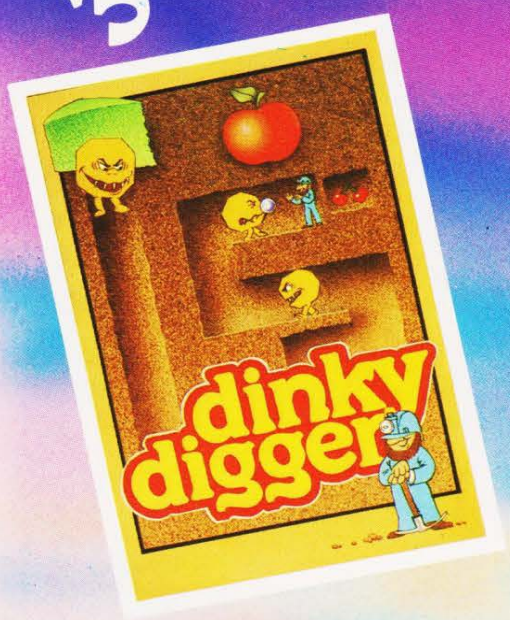

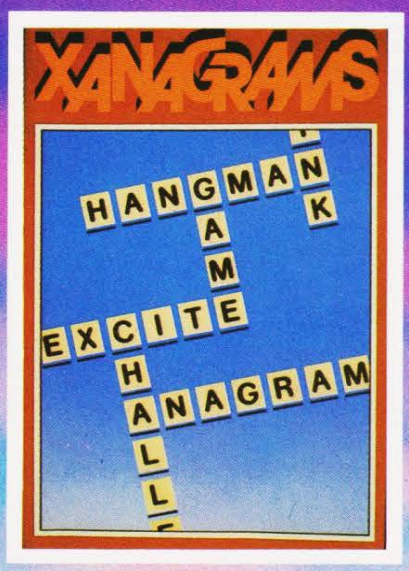

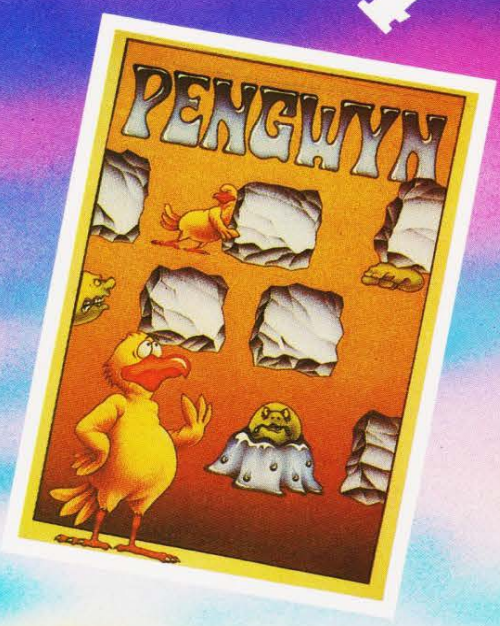

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Simple Draw

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The program is a fairly simple idea. All it does is to let the user draw lines up, down, left, and right, and also diagonaly using a joystick. One feature is the colour, different directions have different colours. These can be changed by altering the number after POKE A + B,? in lines 0 to 9. Pressing the fire button deletes everything on the screen.

RUNdown

Line	Action
0	Changes colour of screen and starts subroutine
1	Defines variables A,B
2	Sets addresses 37137 and 37152 for input
3	POKES A and B onto the screen
4	Defines U1 and U2
5-7	Reads joystick for up, down, and right
8	Reads fire button and starts subroutine
9	Reads joystick for left
10	Keeps characters on screen
11	Stops reading joystick
12	Goes back to line 2
100-118	Instructions
1000	Routine for deleting screen

Variables Used

A	Main character for drawing
B	Colour for A
U1,U2	Joystick PEEKs

Conversion Clues

This is difficult as the VIC-20 uses PEEK addresses for joystick control. This could be changed to INKEY$ or a GET command to read the keys instead of a joystick.

Simple Draw

```
0 PRINT"■":POKE36879,8:GOSUB100
1 PRINT"■":POKE36879,8:A=7680:B=30720
2 POKE37139,0:POKE37154,127
3 POKEA,160:POKEA+B,1
4 U1=PEEK(37137):U2=PEEK(37152)
5 IF(U1AND16)=0THENPOKEA+B,4:A=A-1
6 IF(U1AND8)=0THENPOKEA+B,5:A=A+22
7 IF(U1AND4)=0THENPOKEA+B,7:A=A-22
8 IF(U1AND32)=0THENGOSUB1000
9 IF(U2AND128)=0THENPOKEA+B,6:A=A+1
10 IFA<7680ORA>8185THENA=8185:A=7680:POKEA,160
11 POKE37154,255
12 GOTO2
100 PRINT"■■■SIMPLE DRAW ON VIC ■"
101 PRINT"■■(C) G.BAXTER 1984"
102 PRINT"■■USING JOYSTICK DRAW"
103 PRINT"■LINES ON THE SCREEN"
104 PRINT"■■IT DRAWS IN DIFFERENT"
105 PRINT"■■COLOURS AUTOMATICALLY"
106 PRINT"■■■PRESS ANY KEY TO GO ON"
107 GETA$:IFA$=""THEN107
108 PRINT"■":POKE36879,12
109 PRINT"■LEFT=■PURPLE"
110 PRINT"■RIGHT=■BLUE"
111 PRINT"■UP=■YELLOW"
112 PRINT"■■DOWN=■GREEN"
114 PRINT"■PRESSING THE FIRE     "
115 PRINT"■■ELETES THE SCREEN"
116 PRINT"■■PRESS ANY KEY TO GO ON"
117 GETA$:IFA$=""THEN117
118 RETURN
1000 FORD=7680TO8185:POKED,32:NEXTD
1001  S=INT(RND(1)*8185)
1002 IFS<7680THEN1001
1003 A=S
1010 RETURN
READY.
```

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RUNS ON ORIC

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When played, a board of 5 across by four down is displayed on the screen. Hidden on the board are 20 monsters. These monsters occur in two types, each of which can occur in 5 different colours. You have only twenty turns to hunt down the monsters. You may enter the coordinates of two locations at a time. The monsters hiding in these locations will then be displayed on the screen until you press the space bar. Your task is to find the pairs of monsters which are identical in both shape and colour. If you do locate a matching pair, they will remain on the screen. You must try to locate all ten pairs of matching monsters before your twenty turns are up.

If you enter the coordinate of a location which is already being displayed, the message 'silly!' will be displayed and you will have wasted a turn. You must then press the space bar to get your next turn. You must tell the computer which square you want to view by typing in the coordinate in the form of number letter . eg. 2D not D2. The computer will not allow stupid entries.

The two monsters are built up out of the characters available in the alternate character set (TELETEXT graphics characters) and are thus not of a very detailed nature. It is quite straightforward to redefine these characters by POKING into the appropriate area of RAM to create monsters of your choice. These characters are held in the variables UA$,UB$,UC$, TA$,TB$,TC$ in lines 110-140.

RUNdown

Line	Action
5	Turns cursor off.
6	Sets score to zero.
10	Dimensions the array A(X) which holds the monsters positions.
20-30	Clears screen and chooses foreground and background colours.
35	Defines Z$ as a blank string used to erase 1 line on screen.
40	Calls subroutine for instructions.
50-60	Sets number of turns left and defines colours.
90	Calls subroutine which fills the array A(X) with the monsters in a random position.
100	Calls routine to draw the board.
110-140	Defines characters (these are chosen from the alternate set!!)
150-160	Sets serial attributes on screen to alternate character set/standard set.
200-790	Main control loop :- repeats loop until SC (score) = 10 or E% = 1 all turns used.
210	Decrease number of turns left.
225	Turns to string.
226-227	Used to strip first character off string to overcome the bug in the STR$ function in ORIC's basic which adds the serial attribute for GREEN to front of string.
230-260	Plots messages at screen coordinates.
270-300	Waits for number from 1-6 being pressed.
310	Prints number.
320-350	Waits for letter A-D and converts this to a number by subtracting 64 from its ASCII code.
355-356	Sets variables for array and graphics locations.
357-360	Plots location.
361	Check if already displayed.
362	Calls routine to plot graphics.
365-480	Routine for second location.
490-620	Waits for space bar to be pressed.
630-660	Plot blank strings to erase areas of screen.
680	Calls routine to erase screen if you have not matched pair of monsters (KK <> 1).
800	If score = 10 call routine to win.
810-870	Routine for losing.
880	Turn cursor on again.
1000-1200	Draws board by setting serial attributes in TEXT mode.
2000-2070	Fills array A(X) with random numbers from 1-20 with no two locations identical.
4000-4290	Instructions routine.
4102-4106	Music ? routine.
4120-4140 and 4260-4280	Wait for space bar.
5000-5500	Erase graphics already plotted.
6000-6120	Plots graphics for monster held in location ZZ.
7000-7100	Win routine.
7021-7028	Music routine.

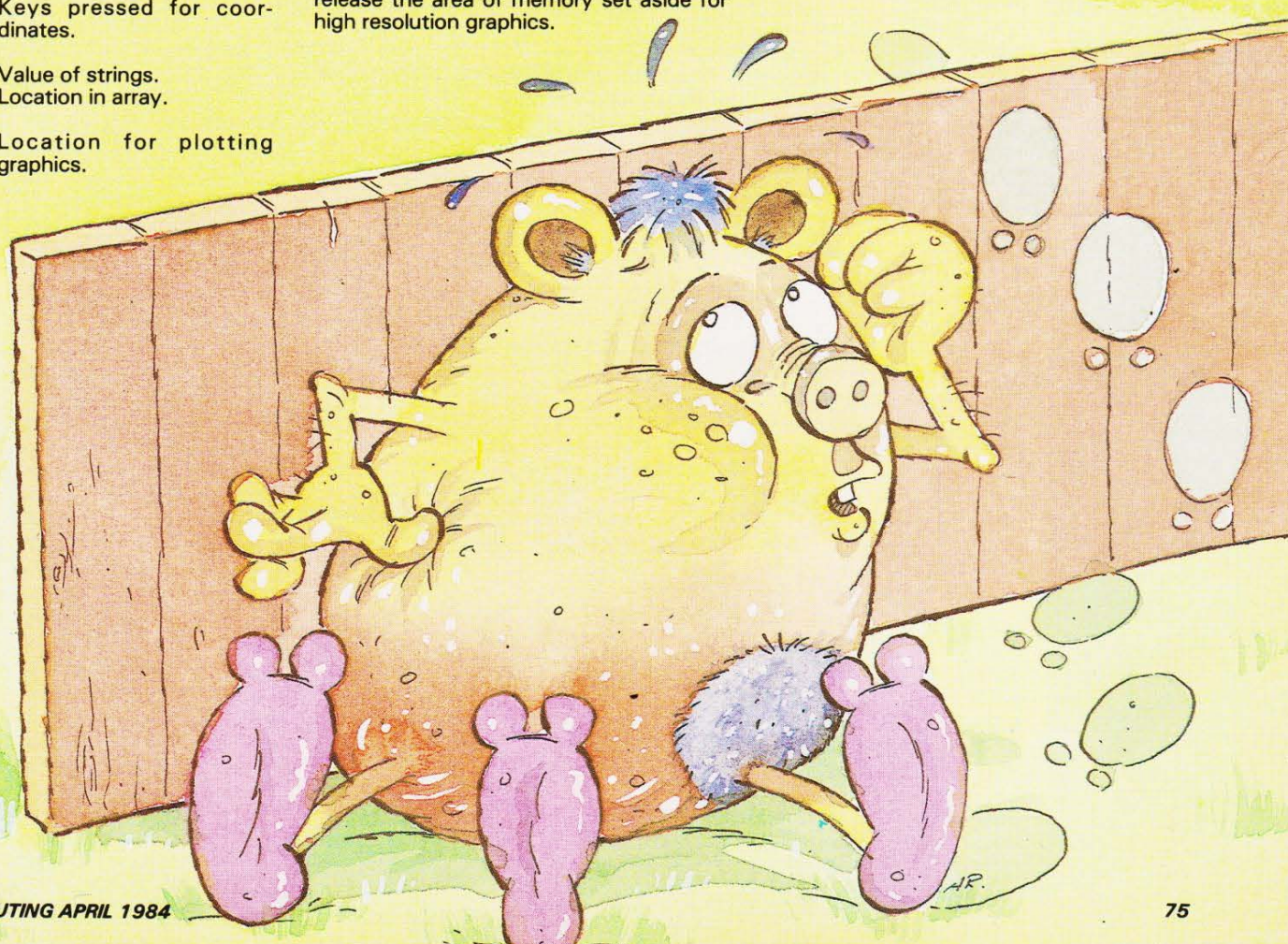
MONSTER HUNT

Variables Used

SC =	Score.
E% =	number of turns left.
A(X) =	Array which holds a random sequence of numbers for monsters locations.
T =	Used for music.
EE$	Holds string value of E%.
AA$,AB$, AC$,AD$ =	Keys pressed for coordinates.
AA,AB,AC, AD =	Value of strings.
ZZ,ZF,ZG =	Location in array.
XX,XY,YX, YY =	Location for plotting graphics.
FA$ =	Test for key pressed.
G$	Tests if you want another go.
X,A,Y,N	Counting loops.

Conversion Clues

The program will work in a 16K Oric if all REM statements are removed and line 1 is replaced with TEXT:GRAB, which will release the area of memory set aside for high resolution graphics.



```
REM ** MONSTER HUNT  **
2 REM ** a game to test your memory **
3 REM ** for the ORIC1 **
4 REM ** <C> S.W. Lucas January 1984 **
5 PRINTCHR$(17) :REM ** TURN OFF CURSOR
6 SC=0 :REM SET SCORE TO ZERO AT START OF GAME
10 DIM A(20): REM ARRAY USED TO HOLD BOARD LOCATIONS
20 PAPER6:INK4
30 CLS
35 Z$="                                        "
40 GOSUB 4000
50 PAPER 6:INK4
60 E%=21:REM ** holds the number of turns left !
90 GOSUB2000:REM FILL ARRAY WHICH HOLDS BOARD LOCATIONS
100 GOSUB1000:REM DRAW THE BOARD
110 WA$="J[[":WB$="*L.":WC$="JKJ"
120 UA$="5J":UB$="J5":UC$="6I"
130 VA$="6 I":VB$=CHR$(34)+"\!":VC$="H£4"
140 TA$=" 5":TB$="J[" :TC$="JJ"
150 FOR P=2 TO 22:PLOT2,P,9:NEXT:REM ALTERNATE CHARACTER SET
160 FOR P=2 TO 22:PLOT29,P,8:NEXT:REM STANDARD CHARACTER SET
200 REPEAT
210 E%=E%-1
220 PLOT30,3,"goes left"
225 EE$=STR$(E%)
226 EE$=MID$(EE$,2)
227 EE$=EE$+" "
228 F=FRE("")
230 PLOT32,5,EE$
240 PLOT30,5,1
260 PLOT30,8,"loc. 1 ?"
270 REPEAT
280 GET AA$
290 AA=VAL(AA$)
300 UNTIL (AA>0 AND AA<6)
310 PLOT32,10,AA$
320 REPEAT
330 GET AB$
340 UNTIL AB$="A"ORAB$="B"ORAB$="C"ORAB$="D"
350 AB=ASC(AB$)-64
355 ZZ=(AB-1)*5+AA:ZF=ZZ:REM LOCATION IN ARRAY
356 XX=AA*5-1:YY=AB*5-1:XF=XX:YF=YY :REM CO-ORDINATES FOR PLOTTING
GRAPHICS
357 PLOT 30,10,1
360 PLOT33,10,AB$:KK=0
361 IF A(ZZ)=0 THEN PLOT 29,1,"Silly!":KK=1:GOTO600
362 GOSUB 6000 : REM PLOT GRAPHICS
365 PLOT30,13,"loc.2 ?"
375 PLOT30,15,1
380 REPEAT
390 GET AC$
400 AC= VAL(AC$)
410 UNTIL (AC>0 AND AC<6)
420 PLOT32,15,AC$
430 REPEAT
440 GET AD$
450 UNTIL AD$="A"ORAD$="B"ORAD$="C"ORAD$="D"
460 AD=ASC(AD$)-64
470 PLOT33,15,AD$
475 XX=AC*5-1:YY=AD*5-1:XG=XX:YG=YY:REM CO-ORDINATES FOR PLOTTING G
RAPHICS
476 ZZ=(AD-1)*5+AC:ZG=ZZ:REM ** LOCATION IN ARRAY
477 IF ZF=ZG THEN PLOT 29,1,"Silly!":GOTO600
478 IF A(ZZ)=0 THEN PLOT 29,1,"Silly!":KK=1:GOTO600
480 GOSUB6000:REM PLOT GRAPHICS
490 PLOT30,20,1
590 PLOT31,20,"<SPACE>"
600 REPEAT
610 GET FA$
620 UNTIL FA$=" "
630 PLOT30,13,"          "
640 PLOT30,8,"          "
650 PLOT32,15,"  ":PLOT32,10,"  "
655 PLOT29,1,"      ":REM 6 SPACES
660 PLOT 30,20,"          "
680 IFKK<>1 THEN GOSUB 5000:REM ERASE GRAPHICS
790 UNTIL E%=1 OR SC =10 :REM REPEAT UNTIL WON OR RAN OUT OF TURNS
```

```
800 IF SC=10 THEN GOTO 7000
810 CLS:FORX=1TO2:PLOT1,X,X:PLOT2,X,14:PLOT10,X,"YOU LOST!!!":NEXT
814 FOR X=1 TO 4:FORY=1TO150:SOUND1,Y,8:SOUND2,255-Y,8:NEXTY,X
815 SOUND1,0,0:SOUND2,0,0
820 PRINT:PRINT:PRINT:PRINT"Want another go   <Y>es or <N>o ?"
830 REPEAT
840 GET G$
850 UNTIL G$="Y" OR G$="N"
860 IF G$="Y"THENPRINTCHR$(17):RUN
870 PRINT:PRINT"GOODBYE... THANK YOU FOR PLAYING"
880 PRINTCHR$(17):REM TURN ON CURSOR AGAIN
890 END
999 REM ** SUBROUTINE TO DRAW BOARD FOR THE GAME **
1000 AA=16:AB=23:AC=2:AD=0
1001 CLS
1002 FOR A = 1 TO 4
1005 FOR X = 1 TO 5
1010 PLOT3,X+AC,AA
1020 PLOT8,X+AC,AB
1030 PLOT13,X+AC,AA
1040 PLOT18,X+AC,AB
1050 PLOT23,X+AC,AA
1060 PLOT28,X+AC,22
1070 NEXT X
1080 F=FRE("")
1090 AD=AA:AA=AB:AB=AD:AC=AC+5
1100 NEXT A
1110 FOR A=1 TO 4
1115 AA$=CHR$(64+A)
1120 PLOT0,A*5,1:PLOT1,A*5,AA$
1125 F=FRE("")
1130 NEXT A
1140 PLOT1,1,1
1145 FOR A = 1 TO 5
1150 AA$=CHR$(48+A)
1160 PLOT 5*A-1,1,AA$
1170 F=FRE("")
1180 NEXT
1190 PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
1200 RETURN
1999 REM ** SUBROUTINE TO  FILL ARRAY FOR BOARD LOCATIONS **
2000 CLS:PRINTSPC(7);"Please wait a moment"
2005 FOR X = 1 TO 20
2010 REPEAT
2020 Y= INT(RND(1)*20)+1
2030 IF Y>20 OR Y <1 THEN PRINT"ERROR  in the random number generat
ion":END
2035 REM ** CHECK TO SEE IF ARRAY ELEMENT IS EMPTY OR NOT
2040 UNTIL A(Y)=0
2050 A(Y) = X
2060 NEXT
2070 RETURN
3999 REM ** SUBROUTINE FOR TITLES **
4000 PAPER 0 :INK 6
4005 CLS:FORX=1TO2
4010 PLOT1,X,14:PLOT2,X,X
4020 PLOT12,X,"Monster Hunt"
4030 NEXT
4040 PRINT:PRINT:PRINT:PRINT:PRINT
4050 PRINT"The game is played on a 5 x 4 board,"
4060 PRINT"labelled 1 - 5 across and A to D down."
4070 PRINT"You must tell the computer which"
4080 PRINT"square you wish to view by typing in"
4090 PRINT"the co-ordinates of the square in the"
4100 PRINT"form of number letter (eg. 4D or 2A)"
4101 RESTORE
4102 FOR T=1 TO 34:READ X
4103 MUSIC 1,3,X,0
4104 PLAY 1,0,4,500
4105 WAIT 10
4106 NEXT:PLAY0,0,0,0
4110 PLOT1,22,1:PLOT5,22,"Press <Space Bar> to continue"
4120 REPEAT
4130 GETH$
4140 UNTIL H$=" "
4150 FOR X = 5 TO 13
4160 PLOT1,X,Z$
```

```
4170 NEXT
4172 FOR X=5 TO 8:PLOT0,X,7:NEXT X
4180 PLOT1,5,"Hidden on this grid are 20 monsters."
4190 PLOT1,6,"There are 2 different types of "
4200 PLOT1,7,"monster hidden on the board and they"
4210 PLOT1,8,"are found in five different colours."
4220 FOR X = 15 TO 20 :PLOT 0,X,3 :NEXT X
4230 PLOT 1,15,"You have only twenty turns in which "
4240 PLOT1,16,"you must try to discover the location"
4250 PLOT1,17,"of all ten pairs of identical monsters"
4260 REPEAT
4270 GET H$
4280 UNTIL H$=" "
4290 RETURN
5000 DD=A(ZF):DE=A(ZG)
5010 IF(DD=1ANDDE=2)OR(DD=2ANDDE=1)THEN SC=SC+1:A(ZF)=0:A(ZG)=0:RET
URN
5020 IF(DD=3ANDDE=4)OR(DD=4ANDDE=3)THEN SC=SC+1:A(ZF)=0:A(ZG)=0:RET
URN
5030 IF(DD=5ANDDE=6)OR(DD=6ANDDE=5)THEN SC=SC+1:A(ZF)=0:A(ZG)=0:RET
URN
5040 IF(DD=7ANDDE=8)OR(DD=8ANDDE=7)THEN SC=SC+1:A(ZF)=0:A(ZG)=0:RET
URN
5050 IF(DD=9ANDDE=10)OR(DD=10ANDDE=9)THEN SC=SC+1:A(ZF)=0:A(ZG)=0:R
ETURN
5060 IF(DD=11ANDDE=12)OR(DD=12ANDDE=11)THEN SC=SC+1:A(ZF)=0:A(ZG)=0
:RETURN
5070 IF(DD=13ANDDE=14)OR(DD=14ANDDE=13)THEN SC=SC+1:A(ZF)=0:A(ZG)=0
:RETURN
5080 IF(DD=15ANDDE=16)OR(DD=16ANDDE=15)THEN SC=SC+1:A(ZF)=0:A(ZG)=0
:RETURN
5090 IF(DD=17ANDDE=18)OR(DD=18ANDDE=17)THEN SC=SC+1:A(ZF)=0:A(ZG)=0
:RETURN
5100 IF(DD=19ANDDE=20)OR(DD=20ANDDE=19)THEN SC=SC+1:A(ZF)=0:A(ZG)=0
:RETURN
5110 FOR N = 0 TO 2
5120 PLOTXF,YF+N,"    ":REM 3 SPACES
5130 PLOTXG,YG+N,"    ":REM 3 SPACES
5140 NEXT N
5500 RETURN
5998 REM ** ROUTINE FOR PLOTTING GRAPHICS **
5999 REM ** FIRST SELECT COLOUR CO **
6000 L=A(ZZ)
6010 IF (L<5) THEN CO=1
6020 IF (L>4 AND L<9) THEN CO=2
6030 IF (L>8 AND L<13) THEN CO=3
6040 IF (L>12 AND L<17) THEN CO=4
6045 REM ** CO = COLOUR
6050 IF (L>16) THEN CO=5
6060 FOR N=0 TO 2 :PLOTXX,YY+N,CO: NEXT
6080 IF L=10RL=20RL=50RL=60RL=90RL=100RL=130RL=140RL=170RL=18THENL=
0ELSEL=1
6090 REM L=0 TYPE 1 MONSTER L=1 TYPE 2 MONSTER
6100 IFL=0 THENPLOTXX+1,YY,TA$:PLOTXX+1,YY+1,TB$:PLOTXX+1,YY+2,TC$
6110 IFL=1 THENPLOTXX+1,YY,UA$:PLOTXX+1,YY+1,UB$:PLOTXX+1,YY+2,UC$
6120 RETURN
7000 CLS:PRINTSPC(10)"YOU WIN!!!!"
7010 PRINT:PRINT:PRINT:PRINT:PRINT
7020 PRINT"Want another go   <Y>es or <N>o ?"
7021 RESTORE
7022 FOR T=1 TO 34
7023 READX
7024 MUSIC1,3,X,0
7025 PLAY1,0,4,500
7026 WAIT 10
7027 NEXT
7028 PLAY0,0,0,0
7030 REPEAT
7040 GET G$
7050 UNTIL G$="Y" OR G$="N"
7060 IF G$="Y"THENPRINTCHR$(17):RUN
7070 PRINT:PRINT"GOODBYE... THANK YOU FOR PLAYING"
7080 PRINTCHR$(17):REM TURN ON CURSOR AGAIN
7090 DATA8,5,8,5,8,4,8,5,7,5,6,4,7,3,8,6,9,4,9,5,6,3,8,7,6,5,4,7,4,
8,2,9,4,5
7100 END
```

TOY FAIR

Late January sees the staging of the toy world's most important show at London's Earls Court. It is there that the annual British Toy and Hobby Fair takes place and is the event at which the trade decide exactly what products they will stock in the coming year — especially prior to Christmas, the toy trade's boom selling period.
But this year there was a new generation of toys taking over from the traditional type of toys in the shape of video games, home computers, computer games and electronic hand-held toys. Although this wasn't the first time such toys had been on display at the Toy Fair this year it was noticeable that several toy firms are now spending a lot of money on such equipment.

***Games Computing* spent a day at the Fair and this is what we found.**

PARKER PILOTS NEW GAMES

Parker is one of the relatively newer arrivals on the video games scene but have entered the market in a big way. Right from the start they seem to have got their policy right by anticipating the fall-off in sales of video games hardware in favour of the home computer. Instead of continuing solely with VCS games they made the wise move of producing their best selling (and also new) titles for the most popular home computers. Of course, they are still bringing out products for the Atari 2600 VCS, Intellivision, Colecovision and Philips G7000.

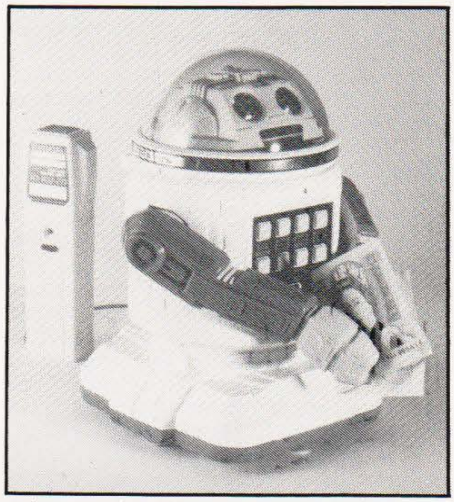
But the news for 1984 is that the Spectrum with Interface 2 will be a big favourite this year and as a result Parker is to bring out several cartridges to plug into this new Spectrum extra.

Currently in production are two arcade style games, the very popular Gyruss and another game in the Star Wars vein, Star Wars — the Arcade Game. From the word go it's always been Parker's policy to produce games software based on original arcade games or to get the rights to develop games from films.

Due for release in August Parker promises to reproduce the video game Gyruss as faithfully as possible to the original game. If they succeed it should prove to be a great game. The concept of the game is an alien shoot out theme — but with a difference. The action happens around the centre of the screen. You control a space ship and must shoot the aliens as they fly in an ever increasing spin outwards over the screen. But you dodge the red coloured aliens — these are the bad boys and if you make contact with them your ship is blown up. Bonus points are given for staying alive over a certain length of time and if you shoot down particularly nasty aliens. For true arcade fans Gyruss will definitely be an addictive game.

Star Wars — the Arcade Game looks set to be a winner too, providing the transferral process to VCS and computer is not too restricting.

The scenario of this Star Wars adventure is the famous trench and you are in command of Luke Skywalker's craft. You must navigate the ship down the trench, blowing up the red fire balls on your flight path in order to survive. At the end of the trench you must fly your ship down a shaft and destroy the Death Star. You have the option of flying to various planets in the



galaxy with difficulty levels varying on each planet. You have to guide your craft through space, shooting down Federation Fighters which zoom up in front of you. The original game has a 3-D effect which makes your dabble with death particularly frightening and realistic.

Both these games should be available for the Atari range of home computers, the Spectrum 48K (Interface 2) and Commodore 64 later in the year. They will also be available for use on the Atari 2600 and Colecovision. So look out for more news of these brand new games in future editions of *Games Computing*.

At the moment Parker plans to stick with the Spectrum, CBM 64 and Atari (Texas too) as their hardware base for games development. There are no plans to produce games for the BBC micro because Parker feel that currently that machine is well catered for in software terms and believe it is more of an educational computer than a games computer.

ATARI ACTION

With the label of market leader sticking firmly to Atari it looks like their main worry for the future is to continue to produce good quality software for both the VCS type or systems and computer systems.

At the Toy Fair Atari was heavily in evidence with their entire range of new games on show. The latest addition to the VCS range are two games. One is the first in the Peanuts series and is called Snoopy and the Red Baron. The second is the now well known Mario Brothers which is a development from the arcade hit, Donky Kong.

Released in early January, the first game is all about Snoopy taking on the Red Baron — in his kennel? What will they think of next? Snoopy's mission is to recover his stolen food supplies of hamburgers, ice cream cones, and popcorn from the Red Baron by sharpshooting the Baron down. When the Baron drops any morsel of food you must watch carefully and catch it by touching it with Snoopy's doghouse. Vigilance is needed because the wicked Baron also makes sneaky drops of skulls and cross bones — and if you catch either of these you lose all the supplies you've so far recovered.

Naturally you score points for shooting the Red Baron and collecting food supplies plus bonus points at the end of a round.

This is a one player game and costs £19.99. It really is aimed at younger children and will make a good game for that age group.

In the Mario Brothers you must help the two of them, Mario and Luigi get rid of pests infesting their house. There are several different types of pests to get rid of including shell creepers, sidesteppers and fighterflies. Each variety has to be tackled in a different way in order to destroy them.

Points are scored for knocking pests off the floor levels, collecting coins and bonus wafers for outwitting the icecream man called Slipice.

Once you start earning bonus objects like wafers the points up for grabs get really high. Altogether there are eight skill levels and you can play either by yourself or rope a friend in to play with you. This game is more expensive than Snoopy, costing £29.99 and it will be on sale from February.

KIDS KEY PADS

Specially for very young children comes a new venture from Atari with educational games and a Kids Controller.

The games have been designed to teach children the basics of counting and letter recognition. So far three games are on sale, Cookie Monster Munch, Alpha Beam with Ernie and Big Bird's Egg Catch.

Each of the games is fun to play yet has a purpose to them and should make early learning fun to do. They would be ideal for a mother to play with her young children and will keep them busy but won't waste their time.

For in Cookie Monster Munch the idea is to teach the basics of addition and subtraction. The child controls the cookie monster and makes him pick up cookies, put them in the cookie jar and count them as he munches them one at a time.

The Kid's Controller has been specially developed for small fingers to use. The controller is rectangular in shape and made of brightly coloured plastic. On each one there are a selection of numbered buttons over which you must place an overlay corresponding with whatever game your child is playing — they come with each individual game. They are especially attractive to children with a funny illustration of the game appearing on each overlay card.

In Alpha Beam with Ernie the object is to pick up and place letters which are floating in space (on screen) in the corresponding fuel bays in the space ship. Again you use the Kids Controller to operate the game and by playing the game young children will learn to recognise the letters of the alphabet.

Finally, Big Bird's Egg Catch is the newest of the Sesame Street library. The

aim of this game is to teach children visual skills needed for early reading and problem solving. The child must help Big Bird catch white and golden eggs thrown down to him in order to help him win the Country Fair Egg Contest. For every egg he catches the child scores a point (five for a golden egg) and the child must manoeuvre Big Bird to stand under a chute to catch each egg — otherwise it will fall to the ground and smash.

There are 10 skill levels and games for one or two players and is once again played using the Kids Controller. Atari say that this game 'helps impart a sense of timing and direction, together with improving hand and eye-coordination'.

If you buy the Kid's Controller seperately it will cost you about £15, but Atari is currently running a special offer whereby you can buy both the controller and the game together for £29.99. Each individual game costs £19.99.

ATARISOFT

Atarisoft — that's the new name given to Atari's range of computer games developed from existing VCS games.

So far the firm has concentrated in producing software for the Commodore 64 (in cartridge form) — titles include Centipede, Defender, Dig Dug, Pac Man, and Robotron 2084 and all are out now. For the TI/994a, also in cartridge form, are Defender, Donkey Kong, Pac Man, Picnic Paranoia and Protector II. The VIC 20 has the same games as the CBM 64 plus Donkey Kong, while the Spectrum has cassette versions of Galaxian, Pac Man and Ms Pac Man.

But the latest computer to receive attention from Atarisoft is the BBC. Unlike Parker Video Games Atari has decided to produce some of its games for the BBC machine despite the fact that it already has an extensive base of games available for it. Coming soon for the BBC Micro are titles like Dig Dug, Donkey Kong, Ms Pac Man and Pole Position.

Prices of the games from Atarisoft range from £14.99 for the Spectrum games to £19.99 and £24.99 for the other games. Prices for the BBC games as yet are not fixed. Don't forget to watch out in *Games Computing* for reviews of these games in future issues of the magazine.

YOUR VERY OWN ROBOT

Specialists in electronic toys Tomy has come up with a marvellous creation which will keep children and adults alike quite for hours.

The firm's voice recognition robot called KI-KU ZO on its front looks a bit like the android that soared to fame in the space fiction film Star Wars. He's a bit smaller though and is made of blue and white sturdy plastic. But inside he's full of the very latest in voice recognition electronics.

You can make him obey your every (well, all of eight) command(s), by first programming him to respond to such things as: **stop, talk to me, pick up, put down, go forward, go back, turn left** and **turn right**. You do so by pushing the eight yellow buttons located on his control panel on the front of his chest, and by speaking through a hand-held receiver.

When he moves, or listens to your voice you'll see his eyes light up and start flashing. He looks like quite a friendly soul and one that I can imagine many people will want to have around the house! The only slight drawback is the price. It currently stands at £35 which is a lot of money, but when you compare it with the price of a video game cartridge it doesn't sound so unreasonable. The question to ask, of course, is how long will its novelty value last?

3-D GAMES

A 1984 best-selling range could well be the Tomytronic 3-D Games from Tomy.

These are superb electronic hand-held games featuring 3-D graphics and one with stereo sound during play. Tomy have really excelled themselves with their new game Stereo Sky Fighters, an advanced development on a similar 3-D game brought out last year. The 3-D effect is tremendous as planes fly towards you and loop the loop across a three dimensional screen.

The stereo version has individual sounds for the planes and the machine gunfire, as well as two bi-planes that loop and loop. Although this toy costs about £30 you'll find it totally addictive and won't be able to put it down for ages.

Other similar games in the range include Sky Attack in which you control three laser firing tanks and you must use these to shoot down the enemy craft, or you can avoid them by dodging across the screen. There's also a car racing game called Thundering Turbos with special buttons for speeding up and slowing down your car as you race around the dangerous twists and turns of the course. Planet Zeon sees you in command of a space fighter fleet and you must destroy the enemy craft and capture the alien fuel tanker too. All in 3-D.

The other brand new addition to the range is Shark Attack and is based on the Sky Attack game. In Shark Attack what seem like hundreds of wide-mouthed sharks are attacking three divers, which you control. The divers have special spears to defend themselves from the sharks — use these to kill the sharks before they devour your divers. You can also avoid the sharks by dodging across the screen so that you miss being swallowed up by those great big jaws. The visual effects are so realistic that when a diver gets eaten you can almost feel those teeth sinking into your own flesh! Definitely not one for the squeamish. The price for this game is about £27.

BANDAI BOOST

Another electronic toy manufacturer showing their range of new toys for 1984 is Bandai and they appear to be an enormous improvement to the firm's range.

Bandai's pocket sized arcade games have been improved not only in looks, but also in playability with several new variations to the theme. Most noticeable is the mini hand-held game Space Centurian Gundam which consists of three screen games with joystick controller, a coloured screen background, sound effects and three phases of battle scenes in one game.

Similarily Bandai's version of the sucessful arcade hit Zaxxon shows a marked improvement with an in-built watch to boot.

In this game there are two different battle scenes displayed in lcd graphics, a joystick controller and sound effects. The game incorporates a three dimensional effect and five different game patterns. In addition you'll find buttons for firing missiles and dropping bombs on the unsuspecting enemy.

But a completely new addition to Bandai's range are the table top style arcade games. These are styled to look like coffee tables with arcade games incorporated into them, only the Bandai band are on a miniature scale. They have a look all of their own with the screen located on the 'top' of the table and the control buttons situated on the side of the table.

First off, there's a three colour flourescent game called Dynaman with a joystick controller, an attack button and sound effects. The object of the game is to kill off the enemy using your dynarockets and dynarobot and survive for as long as possible from enemy fire.

Others in the range, with the same facilities except for the three colour display are Toutankhamon and Space Guardian Gundam. In the first you hve to find the hidden treasure of Toutankhamon going through five different scenes. You must climb up a number of levels with a pyramid collecting things on your way and avoiding sudden dangers.

In Space Guardian Gundam there are three scenes in which to play for your life. In the first you must shoot the enemy spaceships and avoid all missiles fired by them. And in the second and third scenes you continue your onslaught to victory — if you're lucky. This game features a similar coloured screen background to Space Centurian Gundam as well as the standard joystick controller, sounds button fire and built-in clock.

MORE FROM BANDAI

Still remaining with this theme is another game in the range of Bandai products, the arcade, two-player arcade style Space Guardian Gundam. This time it's the guardian against the Zions (whoever they may be) and its features include four bright colours (white, red, blue and green), two battle scenes and a game for two players or two skill levels for one player. You can also adopt one of two strategies, defence or attack — it's up to you. Again this games has a built-in joystick controller.

Finally, Bandai has come up with an electronics robot game. Made out of chunky white plastic, with jointed arms, legs and chest the lcd game is located in the centre of his chest. There are three phases of battle scenes to play and you have to build up the robot as you play the game virtually following the story line. In the first part of the game you must make your robot avoid the missiles (the robot character is featured in the lcd game) and you must win the first to make up your own robots shoulders. Win the second to get the legs and so on.

You are told which part of the robot's body to add next by a sign on the screen, but you can only add on a piece of his body by actually winning the phase of a game. And it's only when you finally win the third and last phrase that you will be able to completely build your robot.

So you'd better make sure your arcade playing is right up to scratch or else you'll have loads of arms and legs all over the place!

So that's what to expect in the shops later in the year. Remember that most of the toys will not be appearing in the shops until after the middle of 1984 so you will have to wait and see for yourself what they're like to play.

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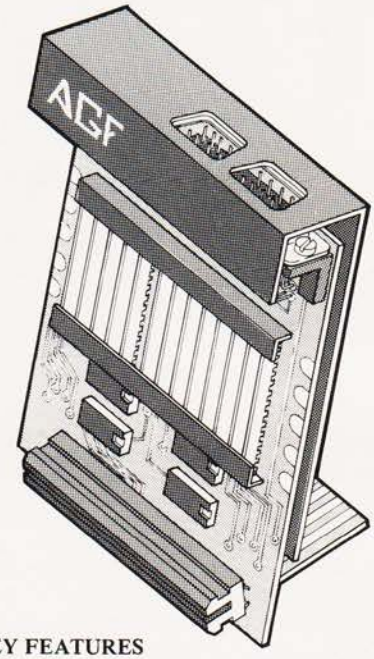

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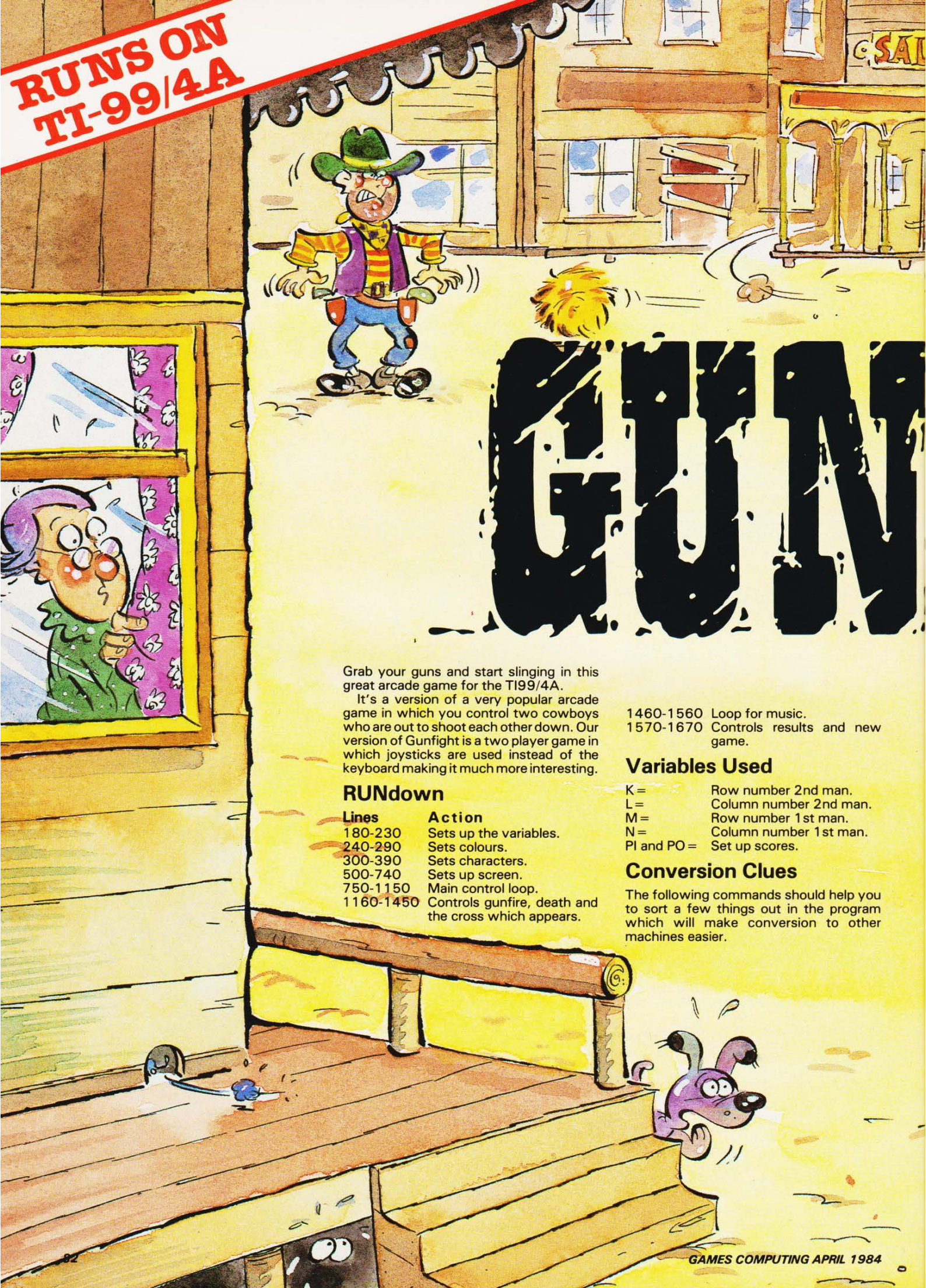
RUNS ON TI-99/4A



GUN

Grab your guns and start slinging in this great arcade game for the TI99/4A.

It's a version of a very popular arcade game in which you control two cowboys who are out to shoot each other down. Our version of Gunfight is a two player game in which joysticks are used instead of the keyboard making it much more interesting.

RUNdown

Lines	Action
180-230	Sets up the variables.
240-290	Sets colours.
300-390	Sets characters.
500-740	Sets up screen.
750-1150	Main control loop.
1160-1450	Controls gunfire, death and the cross which appears.
1460-1560	Loop for music.
1570-1670	Controls results and new game.

Variables Used

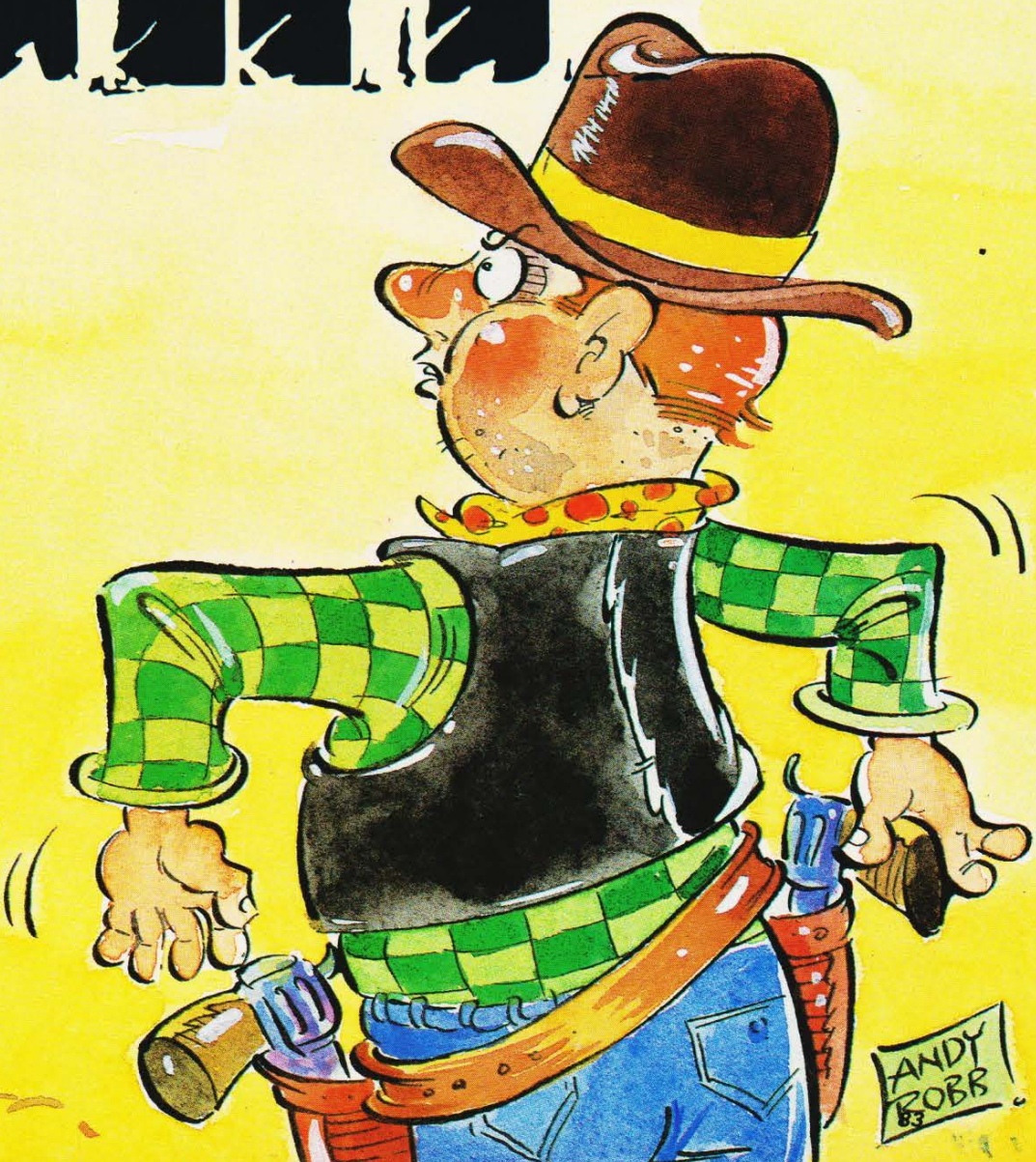
K=	Row number 2nd man.
L=	Column number 2nd man.
M=	Row number 1st man.
N=	Column number 1st man.
PI and PO=	Set up scores.

Conversion Clues

The following commands should help you to sort a few things out in the program which will make conversion to other machines easier.

FIGHT

CALL COLOR (A,B,C) Sets character group A to foreground colour B and background colour C.
CALL KEY (O,K,S) Input from keyboard or joystick button, key pressed is K, S tests if key has been pressed and returns 0 if no key has been pressed.
CALL CHAR (X,n$) Defines ASCII code X to hex string n$.
CALL SOUND (D,N,V) Creates a sound of D milliseconds, frequency N, volume V.
CALL CHAR(Rn,Cn,A,N) Places character A at row number Rn and column number Cn and repeats if N number of times horizontally.
CALL VCHAR (Rn, Cn, A, N) Works the same as HCHAR only repeats vertically instead of horizontally.
CALL GCHAR (Rn,Cn,N) Equivalent of Peek, assigns ASCII code of character at row and column stated to numeric variable N.
CALL CLEAR Clears the screen.
CALL SCREEN (C) Colours screen colour (C).
CALL JOYST Equivalent of call key but accepts control of joystick.



```
100 REM     by B.W.DAVIS
110 RANDOMIZE
120 CALL CLEAR
130 PRINT "GUNFIGHT":::"CONTROL THE MEN UP OR DOWN":"WITH YOUR JOYSTICKS AND":"SH
OOT WITH THE FIRE BUTTONS."
140 PRINT "YOU HAVE SIX SHOTS EACH":"BEFORE YOU CAN RELOAD":"BY PRESSING FIRE AG
AIN.":"PLAY WITH ALPHA LOCK UP."
150 PRINT "YOU CAN AVOID BEING HIT BY ":"HIDING BEHIND A CACTUS BUT":"DO NOT STA
Y THERE FOR LONG."
160 PRINT "YOUR SCORE IS DISPLAYED AT":"THE BOTTOM OF THE SCREEN.":"THE FIRST ON
E TO GET SIX IS THE WINNER.":::
170 INPUT "PRESS ENTER TO START":E$
180 K=5
190 L=28
200 M=18
210 N=4
220 PI=48
230 PO=48
240 CALL CLEAR
250 CALL SCREEN(2)
260 CALL COLOR(14,15,1)
270 CALL COLOR(15,13,1)
280 CALL COLOR(16,15,1)
290 CALL COLOR(3,8,1)
300 CALL CHAR(144,"1038383838383838")
310 CALL CHAR(145,"3B3B3B3B3B3B3B1B")
320 CALL CHAR(146,"1BDFDFDFDFDFDFFF")
330 CALL CHAR(147,"FFFE7C3C1C1C1C3E")
340 CALL CHAR(152,"003838FE383C3810")
350 CALL CHAR(153,"387C7C7C7C7C7C7C")
360 CALL CHAR(154,"7C7C3838383838383")
370 CALL CHAR(155,"383838383838")
380 CALL CHAR(156,"3C7F7F7C7C7C7C7C")
390 CALL CHAR(157,"00FCE0")
400 CALL CHAR(136,"001C1C7F1C3C1C08")
410 CALL CHAR(137,"1C3E3E3E3E3E3E3E")
420 CALL CHAR(138,"3E3E1C1C1C1C1C1C")
430 CALL CHAR(139,"1C1C1C1C1C7C")
440 CALL CHAR(140,"1CFEFE3E3E3E3E3E")
450 CALL CHAR(141,"003F07")
460 CALL CHAR(142,"001818FFFF181818")
470 CALL CHAR(143,"1818181818")
480 CALL CHAR(158,"0080")
490 CALL CHAR(159,"0010387C7C7C70FE")
500 FOR I=1 TO 4
510 READ H,J
520 CALL HCHAR(H,J,144)
530 CALL HCHAR(H+1,J,145)
540 CALL HCHAR(H+2,J,146)
550 CALL HCHAR(H+3,J,147)
560 NEXT I
570 B=2
580 D=23
590 CALL HCHAR(1,3,159,6)
600 CALL HCHAR(1,24,159,6)
610 CALL HCHAR(24,N,PI)
620 CALL HCHAR(M-1,N,32)
630 CALL HCHAR(M,N,152)
640 CALL HCHAR(M+1,N,153)
650 CALL HCHAR(M+2,N,154)
660 CALL HCHAR(M+3,N,155)
670 CALL HCHAR(M+4,N,32)
680 CALL HCHAR(24,L,PO)
690 CALL HCHAR(K-1,L,32)
700 CALL HCHAR(K,L,136)
710 CALL HCHAR(K+1,L,137)
720 CALL HCHAR(K+2,L,138)
730 CALL HCHAR(K+3,L,139)
740 CALL HCHAR(K+4,L,32)
750 CALL JOYST(1,X,Y)
760 CALL JOYST(2,V,W)
770 CALL KEY(1,A,S)
780 CALL KEY(2,C,S)
790 IF C=18 THEN 990
800 IF A=18 THEN 900
810 IF (Y<>4)+(M=4)THEN 830
820 M=M-1
830 IF (Y<>-4)+(M=19)THEN 850
840 M=M+1
850 IF (W<>4)+(K=4)THEN 870
860 K=K-1
870 IF (W<>-4)+(K=19)THEN 890
```

```
880 K=K+1
890 GOTO 620
900 IF B=8 THEN 1230
910 CALL HCHAR(M+1,N,156)
920 CALL HCHAR(M+1,N+1,157)
930 CALL SOUND(50,110,0,-6,0)
940 B=B+1
950 CALL HCHAR(1,B,32)
960 CALL HCHAR(M+1,N+1,32)
970 CALL HCHAR(M+1,N,153)
980 GOTO 1060
990 IF D=29 THEN 800
1000 CALL HCHAR(K+1,L,140)
1010 CALL HCHAR(K+1,L-1,141)
1020 CALL SOUND(50,110,0,-6,0)
1030 D=D+1
1040 CALL HCHAR(1,D,32)
1050 CALL HCHAR(K+1,L-1,32)
1060 CALL HCHAR(K+1,L,137)
1070 GOTO 1160
1080 FOR I=N+2 TO 30
1090 CALL GCHAR(M+1,I,E)
1100 IF (E>135)*(E<140)THEN 1240
1110 CALL HCHAR(M+1,I,158)
1120 CALL HCHAR(M+1,I,32)
1130 IF (E>143)*(E<148)THEN 750
1140 NEXT I
1150 GOTO 750
1160 FOR I=L-2 TO 2 STEP -1
1170 CALL GCHAR(K+1,I,F)
1180 IF (F>151)*(F<158)THEN 1350
1190 CALL HCHAR(K+1,I,158)
1200 CALL HCHAR(K+1,I,32)
1210 IF (F>143)*(F<148)THEN 750
1220 NEXT I
1230 IF (B=8)*(D=29)THEN 570 ELSE 610
1240 CALL VCHAR(K,L,32,2)
1250 CALL HCHAR(K+2,L,142)
1260 CALL HCHAR(K+3,L,143)
1270 PI=PI+1
1280 IF PI=54 THEN 1570
1290 Y=5
1300 X=19
1310 K=INT((Y-X+1)*RND)+X
1320 GOSUB 1460
1330 CALL VCHAR(2,28,32,22)
1340 GOTO 610
1350 CALL VCHAR(M,N,32,2)
1360 CALL HCHAR(M+2,N,142)
1370 CALL HCHAR(M+3,N,143)
1380 PO=PO+1
1390 IF PO=54 THEN 1600
1400 Y=5
1410 X=19
1420 M=INT((Y-X+1)*RND)+X
1430 GOSUB 1460
1440 CALL VCHAR(2,4,32,22)
1450 GOTO 610
1460 FOR X=1 TO 11
1470 READ P,Q,R,S
1480 CALL SOUND(P,R,2,S,2)
1490 FOR DELAY=1 TO 0
1500 NEXT DELAY
1510 NEXT X
1520 RESTORE 1550
1530 RETURN
1540 DATA 10,18,5,9,14,12,19,21
1550 DATA 700,200,156,160,650,160,156,160,400,100,156,160,700,250,156,160,500,10
0,180,185,400,100,170,175
1560 DATA 400,100,170,175,400,100,156,160,650,100,156,160,400,100,147,151,900,10
0,156,160
1570 CALL CLEAR
1580 PRINT "GOOD SHOOTING":"FIRST COWBOY WON ";CHR$(PI);"_";CHR$(PO)
1590 GOTO 1630
1600 CALL CLEAR
1610 PRINT "GOOD SHOOTING":"SECOND COWBOY WON ";CHR$(PO);"_";CHR$(PI)
1620 GOTO 1630
1630 CALL SCREEN(4)
1640 CALL COLOR(3,2,1)
1650 INPUT "PRESS ENTER FOR ANOTHER GAME":E$
1660 RESTORE
1670 IF E$="" THEN 180
```

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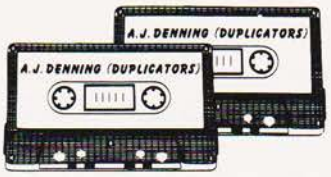

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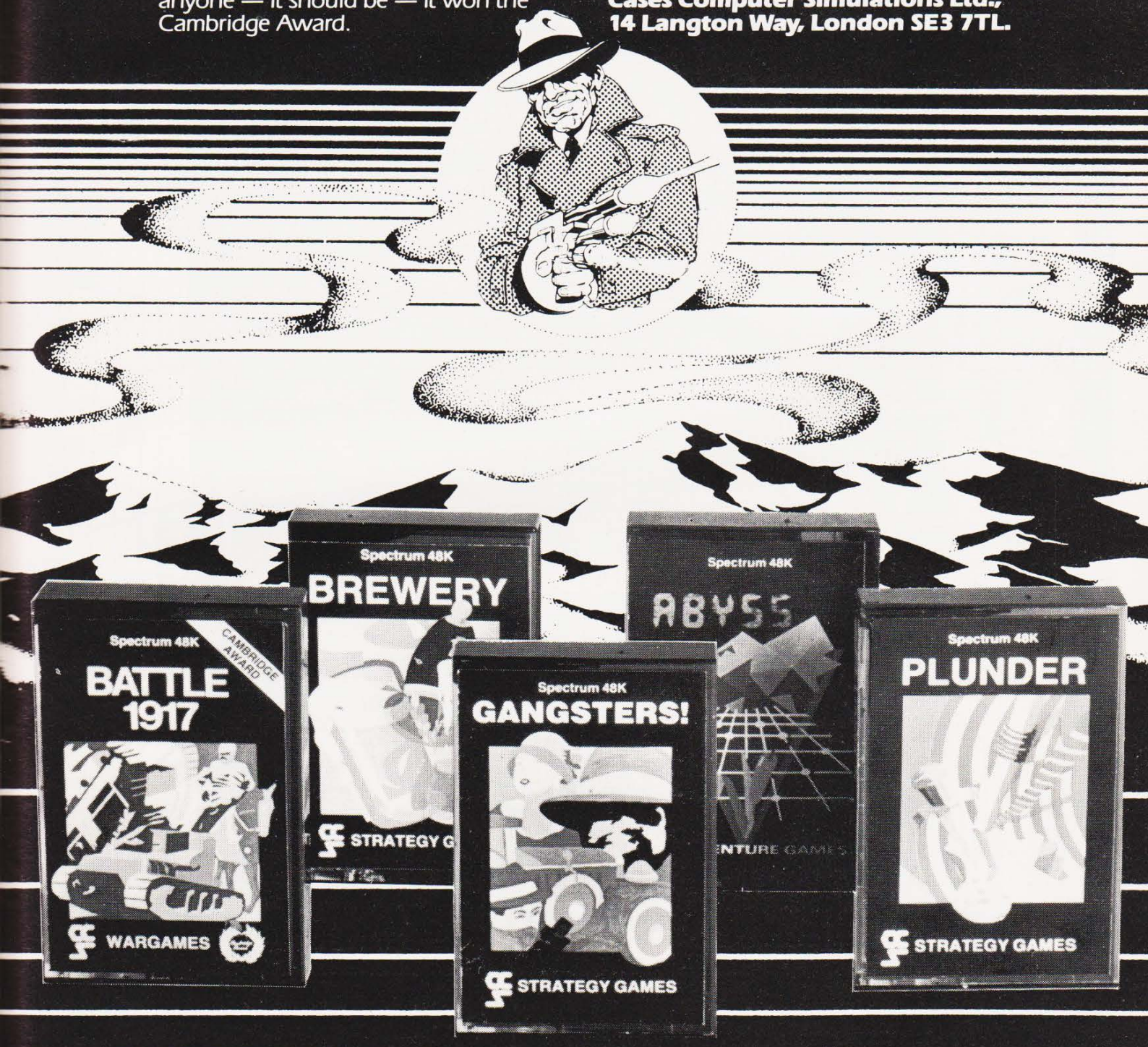

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ROCKMAN FILES

Simon Rockman's file this month focuses on a fascinating multi-user adventure game in which players can 'talk' to each other during play.
Simon plays the game himself and gives you both an insight into MUD and some game-play tips.

MUD is not a dirty substance found in your garden. It is the acronym for Multi-User Dungeon, perhaps the greatest adventure game yet written.

In the usual adventure vein you are transported to a fantasy land with the keyboard becoming your hands and feet and the screen your six senses. The computer needed to run MUD is a DEC 10, (a business Mini-computer), however, you can log into a remote DEC using a modem. I don't expect many *Games Computing* readers have a £1¼m mainframe and besides, it isn't much fun to play by yourself because MUD is multi user, which means that many people can play it by logging in either at the computer's site or by using a computer and a modem from anywhere in the world to play.

In the adventure you can meet other people's projections into this make-believe world. I have joined the game and so, for instance, if my character, Thor, wishes to open the portcullis but is not strong enough he can ask Zaal to help him. I have never met the person who plays Zaal but have had the odd chat with him in a CB sort of way. With another player's help I should be able to get through the portcullis.

MUD MUD GLORIOUS MUD

MUD is huge, so huge that it uses more memory than Essex University, where it resides, and it can only be run after midnight and at weekends when the demands on the computer are reduced. The adventure has hundreds of locations and objects with an extensive vocabulary. In this fantasy world treasure lies in many nooks and crannies, but beware — all that glisters is not gold — even the golden eagles egg traps you. This sticks to your hand so that you can't drop it. If you try to eat the egg you are informed that this is a golden egg, not a hard boiled one! The only way out is to give it to someone who must then pass it on and ad infinitum, or quit. Virtually every clever comment seems to have a reply. If you try the classic XYZZY command you are told that it is a very adventurous thing to say and that some people will try anything!

A sleek black cat may wander into the room, again beware there are two black cats in MUD, one quite tame and quite easy to kill, the other a ferocious feline who will probably destroy you in the attempt. Remember a cat has nine lives so you have to type 'kill cat' ten times before you are informed 'alright, alright, it's dead'. One use for a dead cat is to drop it in the swamp and claim some more points. You can save some time and trouble by just being curious . . . curiosity killed the cat.

MUD is so full of these little touches that you can never get bored. The ultimate treasure is the crown, worth 4500 points. This is hidden in the ever shifting swamp, a special maze because anything dropped sinks and so you can't map it out by leaving objects and seeing if you end up going in circles. You turn treasure into points by dropping it into the swamp. This means that no one else can pick it up and get it unless the game is reset and the treasure restored to it's proper place.

You can carry only a few objects at a time so you may have to choose between a treasure and a utensil such as a sword and hope that no one attacks you on the way back to the swamp or picks up the sword while you are gone. MUD has a type of character called a mobile. These are monsters controlled by the program such as the Dragon and the Vampire. To kill these a band of adventurers need to hunt down the creature hurling a combined strength to vanquish it.

WITCHES AND WIZARDS

When you quit your character is saved for later use so that you can build up experience. You go through many levels such as Warrior, Hero, Superhero, Enchanter and finally up to wizard (or witch, there are female equivalents for most of the levels). The wizard is a very powerful character, he has the 'WIZ MODE' command which allows him to use magic, to move and pick up people and things, to cause or stop fighting, to force people to do things and generally take control. It is not unknown for a wizard to remove the cliff from the beach and put it down at the exit so that anyone entering the game falls to their death.

Wizards do have a code of conduct and are supposed to reward people for putting up with their pranks. Wizards are unlikely, to mess with hand to hand combat, but for mortals this is a good source of points and provides interaction with the other players. Whole groups of people can join the fray all from the safety of their own terminal.

MUD is free to play, if you do have access to a DEC 10 it can be obtained from Richard Bartle at Essex University. Otherwise you need a computer, a modem and a telephone. You can then link up and log in. Details on the Essex end should be available from:

THE COMPUTER SOCIETY
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Answers for March

3. WHO WANTS TO BE A DULL BOY, THEN?

WORK	PLAY
PORK	PLOY
PORT	PLOT
PERT	SLOT
PEAT	SOOT
PRAT	SORT
PRAY	WORT
PLAY	WORK

4. TROUBLED WATERS

If you turn your calculator upside down and read the numbers they should spell out the word ' ShELL OIL .'

5. COMPUTE LOG.

COMPUTER LOG – SOLUTION

Letters = rows across
Numbers = columns down

G12	ACORN	B9	ZENITH
K9	SPECTRUM	E13	VIC
G14	ATARI	B3	ZX EIGHTY ONE
K9	SHARP	H11	PET
K9	SINCLAIR	C5	MODELA
G13	TANDY	H5	ACE
G14	ATOM	E6	ERNIE
G14	APPLE	C2	MR. BAB-BAGE
D13	IBM	C8	HAL
D16	COM-MODORE	M2	PEACH TREE
D12	BBC	M1	APRICOT
I8	DAI	I5	WANG
J14	LYNX	A12	SANYO
L7	DRAGON	K9	SORD
I7	NEW BRAIN	J8	ICL
D15	JUPITER	A8	ELECTRON
C16	ORIC	L16	SONY
B15	NASCOM	F1	MERLIN
G8	TEXAS	C9	VOX
F8	GENIE	C4	AQUARIUS
		E10	PRIME

6. YOUR NUMBER'S UP

1, 18, 4, 13, 6
They are the numbers clockwise around a dartboard.

7. JUMBLE SALE

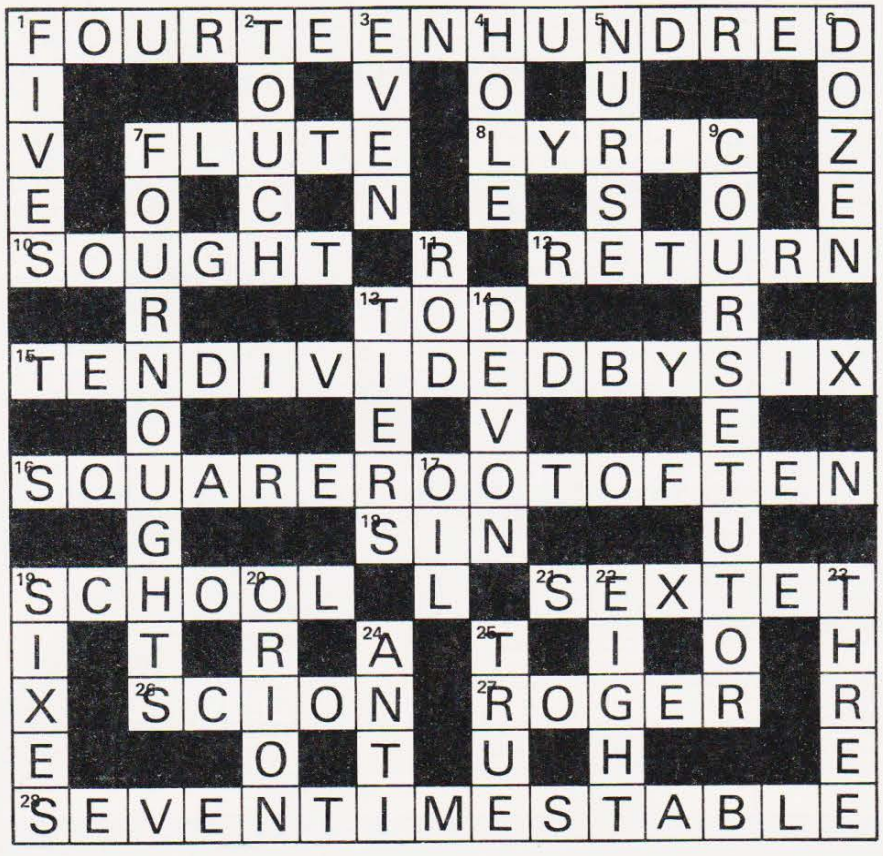
SAVED IN SCRAPE (Space Invaders)
TIM GUN GOES CAMP (Games Computing)
CRIMINAL SUSPECT 'R' (Sinclair Spectrum)
MOOD CROME (Commodore)

8. FERRY, FERRY INTERSETING

Bogus can transport all the items across the river. First he takes across the chicken. He returns alone, collects the fox and goes back to the chicken on the far side. He puts the fox ashore, and to prevent it being eaten, takes the chicken back to the original side with him. He puts the chicken back on the bank and rows across with the corn. Sure that the fox will not eat the corn, Bogus returns, collects the chicken and then rows back to join the fox and corn. Simple? Bogus is still sitting on the wrong side of the River Ella!

Readers with eagle eyes will have spotted a few discrepancies in the last couple of issues as far as the Puzzle Page goes. For instance in our March edition there was a No.9 entitled Falkovia Rules – which was, in fact, an answer to a previous issue. We have no excuse, but can only apologise to you, and Lou and Les Falk.

9. CROSS NUMBERS



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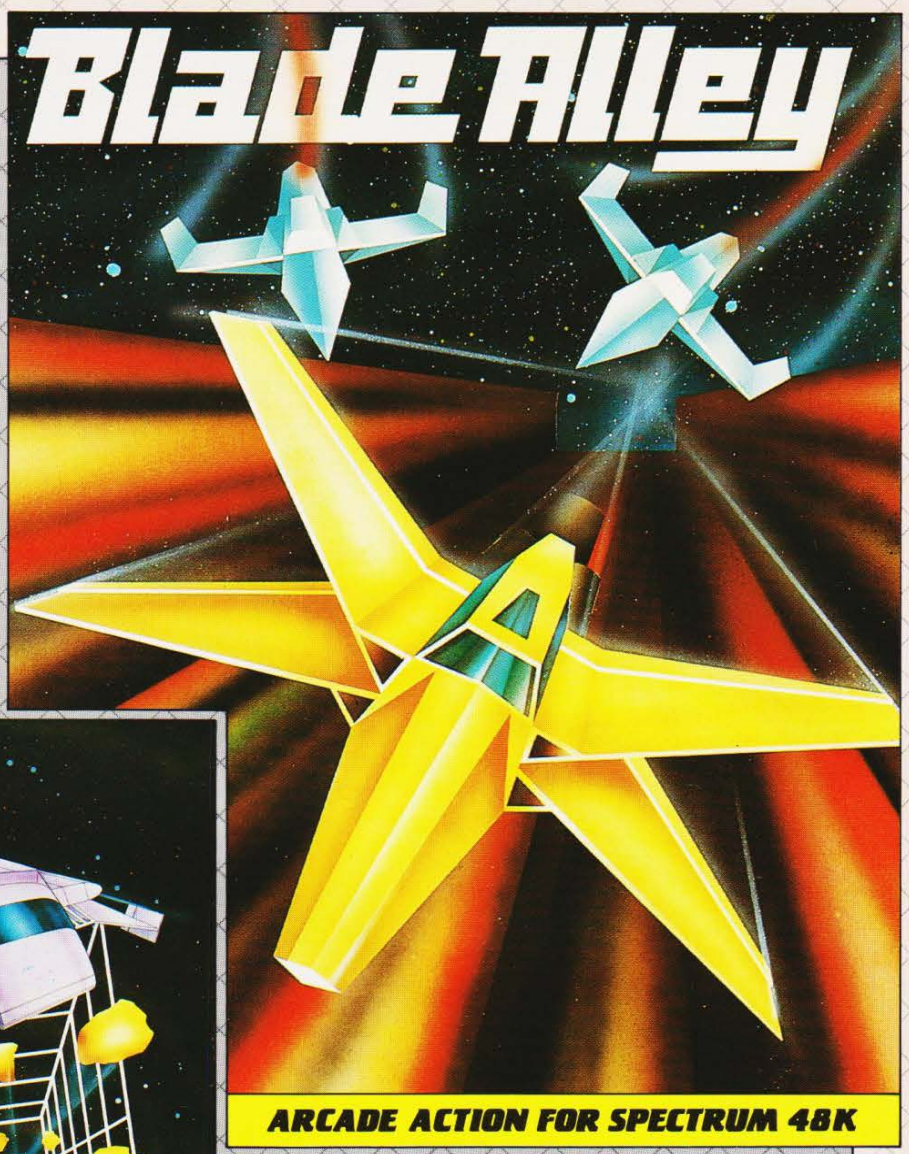

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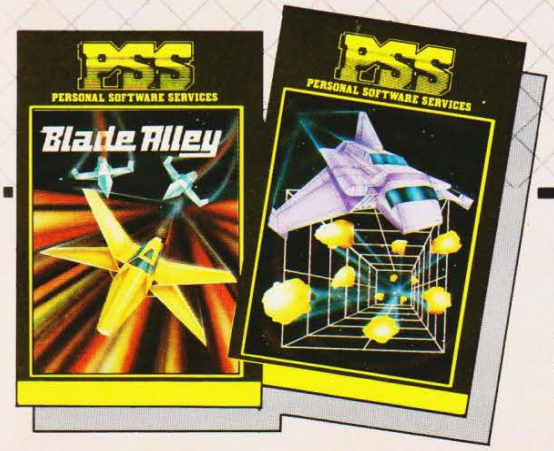

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Rescue Mission

You are in an airship that has a hole in it and is losing height rapidly. If you don't climb soon you will crash into the chimneys, but wait, what happens if we throw out all that Government gold we are carrying?

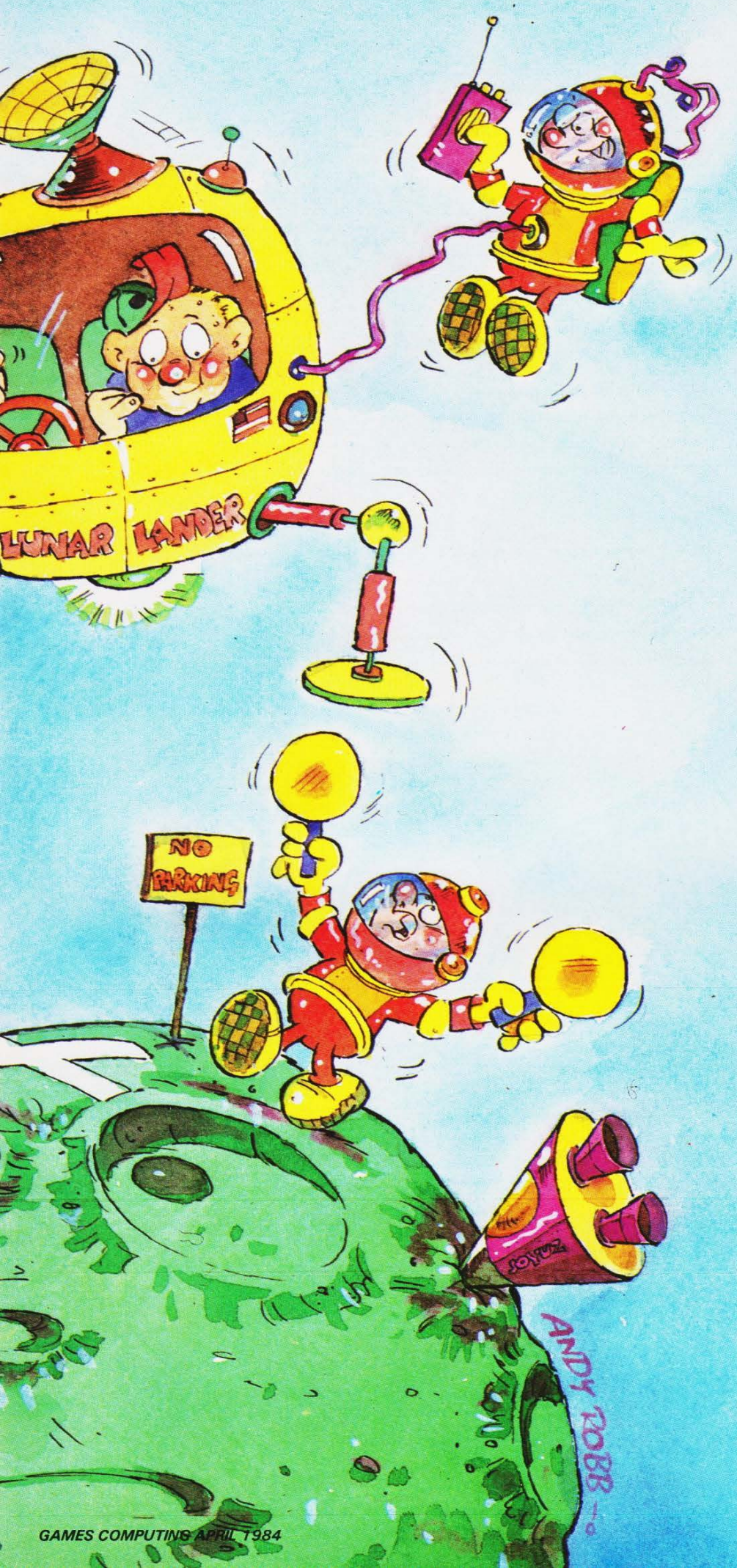
And so the scene is set. Your airship must drop its bags of gold out to gain height, but as gold is fairly expensive you must drop it into the very chimneys that you are in danger of crashing into so that they may be recovered!

When a bag of gold drops into a chimney you gain height. Miss the target and you will continue your decent.

RUNdown

Lines	Action
10-90	Set variables
100-380	Instructions
390-490	Define CHARacters and COLORs
500-680	Set up screen
690-780	Draw chimneys
790-860	Plot chimney pots
870-1000	Check for drop, crash, and movement of airship
1010-1170	Crash routine
1180-1450	Drop routine
1460-1540	Movement of airship after suitcases have dropped
1550-1590	PRINT at routine
1600-1620	DATA for defining CHARacters
1630-1790	END routine
1800-1930	Play again

RUNS ON TI-99/4A



Variables Used

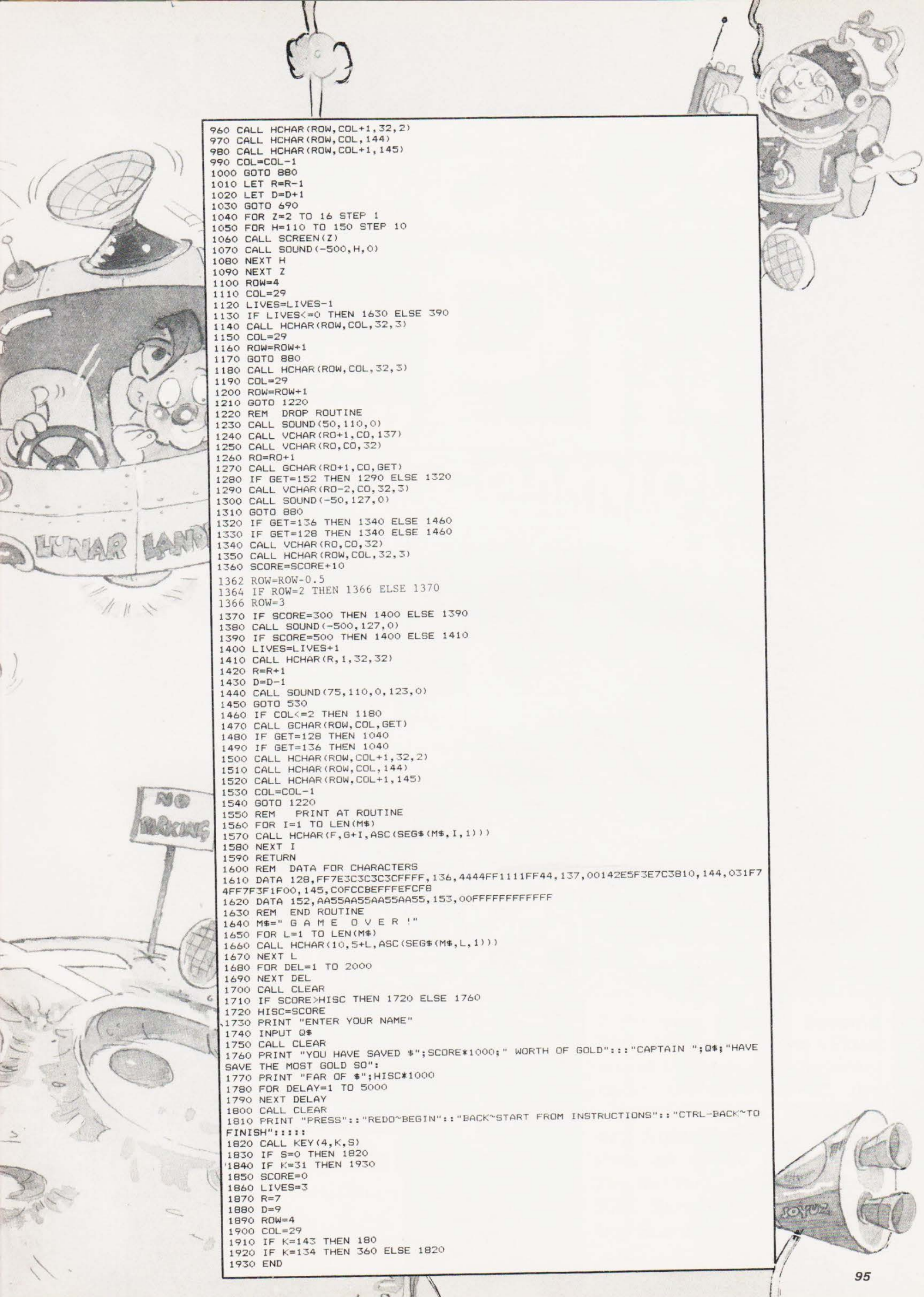
SCORE, LIVES	Self explanatory
HISC	Highest score
J,I,DEL,DELAY,Z,H	FOR/NEXT loop variables
R,D	Height of chimneys
RO,CO	Coordinates of suitcases
ROW,COL	coordinates of airship
M$,F,G	PRINT at loops
Q$,A$	INPUT loops
K	Read KEYboard variable
GET	Used in CALL GCHAR

Conversion Clues

If you are going to convert this program for another computer it will be difficult, but remember that the TI-99/4A has a 24 by 32 screen and uses user-defined characters. Here are the commands used and their explanations.

CALL CHAR(ASCII code number, hexadecimal string). Used in defining the characters where the ASCII code is the character to be re-defined, and the hexadecimal string is the bit pattern of the new character.
CALL HCHAR(row number, column number), ASCII code, number of repetitions. This will draw a horizontal line composed of the specified character.
CALL VCHAR(same as HCHAR). This is the same as HCHAR but will draw a line vertically.
CALL GCHAR(row number, column number, numeric variable). Reads the character in the specified screen location into the variable specified.
CALL CLEAR. Clears the screen.
CALL SCREEN(colour code). Changes the screen colour to that specified.
CALL COLOR(character set, foreground colour, background colour). Changes the colour of characters on screen.
CALL SOUND(duration, frequency, volume). Activates the sound generator.
CALL KEY(key unit, numeric variable, status). Equivalent to INKEY or GET.

```
10 REM  AIR-SHIP RESCUE
20 REM  INITIALISE
30 SCORE=0
40 HISC=0
50 LIVES=3
60 R=7
70 D=9
80 ROW=4
90 COL=29
100 CALL CLEAR
110 M$="DO YOU WANT INSTRUCTION?(Y/N)"
120 F=11
130 G=1
140 GOSUB 1550
150 INPUT A$
160 IF A$="Y" THEN 180
170 IF A$="N" THEN 390 ELSE 100
180 CALL CLEAR
190 PRINT "*****************************":
200 PRINT "AIRSHIP RESCUE BY D.& J.HUNG":
210 PRINT "*****************************":::
220 PRINT "YOU ARE A CAPTAIN OF AN":"AIRSHIP WHICH IS CARRYING":"SUITCASES OF GO
VERNMENT'S":
230 PRINT "GOLD WORTH $10,000 EACH AS":"YOU ARE CROSSING THE NORTH":"SEA,YOU REA
LIZE THERE IS A":
240 PRINT "HUGE HOLE AT THE SIDE OF THE":"SHIP.IT IS LOSING A LOT OF":"HEIGHT AN
D IS GOING TO CRASH":
250 PRINT "AGAINST THE CHIMNEYS BELOW.":"THE ONLY THING YOU CAN DO":"NOW IS TO T
HROW THIGS OUT":::
260 PRINT "PRESS ANY KEY TO CONTINUE":
270 CALL KEY(0,K,S)
280 IF S=0 THEN 270
290 CALL CLEAR
300 PRINT "YOU HAD THREW ALMOST EVERY":"-THING EXCEPT THE GOLD,BUT":"THE SHIP IS
 STILL LOSING ":
310 PRINT "HEIGHT FAST.YOU'VE TO THROW":"THE GOLD TOO.":::"YOUR TASK IS TO THROW
THE ":"SUITCASES INSIDE THE CHIMNEY":
320 PRINT "SO THE NAVY CAN COLLECT THEM":"AFTER.IF THE SUITCASES LAND":"IN THE S
EA NO ONE IS EVER"
330 PRINT "GOING TO FIND THEM.":::"USE THE SPACE-BAR TO RELEASE":"THE SUITCASES."
:"NOTE:THE SHIP WILL ONLY GAIN":
340 PRINT "ANY HIEGHT IF THE SUITCASES":"LAND IN THE CHIMNEYS.YOU":"GET AN EXTRA
-LIFE WHEN YOU":
350 PRINT "REACH 300 & 500 POINTS.":::
360 PRINT "  PRESS ANY KEY TO BEGIN"
370 CALL KEY(0,K,S)
380 IF S=0 THEN 370
390 CALL CLEAR
400 REM  DEF CHARACTERS & COLOURS
410 RESTORE 1610
420 FOR I=1 TO 7
430 READ N,N$
440 CALL CHAR(N,N$)
450 NEXT I
460 CALL COLOR(13,14,1)
470 CALL COLOR(14,3,1)
480 CALL COLOR(15,9,1)
490 CALL COLOR(16,6,1)
500 CALL SCREEN(16)
510 CALL HCHAR(15,1,152,32)
520 CALL HCHAR(16,1,153,256)
530 M$="SCORE "&STR$(SCORE)
540 F=1
550 G=21
560 GOSUB 1550
570 M$="HI~SCORE "&STR$(HISC)
580 F=19
590 G=10
600 GOSUB 1550
610 M$="LIVES "&STR$(LIVES)
620 F=1
630 G=2
640 GOSUB 1550
650 FOR J=2 TO (LIVES-1)*2 STEP 2
660 CALL HCHAR(2,J,144)
670 CALL HCHAR(2,J+1,145)
680 NEXT J
690 REM  DRAW CHIMNEYS
700 FOR J=3 TO 28 STEP 3
710 IF R>=10 THEN 1010
720 CALL VCHAR(R,J,136,D)
730 CALL VCHAR(R,6,32,2)
740 CALL VCHAR(R,6,32,2)
750 CALL VCHAR(R,12,32)
760 CALL VCHAR(R,18,32,3)
770 CALL VCHAR(R,24,32,4)
780 NEXT J
790 REM  PLOT CHIMNEY POTS
800 FOR J=3 TO 28 STEP 6
810 CALL HCHAR(R,J,128)
820 CALL HCHAR(R+2,6,128)
830 CALL HCHAR(R+1,12,128)
840 CALL HCHAR(R+3,18,128)
850 CALL HCHAR(R+4,24,128)
860 NEXT J
870 REM  CHECK FOR DROP OR CRASH
880 CALL KEY(0,K,S)
890 RO=ROW
900 CO=COL
910 IF K=32 THEN 1220
920 IF COL<=2 THEN 1140
930 CALL GCHAR(ROW,COL,GET)
940 IF GET=128 THEN 1040
950 IF GET=136 THEN 1040
```



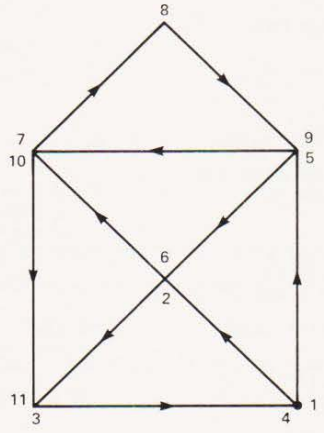
```
960 CALL HCHAR(ROW,COL+1,32,2)
970 CALL HCHAR(ROW,COL,144)
980 CALL HCHAR(ROW,COL+1,145)
990 COL=COL-1
1000 GOTO 880
1010 LET R=R-1
1020 LET D=D+1
1030 GOTO 690
1040 FOR Z=2 TO 16 STEP 1
1050 FOR H=110 TO 150 STEP 10
1060 CALL SCREEN(Z)
1070 CALL SOUND(-500,H,0)
1080 NEXT H
1090 NEXT Z
1100 ROW=4
1110 COL=29
1120 LIVES=LIVES-1
1130 IF LIVES<=0 THEN 1630 ELSE 390
1140 CALL HCHAR(ROW,COL,32,3)
1150 COL=29
1160 ROW=ROW+1
1170 GOTO 880
1180 CALL HCHAR(ROW,COL,32,3)
1190 COL=29
1200 ROW=ROW+1
1210 GOTO 1220
1220 REM  DROP ROUTINE
1230 CALL SOUND(50,110,0)
1240 CALL VCHAR(RO+1,CO,137)
1250 CALL VCHAR(RO,CO,32)
1260 RO=RO+1
1270 CALL GCHAR(RO+1,CO,GET)
1280 IF GET=152 THEN 1290 ELSE 1320
1290 CALL VCHAR(RO-2,CO,32,3)
1300 CALL SOUND(-50,127,0)
1310 GOTO 880
1320 IF GET=136 THEN 1340 ELSE 1460
1330 IF GET=128 THEN 1340 ELSE 1460
1340 CALL VCHAR(RO,CO,32)
1350 CALL HCHAR(ROW,COL,32,3)
1360 SCORE=SCORE+10
1362 ROW=ROW-0.5
1364 IF ROW=2 THEN 1366 ELSE 1370
1366 ROW=3
1370 IF SCORE=300 THEN 1400 ELSE 1390
1380 CALL SOUND(-500,127,0)
1390 IF SCORE=500 THEN 1400 ELSE 1410
1400 LIVES=LIVES+1
1410 CALL HCHAR(R,1,32,32)
1420 R=R+1
1430 D=D-1
1440 CALL SOUND(75,110,0,123,0)
1450 GOTO 530
1460 IF COL<=2 THEN 1180
1470 CALL GCHAR(ROW,COL,GET)
1480 IF GET=128 THEN 1040
1490 IF GET=136 THEN 1040
1500 CALL HCHAR(ROW,COL+1,32,2)
1510 CALL HCHAR(ROW,COL,144)
1520 CALL HCHAR(ROW,COL+1,145)
1530 COL=COL-1
1540 GOTO 1220
1550 REM   PRINT AT ROUTINE
1560 FOR I=1 TO LEN(M$)
1570 CALL HCHAR(F,G+I,ASC(SEG$(M$,I,1)))
1580 NEXT I
1590 RETURN
1600 REM  DATA FOR CHARACTERS
1610 DATA 128,FF7E3C3C3C3CFFFF,136,4444FF1111FF44,137,00142E5F3E7C3810,144,031F7
4FF7F3F1F00,145,C0FCCBEFFFEFCF8
1620 DATA 152,AA55AA55AA55AA55,153,00FFFFFFFFFFFF
1630 REM  END ROUTINE
1640 M$=" G A M E  O V E R !"
1650 FOR L=1 TO LEN(M$)
1660 CALL HCHAR(10,5+L,ASC(SEG$(M$,L,1)))
1670 NEXT L
1680 FOR DEL=1 TO 2000
1690 NEXT DEL
1700 CALL CLEAR
1710 IF SCORE>HISC THEN 1720 ELSE 1760
1720 HISC=SCORE
1730 PRINT "ENTER YOUR NAME"
1740 INPUT Q$
1750 CALL CLEAR
1760 PRINT "YOU HAVE SAVED $";SCORE*1000;" WORTH OF GOLD":::"CAPTAIN ";Q$;"HAVE
SAVE THE MOST GOLD SO":
1770 PRINT "FAR OF $";HISC*1000
1780 FOR DELAY=1 TO 5000
1790 NEXT DELAY
1800 CALL CLEAR
1810 PRINT "PRESS"::"REDO~BEGIN"::"BACK~START FROM INSTRUCTIONS"::"CTRL-BACK~TO
FINISH":::::
1820 CALL KEY(4,K,S)
1830 IF S=0 THEN 1820
1840 IF K=31 THEN 1930
1850 SCORE=0
1860 LIVES=3
1870 R=7
1880 D=9
1890 ROW=4
1900 COL=29
1910 IF K=143 THEN 180
1920 IF K=134 THEN 360 ELSE 1820
1930 END
```

PUZZLES

ANSWERS

1 SQUARE DANCE

I'm not quite sure how to illustrate this answer but this will have to do.

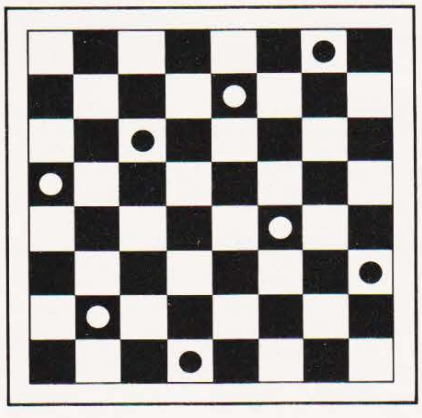


2 BOX NUMBERS

The answer is 1260

A 1	C 9	E 8	D 4
I 5		F 2	G 0
A 1	B 6		C 9
C 9	J 3	H 7	B 6

3 ALL SQUARE



4 MAGIC SQUARE

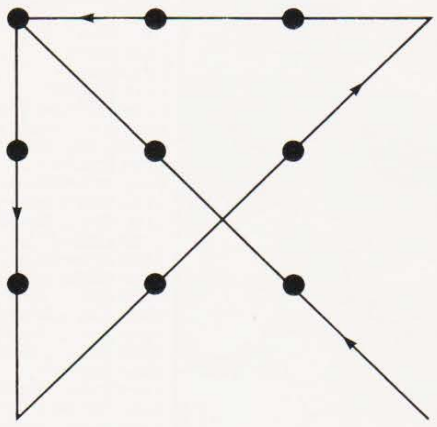
There are several answers to this — shown below.

1	15	14	4
12	6	7	9
8	10	11	5
13	3	2	16

1	14	15	4
8	11	10	5
12	7	6	9
13	2	3	16

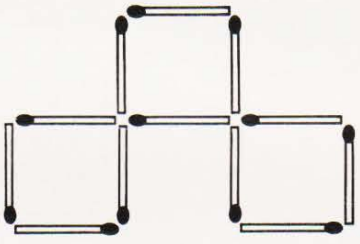
1	12	13	8
15	6	3	10
4	9	16	5
14	7	2	11

5 SQUARE PEGS



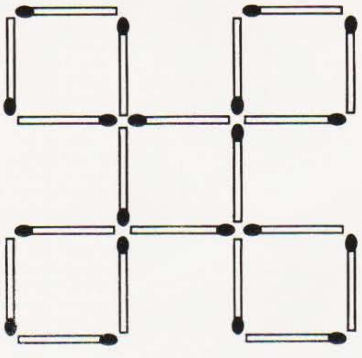
6 SQUARE RIGGED

1



2

3



7 SQUARE MEALS

He started at El Muto (the tutor). He should have started at Facotti (the bodyguard).

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RUNS ON
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SI

EA DOG

Run silent, run deep as a 'U' boat captain of your BBC 'A', 'B', or Acorn Electron. Torpedo enemy shipping and destroy the mines that are dropped on you. There is only one ship on the screen at any one time, but it moves, and changes direction very quickly. Instructions and controls are explained in the program. Good luck Captain.

RUNdown

Line	Action
10	Defines PROCIntro.
20	Sets up MODE.
30-120	Sets up variables.
130	Turns off flashing cursor.
140	Goes to PROCchar.
150	Repeat.
160	PROCshipmove.
170	PROCsubmove.
180	PROCminemove.
190-200	PROCtest (In case of anything getting hit).
210-270	Checks firing keys of submarine and random number for ship.
300-390	Defines characters.
420-490	Positions ship on screen.
520-600	Positions sub. on the screen and checks for keys being pressed.
630-710	Moves mine across and down the screen.
740-830	Movement of the torpedo.
790-830	Tests for anything that has been hit.
860-910	Tests if the mine has been hit.
940-1020	Checks if the ship has been hit.
1050-1090	Decreases the number of lives by 1.
1080	If number of lives = 0 then PROCend.
1120-1240	Defines the end.
1270-1760	Defines the Introduction.

Main Variables Used

A2% =	X co-ordinates of the ship.
B2% =	Y co-ordinates of the ship.
SC% =	Score.
LIVES =	Number of lives left.
HS% =	High Score.
C% =	X co-ordinates of the submarine.
D% =	Y co-ordinates of the submarine.
E% =	Y co-ordinates of the mine.
F =	X co-ordinates of the mine.
X% =	X co-ordinates of the submarines torpedo.
Y% =	Y co-ordinates of the submarines torpedo.
XB% =	X co-ordinates of the ships mines.
YB% =	Y co-ordinates of the ships mines.
PET% and JIM% =	Variables of the flags used for the mine and torpedo.

```
 10PROCIntro
 20MODE2
 30A2%=16:B2%=5
 40SC%=0
 50LIVES=3
 60HS%=100
 70C%=10:D%=25
 80E%=15:F=0
 90X%=10:Y%=10
100XB%=10:YB%=10
110PET%=0
120JIM%=0
130VDU23;8202;0;0;0;
140PROCchar
150REPEAT
160PROCshipmove
170PROCsubmove
180PROCminemove
190PROCtest
200PROCtestb
210IFINKEY(-1) AND PET%=0 AND C%>4 THEN X%=C%:Y%=D%:PET%=1
220IFRND(10)=1 AND JIM%=0 AND B2%>4 THEN XB%=A2%:YB%=B2%:JIM%=1
230IFPET%=1 THEN PROCbull
240IFJIM%=1 THEN PRINTTAB(XB%,YB%);" ":YB%=YB%+2:PRINTTAB(XB%,YB%);CHR$233
250IF Y%=1 THEN PET%=0:PRINTTAB(X%,Y%);" "
260IF YB%>28THEN JIM%=0:PRINTTAB(XB%,YB%);" "
270UNTIL 0
280:
290:
300DEF PROCchar
310VDU23,225,0,0,1,1,255,127,63,31
320VDU23,226,56,56,255,255,255,255,255,255
330VDU23,227,0,0,128,128,255,254,252,248
340VDU23,228,1,1,15,127,255,255,127,63
350VDU23,229,64,64,240,254,255,255,254,252
360VDU23,230,129,66,60,60,60,60,66,129
370VDU23,232,24,60,60,60,24,60,126,126
380VDU23,233,126,70,24,24,24,24,24,24
390ENDPROC
400:
410:
420DEF PROCshipmove
430D$=CHR$225+CHR$226+CHR$227
440COLOUR 2
450PRINTTAB(A2%,B2%);" ";D$;" "
460A2%=A2%+RND(3)-2
470IFA2%>16 THEN PRINTTAB(A2%,B2%);"       ":A2%=13
480IFA2%=1 THEN PRINTTAB(A2%,B2%);"       ":A2%=28
490ENDPROC
500:
510:
520DEF PROCsubmove
530B$=CHR$228+CHR$229
540COLOUR 3
550PRINTTAB(C%,D%);" ";B$;" "
560IF C%=27 THENPRINTTAB(C%,D%);"     ":C%=1
570IF C%=0 THENPRINTTAB(C%,D%);"     ":C%=17
580C%=C%+INKEY(-98)-INKEY(-67)
590ENVELOPE1,2,64,-64,128,1,1,5,127,127,0,-2,126,126:SOUND1,1,-2,1
600ENDPROC
610:
620:
630DEF PROCminemove
640E$=CHR$230
650COLOUR 14
660PRINTTAB(F,E%);" ";E$
670F=F+.7
680IF F>17 THEN PRINTTAB(F,E%);"  ":F=0:E%=E%+1
690FORL%=1 TO300:NEXT
700IF E%=20 THEN PRINTTAB(F,E%);"  ":E%=10
710ENDPROC
720:
730:
740DEF PROCbull
750PRINTTAB(X%,Y%);" "
760Y%=Y%-1
770PRINTTAB(X%,Y%);CHR$232
780ENDPROC
790DEF PROCtest
800IFX%=INT(F) AND Y%=E% THEN PROChitm
810IFX%>A%-1 AND X%<A%+4 AND Y%=5 THEN PROChits
820IFX%>A2%-1 AND X%<A2%+4 AND Y%=5 THEN PROChits
830ENDPROC
840:
850:
860DEF PROChitm
870PET%=0:PRINT TAB(X%,Y%);" "
880Y%=2
```

```
 890SC%=SC%+10
 900PRINTTAB(10,0);CHR$83+CHR$99+CHR$111+CHR$114+CHR$101+CHR$61;SC%
 910ENDPROC
 920:
 930:
 940DEF PROChits
 950PET%=0:PRINT TAB(A2%,B2%);"   "
 960Y%=2
 970SC%=SC%+5
 980PRINTTAB(10,0);CHR$83+CHR$99+CHR$111+CHR$114+CHR$101+CHR$61;SC%
 990ENDPROC
1000DEF PROCtestb
1010IFXB%>C% AND XB%<C%+3 AND YB%=D% THENPROClive
1020ENDPROC
1030:
1040:
1050DEF PROClive
1060LIVES=LIVES-1
1070PRINTTAB(0,0);CHR$76+CHR$105+CHR$118+CHR$101+CHR$115+CHR$61;LIVES
1080IFLIVES=0 THEN PROCend
1090ENDPROC
1100:
1110:
1120DEF PROCend
1130VDU22,7
1140IF SC%<HS% THEN GOTO1180 ELSE CLS
1150FORQ%=1 TO 2:PRINTTAB(5,Q%);CHR$141;"Con9ratulations"
1160NEXT
1170PRINT'"You have reached today's hi9hest score."
1180FORQ%=10 TO 11
1190PRINTTAB(10,Q%);CHR$141;"ANOTHER GAME ?"
1200NEXT
1210A$=GET$
1220IF A$="Y" THEN GOTO160
1230IF A$="N" THEN END
1240GOTO1210
1250:
1260:
1270DEF PROCIntro
1280CLS
1290FOR Q%=8 TO 9
1300PRINTTAB(8,Q%);CHR$141;"Sea-Do9"
1310NEXT
1320FOR Q%=11 TO 12
1330PRINTTAB(10,Q%);CHR$141;"Desi9ned by"
1340NEXT
1350FOR Q%=14 TO 15
1360PRINTTAB(12,Q%);CHR$141;"Peter Mitchell."
1370NEXT
1380PRINT''"PRESS ANY KEY"
1390A$=GET$
1400CLS:FOR Q%=1 TO 100
1410NEXT
1420FOR Q%=2 TO 3
1430PRINTTAB(10,Q%);CHR$141;"Sea-Do9"
1440NEXT
1450PRINT''"This is a version of the Popular"
1460PRINT"arcade 9ame 'SEA-WOLF'."
1470PRINT''"You are the yellow submarine at the"
1480PRINT"bottom of the screen."
1490PRINT''"At the top of the screen is a 9erman"
1500PRINT"mine-layer,who has dropped a mine"
1510PRINT"aboveyou."
1520PRINT''''"PRESS ANY KEY"
1530A$=GET$
1540FOR Q%=1 TO 100
1550NEXT
1560CLS
1570PRINT''"The mine is set to self-destruct at"
1580PRINT"the bottom of the screen,so it is your"
1590PRINT"task to explode the mine or else it"
1600PRINT"will explode killin9 you !!"
1610PRINT''''"PRESS ANY KEY "
1620A$=GET$
1630FOR Q%=1 TO 100
1640NEXT
1650CLS
1660FOR Q%= 2 TO 3
1670PRINTTAB(2,Q%);CHR$141;"Controls "
1680NEXT
1690PRINT''''"Left.....Z"
1700PRINT'"Ri9ht.....X"
1710PRINT'"Shift.....FIRE"
1720PRINT'''''"PRESS ANY KEY TO START"
1730A$=GET$
1740FOR Q%= 1 TO 100
1750NEXT
1760ENDPROC
```

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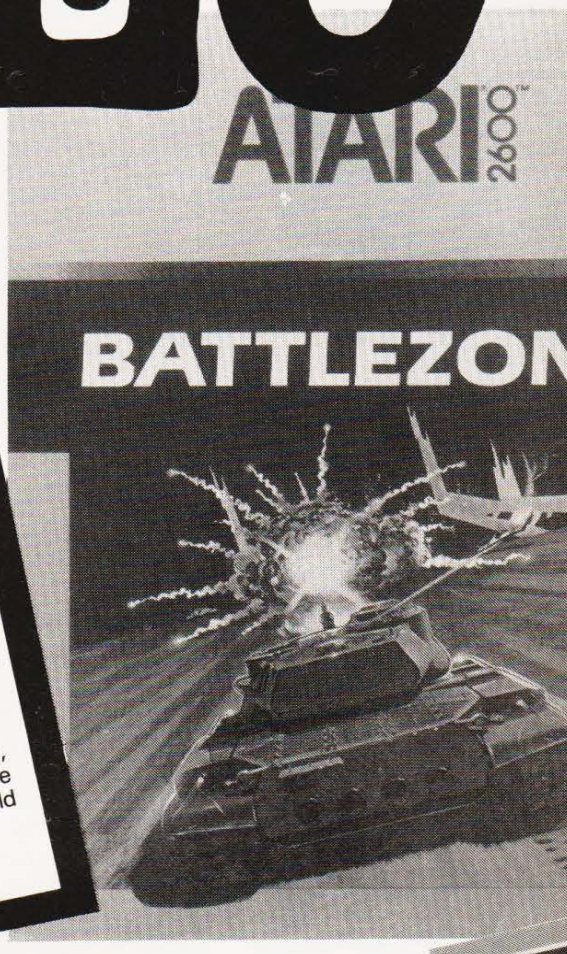


BATTLEZONE

Runs on: Atari VCS

This is a fair attempt at the famous arcade game, and taking the limitations of the VCS/Atari 2600 into account they have done very well.

All the features of the true arcade game of Battlezone are here, except that the controls are a bit different due to only having one control stick. The game is based on you being the commander of a tank, trying to shoot up all the other tanks in the area that are out to get you. In addition these are other tanks to avoid, flying saucers, and aeroplanes causing untold hazards.

The screen display is taken up with a forward view from the turret, status information, and a radar scope. The radar tells you where the enemy is and what your view of them is. The status line gives you the score and your remaining lives. The forward view is very good and makes the most of the VCS's limited graphics.

The sound is impressive and realistic, control is good and accurate. The whole game is very well put together and should find a place on a lot of peoples shelves.

Made by: Atari
Price: £29.99

MOON PATROL

Runs on: Atari VCS

This game involves driving your moon buggy across a pot-holed lunar terrain with obligatory aliens trying to bomb you, maim you, or generally make your life a total misery.

Points are awarded for jumping craters, shooting the aforementioned bug eyed monsters, and for completing each section of the course.

The graphics are fairly uninspiring and leave little to be desired. On the whole the game is not up to Atari's usual high standards and doesn't really warrant the selling price.

This sort of game will only sell to 'moon buggy buffs', and people whose local video games shop is out of stock of everything else.

Atari can do much better, because I have seen better on the VCS, so why don't they?

Made by: Atari
Price: £29.99

POLE POSITION

Runs on: Atari VCS

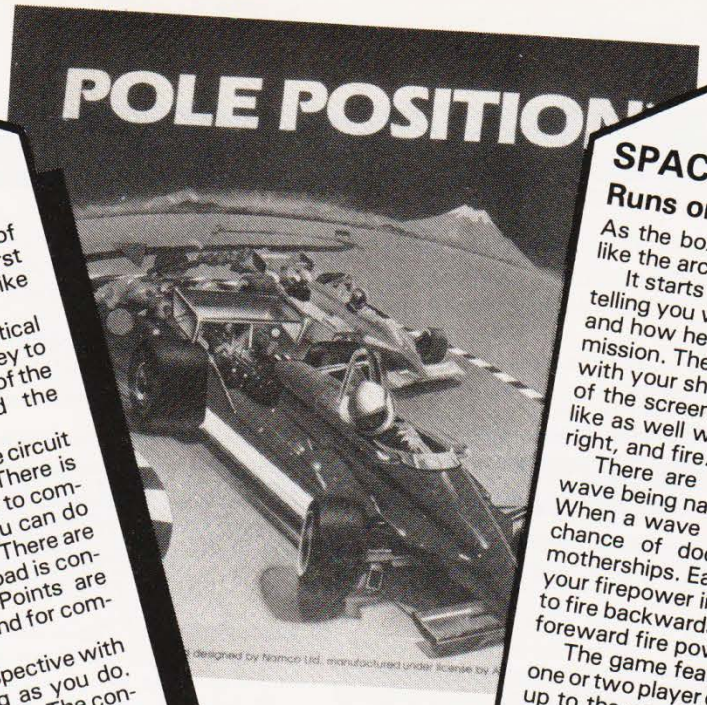
It is hard to believe that the grandfather of modern video games, the Atari VCS, first launched in 1977, can still have games like this programmed for it.

I wouldn't say that this game is identical to the arcade game that you pay money to play, but it is a good try and has most of the features associated with it and the graphics are fast and furious.

The senario is of a grand prix race circuit with you as a competing driver. There is one qualifying lap which you have to complete in a preassigned time. If you can do that then it is onto the race itself. There are other cars to overtake and the road is constantly twisting and turning. Points are scored for passing other cars and for completing laps.

The graphics are in full perspective with the road and scenery turning as you do. The whole effect is very realistic. The control is a bit odd, with pushing the stick forward to change into a lower gear, but that is a minor point. The sound is adequate with realistic engine noises. Another good game from Atari.

Made by: Atari
Price: £29.99



SPACE FURY

Runs on Colecovision

As the box proclaims, Space Fury is just like the arcade game.

It starts off with a one eyed green alien telling you what he thinks of earth people, and how he is going to beat you into submission. Then you start the game propper, with your ship Asteroids like in the centre of the screen. The controls are Asteroids like as well with thrust, rotate left, rotate right, and fire.

There are four waves of aliens each wave being nastier than the previous one. When a wave is completed you have the chance of docking with one of three motherships. Each mothership will modify your firepower in some way, enabling you to fire backwards, sideways, or triple your foreward fire power.

The game features four skill levels and one or two player options. The graphics are up to the usual colecovision standards of excellance. The opening page is very good with a very realistic, and gruesome, looking bug eyed monster. This monster also appears at the end where he tells you what he thinks of your performance against him (her?).

The game is quite enjoyable to play and can get quite hair-raising at times. The price tag is quite high when compared to cartridges for home computers, but I think it's worth paying for.

Made by: Colecovision
Price: £29.95

GORF

Runs on: Colecovision

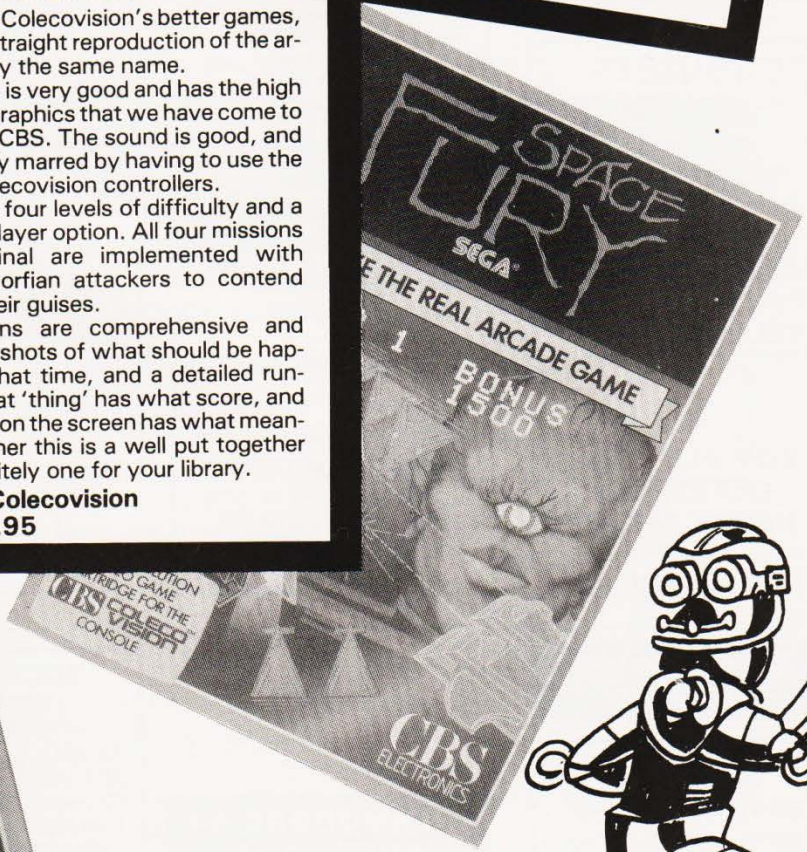
As with all of Colecovision's better games, this one is a straight reproduction of the arcade game by the same name.

The game is very good and has the high standard of graphics that we have come to expect from CBS. The sound is good, and control is only marred by having to use the standard Colecovision controllers.

There are four levels of difficulty and a one or two player option. All four missions of the original are implemented with gruesome Gorfian attackers to contend with in all their guises.

Instructions are comprehensive and have screen shots of what should be happening at what time, and a detailed rundown of what 'thing' has what score, and what 'thing' on the screen has what meaning. Altogether this is a well put together game. Definitely one for your library.

Made by: Colecovision
Price: £29.95



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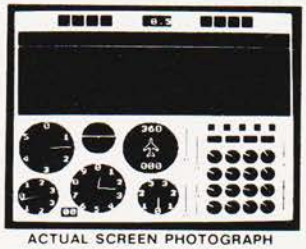

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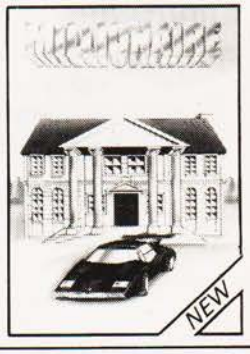

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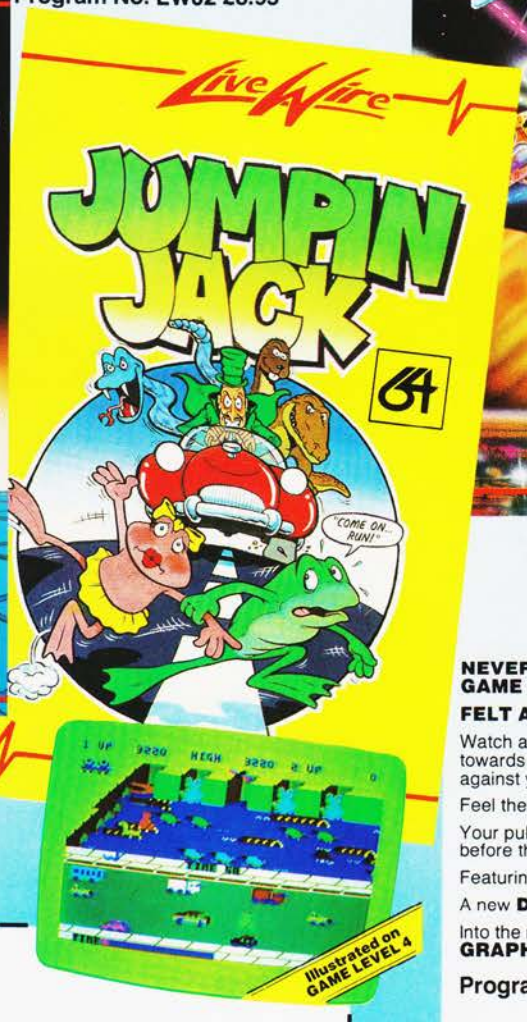

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