

40p EVERY WEEK • No 80 • SEPT 29 1984

PERSONAL

Computer

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**PCN
EXPOSE**
The truth about
software piracy

SPECTRUM WAFADRIVES

**More power,
more storage,
more reliability**

DO IT...

Free programs for 64,
BBC, Spectrum, QL & Oric

SOLVE IT...

Hints, tips & routines
for Spectrum, Amstrad & QL

PLAY IT...

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Wherever it happens, if it affects you, we report it in the Monitor pages. Home news, events and analyses, with regular columns from where technology makes waves — the USA and Japan. Plus a regular look at the British micro scene in Home Front.

MSX opens second front

MSX hoisted its standard in Europe last week but machines for the UK are still a month or two away.

The British launch of the MSX-standard systems took place a safe distance away in the south of France. All the major companies involved in the MSX project were represented and a number of machines were on show.

Toshiba was the only company to have actually delivered any microcomputers to British dealers and these should be on sale in a few stores already.

Many other companies still can't promise delivery of their MSX machines until November, while others are holding back until spring next year as they won't be able to provide enough machines for the expected demand and don't wish to get dealers' backs up.

Spectravideo was noticeable by its absence at the launch. You may remember that Spectravideo launched what was

supposed to be a machine that met the MSX specification around February this year. Unfortunately the MSX spec was changed after the Spectravideo was designed; now the SVI 728 is due to be launched in October and this will be compatible with the new standard.

A spokesman for JVC summed up MSX by comparing it to the hi-fi trade. You can walk into a shop selling record players and cassette recorders and know that all of them will play the same records and cassettes.

Obviously companies such as JVC, Mitsubishi, Sanyo and Toshiba, who are already selling this type of product, see the advantage of manufacturing a compatible product.

The presence of a large number of magazines like *Woman's Own* and *Options* at the launch confirms that MSX is not aimed at the computer enthusiast but rather at the same market as hi-fi's, washing machines and video recorders.



Spectravideo's SVI 728 — in pole position.

Audiogenic sets software trend

Commodore specialist Audiogenic is backing a hunch that software will be given away free in the future.

It plans to launch a storage system for the Commodore 64 complete with free software, at about a third of the price of a Commodore disk drive.

'There will be bubble-gum software turning over quickly and cheaply and the more sophisticated stuff will be coming with the hardware,' Audiogenic's Martin Maynard predicted. His company has

already branched out into selling peripherals with the Koala graphics pad; now it is preparing a wafer-type storage system with software accompaniment.

'I think software's going to be even cheaper,' he said, illustrating the point with telesoftware on radio and the packages available through networks like Compunet and Micronet. 'It's been a long, hot summer and I think you'll find that a large number of companies will find that it's too hot and will move out.'

according to Enterprise's Michael Shirley the company's backers are not losing patience.

The machine (64K of RAM and due to go out with 48K of ROM) was originally launched last September, to be on sale by April of this year. The company at that time was called Elan. Later it became Flan, and then Enterprise, which kept every body entertained while its machine steadfastly refused to appear. Now it is due in January next year. The company's

backers must have the patience of Chris Tavaré, and so far its income has not troubled the accountants.

The problem lies in the graphics chip. Shirley said that the system would still hold its own when it appears, despite the delays — 'We're not going to be overtaken overnight,' he claimed, adding bravely: 'I don't think we've got a credibility problem because we've not hyped the market during the many months of delay.'



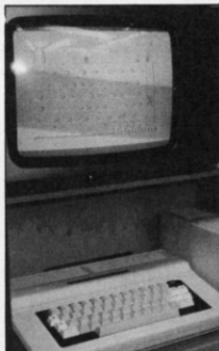
Down to business — ACT's portable.

Apart from the increased ROM the only change to the Enterprise 64's original spec (issue 29) is in its price — it will cost £249 if you ever get the chance to buy one.

Elsewhere the unexpected lurked around every corner: a large part of the Atari stand was given to the 'discontinued' 600XL; Tandy was showing Colour Computers with bright new keyboards; Crystal Software had changed its name to Design Design and had a pre-production version of Dark Star running smoothly.

The BBC's Chip Shop stand proved one of the most popular, with its events punctuating the days and with appearances from presenters and celebrities. ACT, displaying the Portable Apricot (wasn't the original supposed to be portable?), seemed to have come to the wrong place — its constant taped presentation would have been more at home at the Which Computer? Show.

But anything went at Olympia 2, and most of it probably did. Why Olympia 2? Why not



Tandy's shop-window — new keyboards for the Colour Computer.

Parnassus or Ida as a name for the hall? Perhaps because Olympia 2 makes it sound more like an old furniture emporium.

We'll round off our coverage of the seventh PCWShow next week with a report on the PCN prize winners.

HOME FRONT

BMX raiders on the horizon

By David Guest

Widespread drought, dwindling coal stocks, a fearful hammering from the West Indians, it wasn't much of a summer. And to add to the list of woes, sales of home micros have fallen sharply.

Bikes are to blame, according to a consumer research group called AGB Home Audit. While sales of BMX bikes have leapt by 76 per cent, home micro makers have had to come to terms with a 30 per cent drop in sales. AGB's explanation is startlingly obvious — in fine weather you prefer to be on your bike, in a manner of speaking.

But BMX bikes have more in common with micros than might at first appear. For example, the bike by itself is hardly enough; you have to buy the add-ons as well — the protective clothing, the crash helmets. Then there are the further capital investments that you need to make the most of your bike — a spot of concrete landscaping in the garden, an abrupt leap in the personal insurance premium.

Besides which, BMX bikes have certain disadvantages beyond the fact that you can't destroy mutant alpacas with them (unless you live in the high Andes, where jaywalking alpacas are a common hazard).

The risk of personal damage is greater. Apart from an early scare over Spectrum power supplies, who ever heard of anybody being admitted to the casualty department after a session on an arcade game?

The answer for hard-pressed micro makers is obviously to sell a BMX simulation game with their machines, and indeed this has started to happen. But the Japanese, never ones to miss a trick, have gone the whole hog. They have brought the BMX standard micro to Europe.

You'll have read about BMX machines. In association with Microsoft several Japanese manufacturers have built machines to a common standard, with Z80 processors and BMX Basic. The idea is that lots of people will buy them (perhaps 76 per cent more than last year) and lots of Japanese companies will make a killing.

With this in prospect, several software houses — the number runs to 40 at the last count — are busy producing BMX software. This will run on any BMX machines indiscriminately. As launched in Europe last week there are seven BMX micros soon to be available in the UK — the Seven Dwarfs.

Commodore users will agree that it is a wonderful thing, a standard that will let you run any piece of software on any one of seven micros. It might also justify a higher price on the

software — after all, if it will run on so many different systems it is so much more valuable.

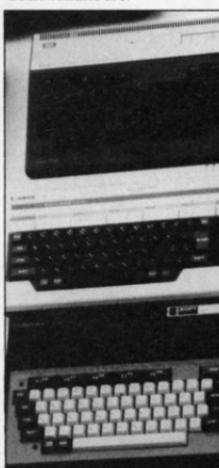
But standardisation helps the suppliers at least as much as it helps the users. The average user — take yourself, as a random example — will not own seven different micros. More often than not you'll have a relatively modest collection — say, one micro. Under these circumstances it will be a matter of complete indifference to you how many other machines your game can run on — unless, heaven forbid, you're selling copies of it to your friends with other BMX micros.

So the software suppliers have seven chances of making a sale where previously they might have thought themselves lucky to have two — the Oric 1 and the Atmos, for example.

With this in mind, look at the range of prices that software companies are quoting on BMX software. It runs from £1.99 (God bless Mastertronic) to £11.95.

Then look back at the early days of Amstrad software, where software companies had only one machine to aim at. Amsoft set a price of £8.95, well over the odds if you're used to prices on other popular machines. With Amstrad too there have been renegades who wouldn't toe the high-price line — Kuma is one.

So what difference will standardisation make to you? On the face of it, none. Eventually it may mean a wider choice, but as with any new micro that will depend on how well the new micros sell. When the BMX micros finally get into the shops you may begin to see software prices dropping. But until then, ask yourself exactly who the BMX bandits are.



After BMW, BMX — the standard to put some pep back into micros.



Tips from readers to make programming easier or open up new avenues of possibility. A new look to PCN's pages means a new look to the payments too. Now £10 for every hint in print, and a hefty £50 for the *Microwave of the Month*. Send your hot tips to *Microwaves*, PCN, Evelyn House, 62 Oxford Street, London W1A 2HG.

Dumping to memory for Amstrad fans

Here is a very short but useful routine which would be of interest for Amstrad CPC 464 owners.

When writing a program using one screen which was quite complicated, I came up with this routine which allows instant dumping of the screen to memory and virtually instantaneous retrieval at a later stage.

It takes only 24 bytes of machine code and a few lines of Basic.

It stems from the facility which allows you to save the screen on tape:

```
SAVE "filename." B, C000, &4000
```

The machine code routine is as follows:

```
DUMP: LD BC, &4000
LD HL, &C000
LD DE, &6B7A
LDIR
RET
RETREIVE: LD BC, &4000
LD HL, &6B7A
LD DE, &C000
LDIR
RET
```

The similarity between the cassette SAVE shown above and the machine code can be seen. BC is a counter set to the number of points on the screen, ie 16384 (&4000).

For the DUMP, HL is the first point of the screen (&C000) and DE is the starting location of the area where the screen will be stored (&6B7A) which is 16K below the top of the Basic memory.

The command LDIR loads the contents of the location pointed to by HL into the location pointed to by DE. This is automatically repeated 16384 (&4000) times.

The process is simply reversed for retrieval of the screen.

The Basic loader for the routine is as follows:

Line 10 reserves the top 16K of memory for the saved screen and the machine code routine so that they cannot be overwritten by a Basic program.

CALL &6B60 or CALL 27500 will now copy the screen to memory and CALL &6B6C or CALL 27500 will retrieve it.

Retrieval is instantaneous but as with the cassette command you should set all PEN and INK colours to the values they held when the screen was stored as this is not taken into account if they are changed. The example we used, the picture shifted to the left when it reappeared on the screen.

T J Allen
Brighton,
Sussex

```
10 MEMORY &6B5F
20 FOR N=&6B60 TO &6B7F
30 READ X
40 POKE N, X
50 NEXT N
60 DATA 1, 0, 64, 33, 0, 192, 17, 122, 107, 237, 176, 201
70 DATA 1, 0, 64, 33, 122, 107, 17, 0, 192, 237, 176, 201
```

The state of play with Orics

Some Oric-1 and Atmos owners may not realise the full potential of the PLAY command when its non-detection of %ILLEGAL QUANTITY ERROR's allows them to use parameters out of the valid ranges.

PLAY can be used to generate continuous and complex sound effects without the prior use of SOUND or MUSIC and without

unduly slowing down your program.

The following are some examples of the effects that can be produced:

```
Waves PLAY 40.40.60,4000
or PLAY 30.40.20,9000
Buzzer PLAY 48.90.100,60
Train PLAY 200.100.100,200
Plane PLAY 200.100.100,20
Alert PLAY 17.80.100,200
Rotor PLAY 58.80.100,60
Jet PLAY 12.91.555,3
K Heptinstall,  
Blackpool, Lancs
```

Printing letters on the Oric screen

This routine, which works on both Oric computers, prints a string of letters on the high resolution screen. The letters can vary from being twice the size to six times the normal size, in any combination of horizontal or vertical dimensions.

The first subroutine (9000-

9020) quite simply redefines the character "@" — CHS(96), to the size of the pixel required for the size of lettering. SX is the horizontal size of the pixel (2-6), SY the vertical size (1-8), X the horizontal position of the cursor (0-239), Y the vertical position of the cursor (0-199) and W\$ the word to be printed.

J Wooster,
High Wycombe, Bucks.

```
10 DATA 6, 1, 20, 90, FLAT, 2, 8, 20, 20, TALL, 2, 2, 100, 60,
SMALL, 2, 1
12 DATA 20, 110, SMALLER, 6, 8, 20, 128, BIG, 3, 3, 100, 20,
MEDIUM
14 HIRSES: REPEAT: READS X, SY, X, Y, W$: GOSUB 9000: GOSUB
9030
16 UNTIL W$="MEDIUM": END
17:
18:
19:
9000 Z=&4-2*(6-SX): Z(1)=32: Z(2)=16: Z(3)=8: Z(4)=4:
Z(5)=2: Z(6)=1
9010 B=0: WDT=&65X: ST=B+SY: FOR A=39680 TO 39687:
B=B+1: IF B%SY THEN Z=0
9020 POKE A, Z: NEXT A: RETURN
9030 POKE 775, 255: FOR LOOP=1 TO LEN(W$):
B=ASC(MID$(W$, LOOP, 1)): IF B=32 THEN 9070
9040 S=&39912+(B*B): CURSET X, Y, 0: FOR A1=0 TO 7:
A=PEEK(S+A1): FOR A2=1 TO 6
9050 IF Z(A2) AND A THEN CHAR 96, 0, 1
9060 CURMOVX, 0, 0: NEXT A2: Y=Y+SY: CURSET X, Y, 0: NEXT
A1: Y=Y-ST
9070 X=X+WDT: A=FRE(""): NEXT LOOP: POKE 775, 39: RETURN
```

Sound advice on the Amstrad

Here are a few tips I've come across for the Amstrad CPC 464.

○ The play button is disabled when you are neither loading or saving a program from cassette. The command OUT 512.16 will enable the cassette unit and OUT 512.0 will disable it again.

These commands could be useful if you wished to have a sound track accompanying your program.

○ Horizontal scrolling can be

achieved with OUT 256.1 where 1 is the character position relative to the left of the screen. The text is not lost since it wraps round to the right hand side of the screen. In mode 1, shifts occur by one whole character position while in mode 2 shifts are by 2 characters; mode 0 produces a shift of half a character. As it is a hardware scroll, it is very fast.

○ Try this command for sound effect:

```
10 ENT -1.5,5,1,0,-1.5,1,1,1
20 SOUND 1,500,10000,7,0,1
```

T Harkness,
Voorschoten, Holland

Atmos editing can zz along

If you find editing on your Atmos with the control A key infuriatingly slow here is a way of speeding the process.

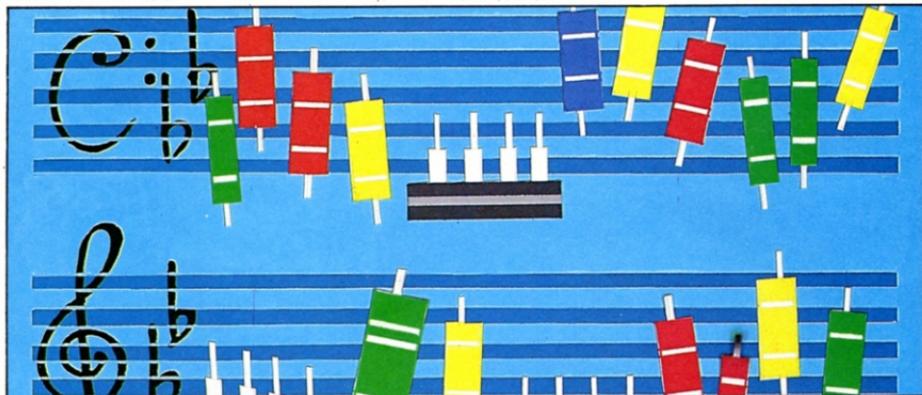
The number stored in location %24E gives a delay between the initial single response to the keypress and the auto-repeat on that key, while the number stored on location %24F gives the repeat rate once the key starts autorepeating.

Multiplying these numbers by 30 will give you the time in milliseconds. Therefore, reducing both these figures by equivalent POKES you will be able to make the keyboard work at a speed that suits you.

I have found setting the first location to 8 and the second to 1 very useful for editing applications.

You can obtain these settings by typing DOKE %24E# 0108.
A J Newham,
Northam, Southampton

BACH IN 1984



A Bach chorus is played by your humble Atmos when you tap in Alan Wilkins' program.

If Bach had composed on a computer, what sort of music would have been the result?

Well, there's no need to speculate widely about that, because his approach was to impose his own style on an instrument — ask any musician.

Bach was not at all averse to re-arranging music for different instruments, and this arrangement of one of his cantata movements for the Oric Atmos follows precisely the same lines as his own arrangements of similar movements for the organ.

Although the requirements for the original work were an orchestra of

strings with oboe, keyboard and four-part choir, the essential elements lie in only three parts, and these can be played on a micro.

In the program I have described the three parts as soprano, alto and bass. In the original, the soprano was played by violins and oboe, my alto was the choir soprano part, and the bass was the original bass part (as played by the orchestral bass instruments). As far as the notes themselves are concerned, I have followed the original precisely and altered nothing.

The little speaker on the Atmos does a good job of reproduction. But it has to be said that it can't really cope with the range of effects which the electronics can generate.

The first and easiest thing to do about this is to support the machine above bench level — a couple of books does the trick — so the speaker has room to breathe. This makes for a surprising improvement (mine sits permanently on a small frame).

For a decent sound, though, you must play anything elaborate through a hi-fi. All you need is a cable with a 5-pin DIN plug on each end. Connect the tape socket on the Atmos to the tape socket on your hi-fi.

Until you do this you won't know the real meaning of octave 1 in the MUSIC command and you won't hear a true bass. This lovely piece of Bach's needs and deserves the best treatment you can give it. ▀

```

B-
10 REM--PROGRAM TITLE - "HUMBLE"
16 'Full title:-
20 "'HUMBLE US BY THY GOODNESS"
30 'Chorus by J.S.Bach
40 'Arranged from the full score &
50 'programmed for ORIC ATMOS by
60 'Alan Wilkins.
70 'August, 1984.
76 '
80 GOSUB 6000'Display
90 '
100 REM-VARIABLES
110 'S--Soprano data number
111 'SO-Soprano octave
112 'SN-Soprano note
114 'SL-Length of soprano note
115 'A--Alto data number
116 'AO-Alto octave
117 'AN-Alto note
118 'B--Bass data number
119 'BO-Bass octave
120 'BN-Bass note
121 'WA-Wait (used for note lengths)
122 'CH-Channel selection
    
```

```

123 'C,D-Counters
124 'FF-Flag for final chord
126 'FL-Flag for longer soprano note
128 'FR-Flag for repeated alto note
130 'FS-Flag for shake in soprano part.
140 '
180 '
190 REM--PROGRAM
194 '
200 WA=16
210 FF=FALSE
220 '
240 REPEAT
280 '
300 '-----Set up bass and alto
320 '
330 CH=5'Alto part switched off.
340 FOR C=1 TO 2
360 FL=FALSE:FR=FALSE:FS=FALSE
380 READ B,A
400 IF A>300 THEN A=A-300:FS=TRUE
410 IF A>199 THEN A=A-200:FL=TRUE
420 IF A>100 THEN A=A-100:FR=TRUE
    
```

```

440 IF A>1 THEN CH=7'Alto part switched
on.
460 BO=INT(B/12):BN=B-BO*12+1
480 AO=INT(A/12):AN=A-AO*12+1
490 IF FL=TRUE THEN 600
494 IF FS=TRUE THEN GOSUB 1200:GOTO 940
500 '
520 '-----Set up soprano
540 '
560 FOR D=1 TO 2
580 SL=2000
600 READ S
610 IF S>300 THEN S=S-300:FF=TRUE
620 IF S>200 THEN S=S-200:WA=WA+3'Final
bar
640 IF S>100 THEN S=S-100:SL=1200'Phras
e ending
650 '
660 SO=INT(S/12):SN=S-SO*12+1
680 '
700 '-----Play
704 '
740 MUSIC 1,BO,BN,12
760 MUSIC 2,AO,AN,12
780 MUSIC 3,SO,SN,0
800 PLAY CH,0,1,SL
820 IF FR=TRUE AND D=2 THEN GOSUB 1600
830 IF FL=TRUE THEN WAIT WA+0:GOTO 940

840 WAIT WA-DX7
920 NEXT D
940 NEXT C
960 UNTIL FF=TRUE
1010 WAITWA/2
1020 PLAY 0,0,0,0
1040 WAIT 10
1060 MUSIC 1,0,11,12
1080 MUSIC 3,4,11,12
1100 PLAY 5,0,0,0
1120 WAIT 300:PLAY 0,0,0,0
1140 '
1160 END
1170 '
1190 REM--SBR--Shake in soprano part.
1194 '
1200 MUSIC 1,BO,BN,12
1210 MUSIC 3,5,3,0
1220 PLAY CH,0,1,1200
1230 WAIT WA/2
1240 MUSIC 3,5,4,0
1260 PLAY CH,0,1,1200
1270 WAIT WA/3
1280 MUSIC 3,5,3,0
1300 PLAY CH,0,1,1200
1330 WAIT WA/3
1340 MUSIC 3,5,4,0
1360 PLAY CH,0,1,1200
1370 WAIT WA/3
1380 MUSIC 3,5,3,0
1400 PLAY CH,0,1,1200
1410 WAIT WA/2
1420 RETURN
1500 '
1590 REM--SBR--Repeated alto note
1594 '
1600 PLAY 5,0,0,1000
1640 RETURN
1650 '
2000 '-----Bar 1
2020 '
2040 DATA 10,0,62,60,22,0,62,63,21,0,65
,63,17,0,62,160
2060 DATA 7,0,58,57,19,0,58,60,17,0,62,
63,14,0,65,162

```

```

2080 '
2100 '-----Bar 2
2120 '
2140 DATA 15,0,67,65,14,0,67,68,15,0,67
,65,12,0,63,62
2160 DATA 17,0,160,70,19,0,69,67,21,0,6
5,63,17,0,62,160
2180 '
2200 '-----Bar 3
2220 '
2240 DATA 10,0,62,60,22,0,62,63,21,0,65
,62,17,0,63,165
2260 DATA 7,0,58,57,19,0,58,60,17,0,62,
58,14,0,60,162
2280 '
2300 '-----Bar 4
2320 '
2340 DATA 15,0,55,57,12,0,58,63,17,200,
62,5,0,60,58
2360 DATA 10,0,158,70,17,0,69,67,22,46,
65,63,21,146,62,160
2380 '
2400 '-----Bar 5
2420 '
2440 DATA 19,46,58,57,21,48,58,60,22,50
,62,60,19,50,58,157
2460 DATA 16,48,55,54,18,48,55,57,19,46
,58,60,15,46,62,158
2480 '
2500 '-----Bar 6
2520 '
2540 DATA 12,45,63,62,9,45,60,58,14,45,
57,58,2,45,60,157
2560 DATA 7,43,58,57,19,43,58,60,17,0,6
2,60,14,0,58,157
2580 '
2600 '-----Bar 7
2620 '
2640 DATA 3,0,55,54,15,0,55,57,14,0,58,
60,10,0,62,158
2660 DATA 12,0,63,62,24,0,63,65,23,0,67
,65,19,0,63,162
2680 '
2700 '-----Bar 8
2720 '
2740 DATA 8,0,60,59,20,0,60,62,19,0,63,
65,15,0,67,60
2760 DATA 17,0,168,62,14,0,63,65,19,50,
59,62,7,50,67,165
2780 '
2800 '-----Bar 9
2820 '
2840 DATA 12,51,63,62,24,51,60,62,21,48
,63,67,17,48,65,63
2860 DATA 22,50,162,58,19,50,57,58,15,4
8,60,62,17,48,63,165
2880 '
2900 '-----Bar 10
2920 '
2940 DATA 10,46,62,60,22,46,62,63,21,46
,65,63,17,0,62,160
2960 DATA 7,0,58,57,19,0,58,60,17,0,62,
63,14,0,65,62
2980 '
3000 '-----Bar 11
3020 '
3040 DATA 15,0,67,65,14,0,67,68,15,0,67
,65,12,0,63,62
3060 DATA 17,0,160,70,19,0,69,67,21,0,6
5,63,17,0,62,160
3080 '
3100 '-----Bar 12
3120 '
3140 DATA 10,0,62,60,22,0,62,63,21,0,65
,62,17,0,63,165

```