

70p

Win a Comx 35 computer

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COMPUTER

AUGUST 1983 BRITAIN'S BIGGEST-SELLING HOME COMPUTER MAGAZINE Vol. 3 No. 8

Run silent, run deep with Spectrum War beneath the Waves

Reviews:
£120 Comx 35 micro
BBC software

C.V. KRIMPEN

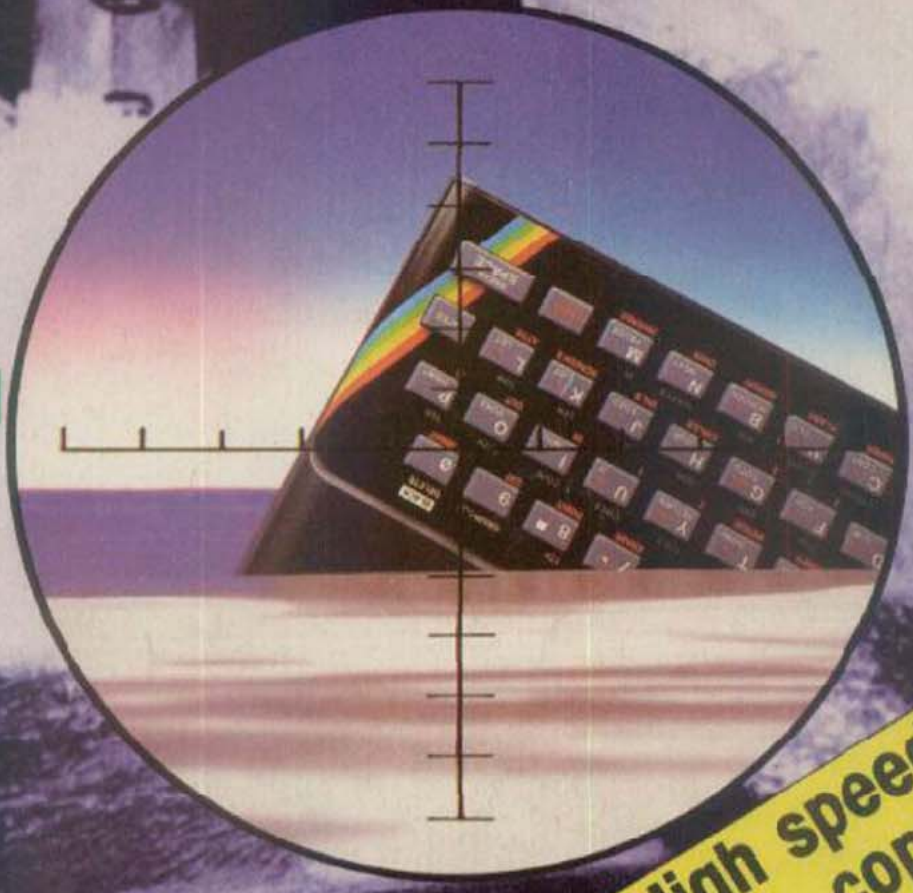
Vic-20 Flying Saucer Attack

Spectrum Tortoise graphics

ZX-81 Death Duel

Dragon Gnasher and Store and Search

Compacting BBC Basic

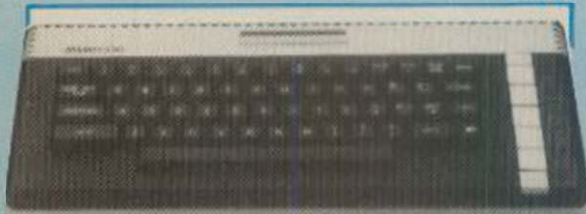


High speed ZX-81 compiler

YOUR COMPUTER

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AUGUST 1983



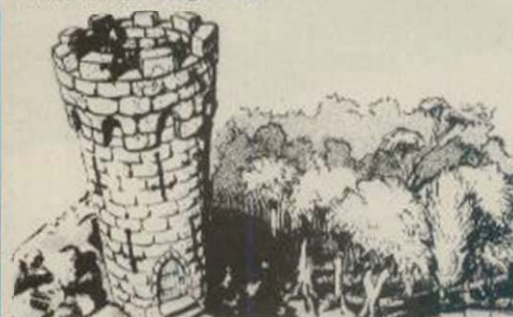
Latest Ataris. News: page 42



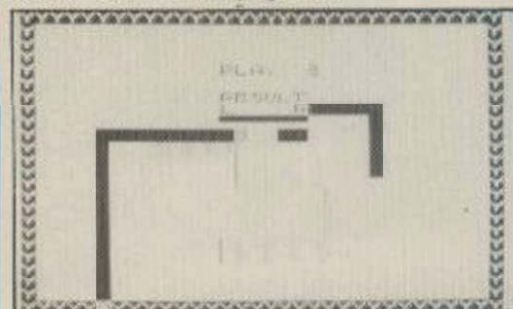
Star games Shortlist: page 51.



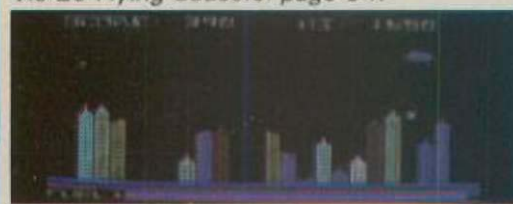
Above BBC software: page 52. Below Timeswitch: page 64.



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Cover photograph by Stephen Oliver.

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- 56 COMX35:** The latest Hong Kong import — a colour micro with 35K for £120 and a built in joystick — reviewed by Kathleen Peel.
- 64 SPECTRUM TIMESLIDER:** You are stranded 1,000 years from home and your only hope of return is to find your Time Machine before the Adventure ends.
- 68 ZX-81 DEATH DUEL:** A fast Tron-style game for two players perfected by Tavcar Igor in Yugoslavia.
- 71 DRAGON GNASHER MAZE:** A different maze every game and choice of ghosts which can float through walls, presented by John Nash.
- 77 ZX-81 COMPILER:** David Threlfall is back in the fast lane with practical examples showing how to compile particular functions.
- 85 VIC-20 MONITOR:** Sometimes running a machine-code program can be as complicated as running a power station. Alan Westwood's monitor puts the facts at your finger tips.
- 90 BBC SCRAMBLER:** All the excitement of arcade-style Scramble with minimalist teletext graphics for the real purists.
- 94 VIC-20 FLYING SAUCER ATTACK:** Livelier than any commercial version of Blitz, this game is fast, colourful and noisy.
- 100 ORIC CENTEPODS:** David Whitehead leads you up the garden path with the loudest game we have ever published.
- 105 ZX-81 CASSETTE FILES:** Kevin Hill's program will allow you to store the whole Encyclopaedia Britannica on ZX-81 cassettes — if you have a lifetime to spare.
- 108 SPECTRUM SUBMARINE MISSION:** Another realistic Rod Hopkins simulation puts you in control of a British submarine hunting U-boats.
- 120 TORTOISE ON SPECTRUM:** With Turtles an endangered species Chris Davison has turned to the Tortoise for Spectrum graphics.
- 123 BBC COMPACTOR:** Line crunching, space munching, bit smacking Fintan Culwin shows you how to get the most into your BBC Micro.
- 133 DRAGON STORE AND SEARCH:** John Nash turns the Dragon 32 into a useful library tool which could guide you to references.
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- 151 RESPONSE FRAME:** Tim Hartnell answers queries on VDU commands for the BBC and computing for the disabled.
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- WIN A COMX:** See card at page 38
- 177 COMPETITION CORNER:** New teaser, Microline printer winner.

Listing 1. The initialising program.

```

5 REM FOR C READ HASH CHARACTER
10 REM ... SCRAMBLER ...
30 REM Copyright (c) D.Griffin 1983
70 MODE 7
80 VDU 23,1,0,0,0,0,0
90 PROC title
100 PROC machine_code
110 CHAIN ""
120 END
130 DEFPROC title
140 FOR I=0 TO 5:VDU 31,0,1,132,157,150,31,39,1,156:NE
XT
150 PRINT TAB(3,0):"  _ppp0 _ppp0 pppp _ppp"
160 PRINT TAB(3,1):" h1.1j1v5c.1j165i.145:kh1jh'h.14"
170 PRINT TAB(3,2):" ju:"j155/xj_0554455:kj1j"CHR$255
180 PRINT TAB(3,3):" j7-jjt551jzju55555up"j#ojpzjh45
190 PRINT TAB(3,4):" */. / .-/. :--X (... -.-X
200 PRINT TAB(4,7):"Copyright (c) David Griffin 1983"
210 FOR I=10 TO 23
220 VDU 31,0,1,145
230 NEXT
240 A$="i ahagahegahel ekele ekelenananenanaiaakajaiaha
gafafegageheleihal ahagafafeg"
250 FOR I=1 TO 76 STEP 2
260 Y=ASC(MID$(A$,I,1))-97
270 C=ASC(MID$(A$,I+1,1))-97
280 FOR X=18 TO 23-Y STEP -1
290 VDU 31,1/2+1,X,255
300 NEXT
310 VDU 31,1/2+1,23-Y,C+116
320 NEXT
330 FOR I=19 TO 23
340 VDU 31,1,1,157,131,31,39,1,156
350 NEXT
360 VDU 31,8,21:PRINT "Easy or Hard Game ?"
370 REPEAT AS=GET$
380 UNTIL AS="E" OR AS="H"
390 PRINT TAB(6,21):"Please wait approx. 1 minute"
400 IF AS="E" PROC terrain(1) ELSE PROC terrain(0)
410 PRINT TAB(6,21):GOC(30)
420 VDU 20,8,22,35,19
430 ENDPROC
440
450
460 DEFPROC machine_code
470 FOR PASS=0 TO 2 STEP 2
480 PX=LAB00
490 OPT PASS
500 .SCROLL
510 LDY E2
520 .NN
530 LDA $7C78,Y:STA $7C77,Y
540 LDA $7C60,Y:STA $7C5F,Y
550 LDA $7CC0,Y:STA $7CC7,Y
560 LDA $7CF0,Y:STA $7CF7,Y
570 LDA $7D10,Y:STA $7D07,Y
580 LDA $7D40,Y:STA $7D3F,Y
590 LDA $7D68,Y:STA $7D67,Y
600 LDA $7D90,Y:STA $7D8F,Y
610 LDA $7DB8,Y:STA $7DB7,Y
620 LDA $7DE0,Y:STA $7DDF,Y
630 LDA $7E08,Y:STA $7E07,Y
640 LDA $7E30,Y:STA $7E2F,Y
650 LDA $7E58,Y:STA $7E57,Y
660 LDA $7E80,Y:STA $7E7F,Y
670 LDA $7E98,Y:STA $7E97,Y
680 LDA $7ED0,Y:STA $7EDF,Y
690 LDA $7EF8,Y:STA $7EF7,Y
700 LDA $7F20,Y:STA $7F1F,Y
710 LDA $7F48,Y:STA $7F47,Y
720 LDA $7F70,Y:STA $7F6F,Y
730 INY:CPY $40:BEQ NH:JMP NH
740 .NH LDY E0:LDX E20:LDA $5F:STA $70:LDA $57:STA $
750 .NNI LDA E32:STA ($70),Y
760 CLC:LDA $70:ADC $40:STA $70:LDA E0:ADC $71:STA $71
770 DEI:BPL NHI
780 RTS
790 .PRI
800 LDY E0:LDX $D0
810 LDA $E6F:STA $70:LDA $57:STA $71
820 .NHZ CPY E0:BEQ NHZ:LDA $255:STA ($70),Y
830 CLC:LDA $70:SEC $39:STA $70:LDA $71:SEC E0:STA $71
840 DEI:JMP NHZ
850 .NHR LDA $79:STA ($70),Y
860 LDY E0:LDX $B2
870 LDA $89F:STA $70:LDA $57:STA $71
880 .NHZ CPY E0:BEQ NHR:LDA $255:STA ($70),Y
890 CLC:LDA $70:ADC $40:STA $70:LDA $71:ADC E0:STA $71
900 DEI:JMP NHZ
910 .NHZ LDA $7A:STA ($70),Y
920 RTS
930 .RUB
940 LDY E0
950 LDA E32:STA ($50),Y
960 INY:STA ($50),Y
970 INY:STA ($50),Y
980 INY:STA ($50),Y
990 LDY $40:STA ($50),Y
1000 INY:STA ($50),Y:INY:STA ($50),Y:INY:STA ($50),Y:IN
Y:STA ($50),Y
1010 LDY E80:STA ($50),Y
1020 INY:STA ($50),Y:INY:STA ($50),Y:INY:STA ($50),Y
1030 RTS
1040 .MNH
1050 LDY E0
1060 LDA $83C:STA ($D0),Y
1070 INY:LDA $860:STA ($50),Y
1080 INY:LDA $82C:STA ($50),Y
1090 INY:LDA $830:STA ($50),Y
1100 LDY $40
1110 LDA $878:STA ($50),Y
1120 INY:LDA $8FF:STA ($50),Y
1130 INY:STA ($50),Y
1140 INY:STA ($50),Y
1150 INY:LDA $844:STA ($50),Y
1160 LDY E80
1170 LDA $82D:STA ($50),Y
1180 INY:LDA $822:STA ($50),Y
1190 INY:LDA $82C:STA ($50),Y
1200 INY:LDA $821:STA ($50),Y
1210 RTS
1220 .CHECK
1230 LDY E0
1240 LDA ($50),Y:CHP E32:BNE HITT
1250 INY:LDA ($50),Y:CHP E32:BNE HITT
1260 INY:LDA ($50),Y:CHP E32:BNE HITT
1270 INY:LDA ($50),Y:CHP E32:BNE HITT
1280 LDY $40
1290 LDA ($50),Y:CHP E32:BNE HITT
1300 INY:LDA ($50),Y:CHP E32:BNE HITT
1310 INY:LDA ($50),Y:CHP E32:BNE HITT
1320 INY:LDA ($50),Y:CHP E32:BNE HITT
1330 INY:LDA ($50),Y:CHP E32:BNE HITT
1340 LDY E80
1350 LDA ($50),Y:CHP E32:BNE HITT
1360 INY:LDA ($50),Y:CHP E32:BNE HITT
1370 INY:LDA ($50),Y:CHP E32:BNE HITT
1380 INY:LDA ($50),Y:CHP E32:BNE HITT
1390 RTS
1400 .HITT LDA E1:STA $75:RTS
1410 .FIRE
1420 LDY E0
1430 LDA ($72),Y:CHP E32:BNE FIREEND

```

```

1440 INY:LDA ($72),Y:CHP E32:BNE FIREEND
1450 LDA ($72),Y:CHP E32:BNE FIREEND
1460 LDA $44:STA ($72),Y
1470 CLC:LDA $72:ADC E2:STA $72:LDA E0:ADC $73:STA $73
1480 RTS
1490 .FIREEND STA $54:LDA E0:STA $74:RTS
1500 .BOMB
1510 LDY E0
1520 CLC:LDA $76:ADC $41:STA $76:LDA E0:ADC $77:STA $77
1530 LDA ($76),Y:CHP E32:BNE BOMBEND
1540 LDA $45:STA ($76),Y:RTS
1550 .BOMBEND
1560 LDA E0:STA $78:RTS
1570 .ROCKET
1580 LDY E0
1590 LDA $96:STA ($55),Y
1600 INY:LDA E117:STA ($55),Y
1610 INY:LDA E32:STA ($55),Y
1620 LDY $40:LDA E106:STA ($55),Y
1630 INY:LDA E122:STA ($55),Y
1640 INY:LDA E32:STA ($55),Y
1650 LDY $80:LDA E104:STA ($55),Y
1660 INY:LDA E109:STA ($55),Y
1670 INY:LDA E32:STA ($55),Y
1680 RTS
1690 .RUBOUT
1700 CLC
1710 LDY E0:LDX $57
1720 .RUB1
1730 LDA E32
1740 STA ($58),Y
1750 INY:STA ($58),Y
1760 INY:STA ($58),Y
1770 TYA:ADC E30:TAY
1780 DEI:BPL RUB1
1790 .ITS
1800 .PROCKETS
1810 LDY E0:LDX E0
1820 .ROCKET1 LDA $90,Y:CHP E0:BEQ NROC
1830 CLC:LDA $92,X:SEC E0:STA $92,X
1840 LDA $93,X:SEC E0:STA $93,X
1850 LDY E0:LDA ($92,X),Y:CHP E32:BNE ROCKET2
1860 LDA E0:STA $90,X:JMP NROC
1870 .ROCKET2
1880 LDA $91,X:CHP E0:BEQ ROCKET3
1890 DEC $91,X:JMP NROC
1900 .ROCKETS LDA E2:STA $57:LDA $92,X:STA $58:LDA $93,
X:STA $59:STX $5A:JSR RUBOUT:LDX $5A
1910 CLC:LDA $92,X:SEC $39:STA $92,X:LDA $93,X:SEC E0:
STA $93,X
1920 LDY E0:LDA ($92,X),Y:CHP E32:BEQ ROCKET4:LDA E0:ST
A $90,X:JMP NROC
1930 .ROCKET4 LDY $255:LDA ($92,X),Y:CHP E32:BEQ ROCKET
5:LDA E0:STA $90,X:JMP NROC
1940 .ROCKETS LDA $92,X:STA $55:LDA $93,X:STA $5A:STX $
5A:JSR ROCKET:LDX $5A
1950 .NROC INX:INX:INX:INX:CPX E27:BPL ROCKET6:JMP ROCK
ET1
1960 .ROCKET6 RTS
1970 .BOUNDER
1980 LDY E0
1990 LDA E104:STA ($5B),Y
2000 INY:LDA E111:STA ($5B),Y
2010 INY:LDA E109:STA ($5B),Y
2020 LDY $40:LDA $5A:STA ($5B),Y
2030 INY:LDA $47:STA ($5B),Y
2040 INY:LDA E39:STA ($5B),Y
2050 RTS
2060 .NGUNCE
2070 LDY E0:LDX E0
2080 .NHZ LDA $84,X:CHP E0:BNE B00:JMP B0N
2090 .B00 CLC:LDA $83,X:SEC E0:STA $83,X:LDA $84,X:SEC
E0:STA $84,X
2100 LDA ($83,X),Y:CHP E32:BNE B01
2110 LDA E0:STA $84,X:JMP B0N
2120 .B01 LDA $83,X:STA $58:LDA $84,X:STA $59:LDA E1:ST
A $57:STX $5A:JSR RUBOUT:LDX $5A:LBY E0
2130 CLC:LDA $83,X:SEC E0:STA $5D:LDA $84,X:SEC E0:STA
$5E
2140 LDA ($5D),Y:CHP E128:BPI B02:CHP E255:BEQ B02:LDA
E0:STA $84,X:JMP B0N
2150 .B02 LDA $85,X:CHP E1:BNE B03:CLC:LDA $83,X:SEC E3
9:STA $85,X:LDA $84,X:SEC E0:STA $84,X:JMP B04
2160 .B03 CLC:LDA $83,X:ADC $40:STA $83,X:LDA $84,X:ADC
E0:STA $84,X
2170 .B04 CLC:LDA $83,X:SEC E78:STA $5D:LDA $84,X:SEC E
0:STA $5E:LDA ($5D),Y:CHP E32:BNE B05:CLC:LDA $83,X:ADC
E121:STA $5D:LDA $84,X:ADC E0:STA $5E:LDA ($5D),Y:CHP E3
2:BNE B06
2180 .B05 LDA $85,X:CHP E1:BEQ B0T:LDA E1:STA $85,X:JMP
B06
2190 .B0T LDA E0:STA $85,X
2200 .B06 LDA $83,X:STA $5B:LDA $84,X:STA $5C:JSR BOUNC
ER
2210 .B0N INX:INX:INX:CPX E9:BPL BEND:JMP NNB
2220 .BEND RTS
2230 RTS
2240 .JNEXT
2250 ENDPROC
2260
2270
2280 DEFPROC terrain(1)
2290 Y1=0:Y2=0:AXZ=0
2300 FOR X=8500 TO 8501E STEP 3
2310 Y2=Y1+1:Y1X+1=0:Y1X+2=0
2320 Y1=Y1X+1
2330 NEXT
2340 FOR X=8502 TO 855DF STEP 3
2350 AXZ=AXZ+1
2360 Y2=Y1X+1:Y1X+1=0:Y1X+2=0
2370 NNB=NNB(3)-2
2380 Y1X=Y1X+NNB
2390 IF Y1X<2 OR Y1X>12 Y1X=Y1X+NNB:GOTO 2370
2400 IF AXZ<3 OR Y1X<7(XX-3) OR Y1X<7(XX-6) GOTO 2440
2410 IF RND(7+85X*7)=1 Y1X+2=0:Y1X+1=0:GOTO 2440
2420 IF RND(4+85X*2)=1 GOTO 2440
2430 Y1X+2=0:Y1X+1=0:AXZ=0
2440 NEXT
2450 FOR X=855E2 TO 855DF STEP 3
2460 Y1=Y1X-1:IF Y1X<0 Y1X=0
2470 Y2=Y1X+1:Y1X+1=0:Y1X+2=0
2480 NEXT
2490 AXZ=0
2500 Y2=0:Y1X=0
2510 FOR X=85600 TO 858EB STEP 3
2520 AXZ=AXZ+1
2530 Y2=Y1X+1:Y1X+1=0:Y1X+2=0
2540 Y1=Y1X+RND(3)-2:Y2=Y1X+RND(3)-2
2550 IF Y1X<1 Y1X=1
2560 IF Y2X<0 Y2X=0
2570 IF Y1X+Y2X<9 GOTO 2600
2580 IF Y1X<0 Y1X=Y1X-1
2590 IF Y2X<0 Y2X=Y2X-1
2600 IF AXZ>12 AND RND(7+85X*7)=1 Y1X+2=4:AXZ=0
2610 NEXT
2620 FOR X=858E0 TO 858FD STEP 3
2630 Y1=Y1X-1:Y2=Y2X-1
2640 IF Y1X<0 Y1X=0
2650 IF Y2X<0 Y2X=0
2660 Y2=Y1X+1:Y1X+1=0:Y2X+1=0:Y1X+2=0
2670 NEXT
2680 AXZ=0
2690 FOR X=85C00 TO 861FD STEP 3
2700 AXZ=AXZ+1
2710 Y2=Y1X+1:Y1X+1=0:Y1X+2=0
2720 IF Y1X>5 Y1X=Y1X-1:GOTO 2760
2730 NNB=RND(3)-2
2740 Y1X=Y1X+NNB
2750 IF Y1X<1 OR Y1X>5 Y1X=Y1X+NNB:GOTO 2730
2760 IF AXZ<3 OR Y1X<7(XX-3) OR Y1X<7(XX-6) GOTO 2790
2770 IF RND(3+85X*2)=1 AND AXZ<4 Y1X+2=0:Y1X+1=0:AX

```

BBC

A MOUNTAINOUS wasteland in magenta: the surface is littered with mystery bases, fuel dumps, loaded and unloaded missiles. As you race under the radar, your ship must destroy targets to gain points. Keep a watchful eye on your fuel: bombing or shooting fuel dumps will increase your fuel supply. You have to make sure your fuel tank is full before attempting the next sector.

This is the scenario that greets you in the first screen of Scrambler. The screen changes colour from magenta to red, as you enter the cave. The path of your attacking ship is blocked by bouncing fizzers. These evil creatures just bounce up and down whilst emitting a curious sound to help send you insane. Either try to shoot them down, or try to avoid them with some nifty finger work. A full tank of fuel is almost used up in this phase.

After vast fuel consumption in the cave you will be anxious to replenish your supply in this green-coloured rocky terrain. Fuel dumps and mystery bases occupy the ground, whilst fireball comets occupy the air space. The comets are indestructible, so the only way to survive is to dodge them.

The screen turns blue as the deserted city approaches. This sector has all the hazards of the first one, with the enemy missiles in deep silos. The silhouette of the city at nightfall provides the background for all the action, the missiles coming fast and furious.

The fifth screen consists of large caverns joined by narrow passages being blocked by fuel dumps. Clever use of the boosters and retro rockets is the only way to survive this terrain.

A final colour change from yellow to cyan signals the start of the final sector, the Base. Flying over the futuristic skyline will bring you to the nerve centre of the enemy planet. A

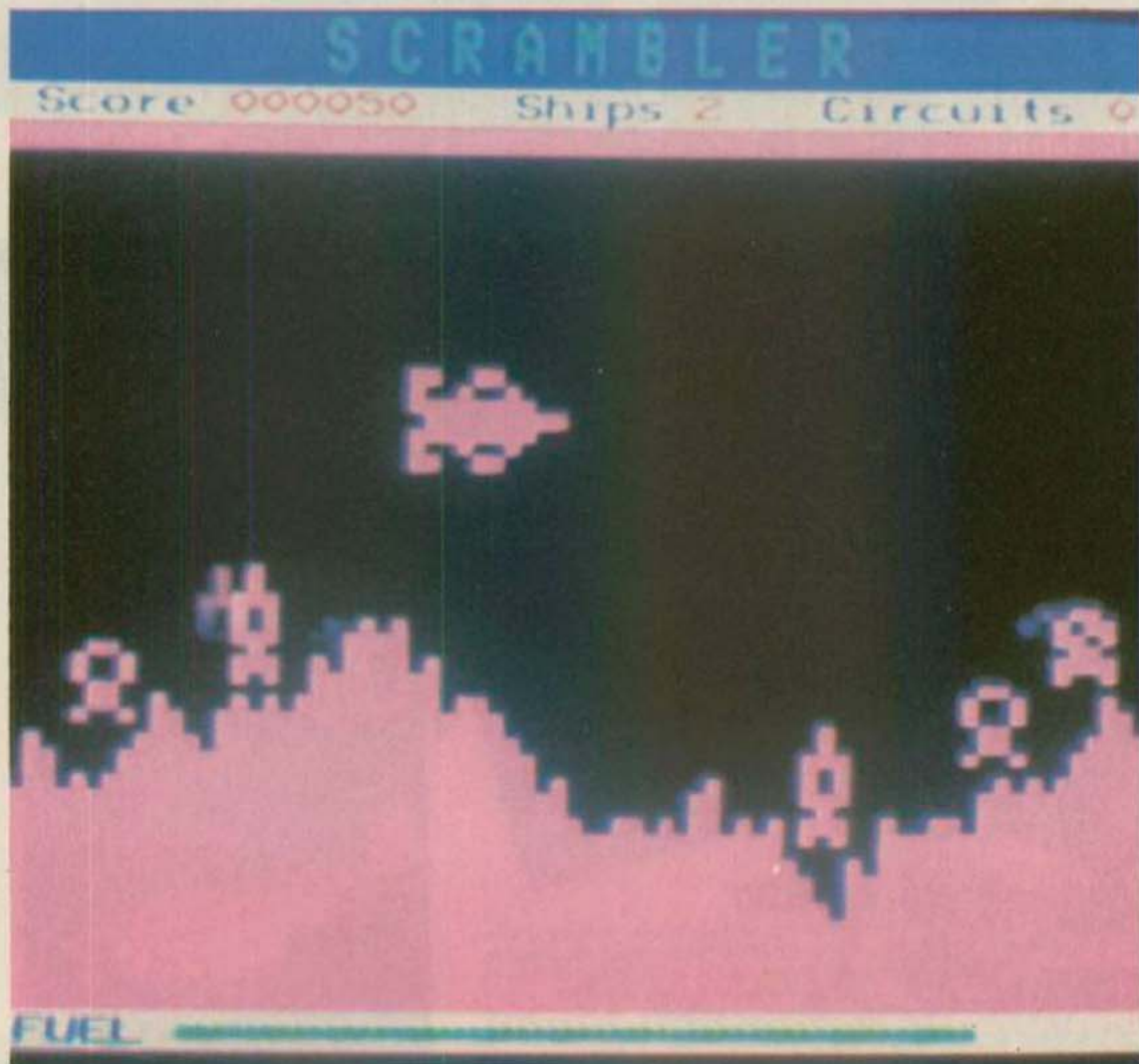
```

3=0:GOTO 2790
2780 IF RND(3)=1 Y1X+2=1+RND(2):AXZ=0
2790 NEXT
2800 Y1X=10:Y2X=1:AXZ=0
2810 FOR X=86200 TO 86790 STEP 3
2820 Y2X=Y1X+1:AXZ=AXZ+1
2830 Y2X=Y1X+1:Y1X+1=0:Y1X+2=0
2840 IF RND(7)=1 AND Y2X>3 Y1X=RND(10)+4:Y2X=0
2850 IF AXZ<3 OR Y1X<7(XX-3) OR Y1X<7(XX-6) GOTO 2890
2860 IF RND(7)=1 Y1X+2=0:Y1X+1=0:AXZ=0:Y2X=2:GOTO 2890
2870 IF Y2X<5 GOTO 2890
2880 IF RND(4+85X*5)=1 Y2X=Y1X-4:Y1X-4=0:Y1X-3=0:Y1
X:Y2X=0:Y1X+2=5:Y2X=1:AXZ=0
2890 NEXT
2900 AXZ=0
2910 FOR X=86740 TO 867FD STEP 3
2920 AXZ=AXZ+1
2930 Y2X=3:Y1X+1=0:Y1X+2=0
2940 IF AXZ>4 Y1X+2=5:AXZ=0
2950 NEXT
2960 Y1X=15:Y2X=1:Y1X+0:AXZ=0
2970 FOR X=86800 TO 868FD STEP 3
2980 Y2X=Y1X+1:AXZ=AXZ+1
2990 Y2X=Y1X+1:Y1X+1=0:Y1X+2=0
3000 IF Y1X<40 OR Y1X>4 AND RND(15)=1:Y1X+2=16
Y1X=0:Y2X=0:Y2X+1=0:AXZ=0
3010 IF Y1X=10+85X*20 AND RND(5)=1 AND Y1X+Y2X>16 Y1X=
RND(2)-1+14+RND(3)-1:Y2X=16-Y1X:Y2X=0:AXZ=0
3020 IF AXZ<2 AND RND(3)=1 AND Y1X+Y2X>16 AND X<869D0
Y1X+2=2:AXZ=0
3030 NEXT
3040 X=86E00
3050 Y1X=7:Y2X=7:Y1X+0:Y2X+0:Y1X+0:Y2X+0:Y1X+0:Y2X+0
bcc bdbbfbhbbhbnccodpqqpccobnbkhhbfbbdbccdbbaf
jbpqbbhbbdbccfb"
3060 FOR J=1 TO LEN(TITLE) STEP 2
3070 NOX=ASC(MID$(TITLE,J,1))-97
3080 Y1X=ASC(MID$(TITLE,J+1,1))-97
3090 IF NOX<99 END
3100 FOR I=1 TO NOX
3110 Y2X=Y1X+1:Y1X+1=0:Y1X+2=0
3120 X=X+3
3130 NEXT
3140 ENDPROC

```

SCRAMBLER

David Griffin's teletext Scrambler has the speed of machine code but is as easy to enter as Basic.



well-timed bomb on this headquarters will alter the military situation in favour of the human race.

When the sixth screen has been completed a bonus of 2,000 will be added to your score,

and you are returned to the start for an even faster game.

I have written this game in mode 7 — teletext — for several reasons, firstly it is easier to write routines for right to left

scrolling in this mode, there is more memory to work with than when using a high-resolution display and accessing the screen in machine code can be achieved with more speed and less difficulty than is the case with other modes.

The game is written using only one colour for each screen. To change the colour in teletext mode a control character is necessary. This would involve an extra gap before and after each part of the display requiring a different shade. This would mean added bulk to the already chunky display.

To get Scrambler into your machine you must do the following: type in listing 1, Save this using

SAVE "SCRAMBLER"

Type in listing 2, Save using
SAVE "SCRAMB"

To play the game Chain in the first program, and allow this one to Load and start the game itself.

Listing 1 is the initialising program. It contains all the necessary assembler, and it creates the data for the reproduction of the terrain. I have stored the information to draw the ground of the planet out of the way in memory so that the game can use the same planet each time the game is played. This also speeds up the game because the routines to print the relief do not have to mess around with random numbers and complex checking routines.

Listing 2 is the game and is loaded by the header program described above.

The listings are long and will take plenty of time and energy to type in. If you feel you do not have either the stamina or patience for such an epic, I will supply the game on cassette. Send £3 to XXXXXXXXXX

Listing 2. The game.

```

10 REM ... SCRAMB ...
20
30 REM Copyright (c) D.Griffin 1985
40
50
60 MODE 7
70 VDU 23,1,0,0,0,0,0,0,0
90 PROCINIT
95 ON ERROR GOTO 100
100 PROCINTR
110 PROCWAVE
120 PROCTABLE
130 GOTO 110
140 END
150
160
170 DEFPROCINIT
180 DIM HX(8),HX(B)
190 FOR I=1 TO 8
200 HX(I)=(9-I)*2000+RND(190)*10
210 READ HX(I)
220 NEXT
230 DATA +-+ the KING +-+,KILROY,RACH loves DAVE,JEDI-
  KNIGHT,we !!!,david griffin,Bruce 4 Sheila,Auntie BEED
240 SCROLL=64000
250 ROCKET=6461C
260 PR1=6489V
270 RUB=648FC
280 RJSLOT=64A4D
290 RSPB=649FD
300 RWH=6492V
310 RBRNEX=6480F
320 RBLNCR=64AEE
330 CHECK=6496A
340 PROCKETD=64A64
350 FIRE=649CE
360 ENVELOPE 1,1,130,95,50,126,126,126,126,0,0,-1,126,
100
370 ENVELOPE 2,1,0,0,0,0,0,126,-1,-1,-1,100,80
380 ENVELOPE 3,4,-4,-4,-4,126,126,126,126,-1,-2,-5,126,
100
390 ENVELOPE 4,2,-1,-1,1,15,15,30,126,0,0,0,80,60
400 ENMPROC
410
420 DEFPROCWAVE
430 CIRCUIX=0
440 LIVESX=3
450 RECTWEX=1
460 SCREX=0
470 XTWEX=1
480 CLS
490 PROCSCREEN
500 STX=-1
510 REPEAT
520 PROCSECTOR(SECTORE)
530 IF %75=0 SECTOREX=SECTOREL+1:STX=0:ELSE PROCBEAD:ST
  X=-1
540 IF SECTORE=7 PROCDOVE
550 UNTIL LIVESX=0
560 PROCROVER
570 ENMPROC
580
590 DEFPROCSECTOR(STX)
600 IF STX=1 PROCWAVE1
610 IF STX=2 PROCWAVE2
620 IF STX=3 PROCWAVE3
630 IF STX=4 PROCWAVE4
640 IF STX=5 PROCWAVE5
650 IF STX=6 PROCWAVE6
660 ENMPROC
670
680 DEFPROCWAVE1
690 PROCCLD(0,0)149)
700 IF STX PROCTB(47,116)
710 %76=47
720 NEX=65000
730 REPEAT
740 %79=(RND(2)-1)*4+116
750 PROCO(NNX)
760 NEX=7(NNX+2)
770 IF NEX=1 OR NEX=5 PROCROCKET(87*45-7(NNX)+46)
780 IF NEX=2 PROCFUELDUP(7(NNX))
790 IF NEX=3 PROCPHYSTERY(7(NNX))
800 IF NEX=4 PROCROCKET
810 NEX=NEX+5
820 UNTIL NEX=655FD OR %75=1
830 ENMPROC
840
850 DEFPROCWAVE2
860 RXND 1,4,150,1
870 PROCCOLUR(145)
880 IF STX PROCTB(139,116)
890 NEX=65600
900 REPEAT
910 %79=(RND(2)-1)*4+116
920 %76=(RND(2)-1)*4+39
930 PROCO(NNX)
940 IF 7(NNX+2)=4 PROCBOLNCR
950 NEX=NEX+3
960 UNTIL NEX=658FD OR %75=1
970 SOUND 1,0,1,1
980 ENMPROC
990
1000 DEFPROCWAVE3
1010 PROCCOLUR(146)
1020 IF STX PROCTB(47,116)
1030 %76=47
1040 NEX=65000
1050 REPEAT
1060 %79=(RND(2)-1)*4+116
1070 PROCO(NNX)
1080 NEX=7(NNX+2)
1090 IF NEX=2 PROCFUELDUP(7(NNX))
1100 IF NEX=3 PROCPHYSTERY(7(NNX))
1110 IF NEX=4 PROCPBALL(NEX)
1120 NEX=NEX+3
1130 UNTIL NEX=661FD OR %75=1
1140 ENMPROC
1150
1160 DEFPROCWAVE4
1170 PROCCOLUR(148)
1180 IF STX PROCTB(47,124)
1190 %79=124
1200 %76=47
1210 NEX=66200
1220 REPEAT
1230 PROCO(NNX)
1240 NEX=7(NNX+2)

```

(continued on page 93)

