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# Computing

with Home Computing Weekly

WEEKLY

19-25 December 1985

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Vol 4 No 51

## THIS WEEK

# Clive's wafer project cash on the cards



**MCODER III**

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the ultimate BASIC compiler

### MCoder III special offer



Commodore's Sound Expander Module reviewed

SIR CLIVE Sinclair has claimed he is close to clinching a deal with a venture capital company for over £5m to help set up Sinclair's wafer scale integration company.

The £5m falls far short of the £50m Sinclair was seeking last summer, just before its

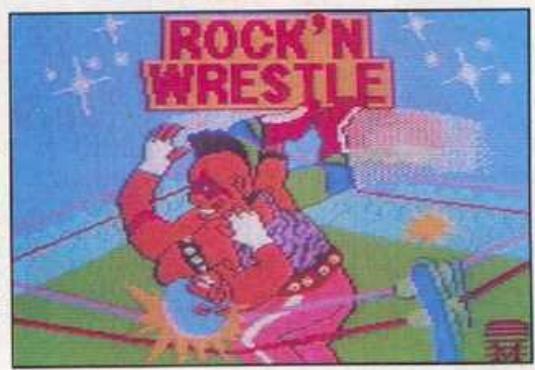
well-publicised financial crisis. It has now had to plan to sub-contract out initial manufacturing of the silicon wafers. Production 'in-house' will not begin for another three years, when a substantial sum, probably about £40m would need to be raised.

Sir Clive has also publicly announced that he hopes the wafer scale chips to be in production and used in Sinclair's portable computer project by 1987.

A Sinclair spokesman said, "I cannot confirm whether or not this deal will be going ahead; it is still in negotiation. Nor would it be fair to name the venture capital company."

Sinclair Research is also still looking for around £10m  
continued on page 4 ▶

MELBOURNE House's Rock & Wrestle, now due out on the C64, January 7, at £9.95. A Spectrum (£8.95) and Amstrad version (£9.95) are due out at the end of January.



## MICRO MAGIC

Find out if you have won an Amstrad 6128 this week or at least some special Popular Computing Weekly cassette labels.

Enter your Micro Magic number into our computer program on page 33.



## INSIDE

### Readers' Poll

Vote for the best and worst of 1985

# N.O.M.A.D



**ocean**

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## EDITORIAL

**P**eople talk of this Christmas being 'crucial' to the home computer industry, just as those same people talked of last year being 'crucial.'

When it comes to micros, it seems everything either has to be astoundingly successful or appallingly terrible - doom-laden adjectives abound. Obviously, whilst poor sales at Christmas of micros and software will be a pretty bad thing, the overall effect this might have on the industry is not, in fact, the do or die affair it is being painted.

Last Christmas is not a useful point of comparison for this one. Then the absurd overstocking of computers, which led more or less directly to the troubles of Acorn, Sinclair and, to a lesser extent, Commodore UK, should not be repeated.

The most significant point of difference is that the character of the industry has changed - largely for the better, and some hard lessons appear to have been learnt. Not only are the companies that have survived the harsh times intrinsically stronger and better run (if also larger and less charmingly idiosyncratic) but last year's lessons have led to more conservative estimates of sales and cash flow.

Cautious realism pervades the industry as never before. Alan Sugar's Amstrad may have taught the industry a good few lessons on how to do it, and stock levels and expectations are cooler.

With only a modicum of luck there shouldn't be too many unpleasant surprises this Christmas; in fact there is some early evidence to show that there may even be a few pleasant surprises.

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## ADVERTISEMENT

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PCW18

# Atari admits to delay on 260ST

ATARI has now admitted that its 260ST machine will not now appear until next year. The company had earlier hoped it might appear before the end of 1988.

Rob Harding, sales and marketing manager of Atari UK, said the long-awaited machine should arrive "early in the New Year".

The equally long-awaited

hard disc for the ST series will be launched around the same time. Reasons for the delay are unknown - Atari had several working hard discs on its Comdex stand in Las Vegas in November. The price has also still to be decided - Harding says it will be "competitively priced" which means that it should appear for less than £1,200.

The other major peripheral still on the waiting list is the CD-Rom laser-driven disc system. A prototype was shown as far back as June at CES in Chicago when Atari said it hoped to launch the product by the end of 1988.

Harding now says there are no immediate plans to release the product as the company believes the technology is too expensive.

However, there is brighter news on software. Atari announced more than 100 packages at Comdex and Harding says they are becoming available now.

## CPC 6128 arrival in States held up

THE US launch of Amstrad's CPC 6128 computer has suffered heavy delays, and is not yet on sale.

The machine was jointly previewed by Amstrad and Indescomp at last summer's CES in Chicago. At the time, it was due to go on sale around September in the US.

"There have been heavy delays on it because of FCC tests," said Loren Willey, Indescomp US's marketing director. "Not only the computers but the peripherals

## Happy families for Amstrad owners

DAVID Computer Software (DCS) has announced a genealogy package for all Amstrad machines - both the CPC range and the 8256.

The family tree database program can store ancestral details under name, sex, date of birth, place of birth, baptism, death or burial, can file under marriages, children,

occupations and so on. It will also cope with most usual database features with search, printer dump, incomplete data matches etc.

The program, called *Genny*, costs £35 on disc only, so 464 owners need to have a drive. Details from DCS at 38 South Parade, Bramhall, Stockport (061-439 4841).

## Lucasfilms latest

THE LATEST game designed by Lucasfilms, *Koronis Rift*, is due out in Britain from Activision at the beginning of January.

The game, graphically similar to its stablemate *Rescue on Fractalus*, casts the player as 'techno-savenger', making a living by searching for abandoned technological systems scattered around deserted parts of the galaxy.

It will be available for the Atari XE/XL series on disc only at £14.99 and the on cassette at £9.99 and disc at £14.99.



that come with it had to be separately tested, and then the full kit when put together had to be ratified.

"However, it has now passed all the tests and is ready for shipment." Indescomp expects the 6128 to be available in the US in volume by March.

It is being targeted as a cheap business machine in the States, and is being bundled with *Wordstar*, *Mail Merge* and *Multiplan* at \$699 for the colour monitor version, and \$499 for the monochrome model without the software.

## Printer dump for Apple II

APPLE Dumpings is a new software program from D-Soft, which enables owners of Apple II and III series machines to print graphic screen dumps on any type of printer, including daisywheels.

Hi-res graphics, partial or complete text screens or side



Graphics with Dumpings ways print can all be successfully dumped. The package costs £19.95 from D-Soft at 60 Chancellors Road, London W6 9RS (01-748 9202).

## Sinclair's wafers

← continued from page 1

in external finance for working capital and to help pay for new products, such as the 'Pandora' portable and successors to the QL and Spectrum. Sir Clive hopes that would-be investors will be organisations and wealthy individuals.

However, it looks as though Robb Wilmot, who joined forces with Sir Clive to raise finance for the semiconductor scheme earlier this year, has now been ruled out, despite the fact he has recently resigned his post as chairman of ICL to concentrate on his own enterprises.

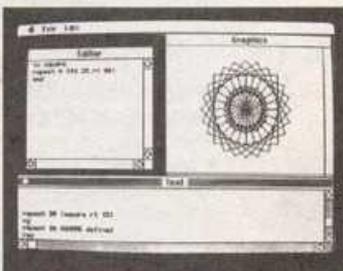
## Microsoft Logo to enter schools market

MICROSOFT, the company more widely known for its own version of Basic and professional packages, has, somewhat surprisingly, launched a package designed for the schools market.

The package in question is Logo, which runs only on Apple's Macintosh micro.

However, the Macintosh is nowhere near as commonly used in schools and colleges as Acorn or Research Machines' micros, for instance. A Microsoft spokesman said: "There are around 200 educational establishments

equipped with Macs at the moment." And Apple added:



Microsoft Logo

"Over the past year the Mac has been doing incredibly well in schools, colleges and polytechnics."

However, Microsoft admits that the market is still a small one and it is looking for side benefits to compensate for initial sales levels. Among these are the added impetus to Apple's Mac, and the hope that Microsoft-loving students will turn into Microsoft-loving business users.

MS Logo is a full implementation of the language offering data-handling as well as the familiar turtle graphics. It was written for Microsoft by Logo Computer Systems Inc and employs the full power of the Mac's graphics, windows and variety of typefaces.

## Firebird lines up twenty firms for US invasion

ULTIMATE'S titles *Sabre Wulf* and *Underwulde* have already been lined up by Firebird for export to the US under the Firebird Licensees label (see *Popular Computing*

*Weekly*, November 14). The British Telecom division already has Commodore 64 rights to these two titles in Britain.

Firebird's John Fletcher, who is co-ordinating the move into the States from the UK, said, "We are also talking to CDS, Virgin, Melbourne House, Novagen, Odin, Shards, PSS and Softechnics (the division of Softek concentrating on 68000-based machines) with a view to marketing their titles in the US. We are holding discussions with about 20 companies in all."

Firebird Licensees has taken a stand at January's CES show in Las Vegas, where it will display both its own programs and also those from third parties, for sale in the US from early next year.

## Metacomco win award

METACOMCO, the Bristol company which wrote the Amiga's operating system, AmigaDos, and a number of languages for the QL, has won an export award. The company was nominated Supreme Champion in the 1985 South West Export Awards, which are sponsored by the Institute of Export, the British Overseas Trade Board, the Bristol Chamber of Commerce, Midland Bank and HTV.

## MSX price cut again

TOSHIBA has reduced the price of its HX-10 MSX computer again, this time down to £89.99 (see *Popular Computing Weekly*, September 26).

The new £90 HX-10 Entertainment Package is the same as the previous £99 starter pack, but substitutes the data recorder for a joystick.

The two packages will both be available through into the New Year, while Toshiba's



enhanced MSX micro, the HX-22 is still only available in limited quantities.

## Soviet style networks

IN AN unusually open article, the Soviet newspaper *Pravda* has described the problems within the Soviet Union of linking personal computers to central terminals.

*Pravda* says that 30 cities in the Russian republics, the largest of the Union's 15 republics, now have organisations linked to databases.

Paradoxically, the report continues, authorities have catered only for large-scale systems with central networks, but have 'forgotten' to make available devices for small subscribers.

The Soviet leader Mikhail Gorbachev has called for a major program to bring the country's communication systems more up to date.

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\*Commodore 1311 Joystick £4.00!



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| CASTLE ASSAULT.....             | 2.50  | 2.25      | BRIAN BLOODAXE.....         | 8.95  | 5.95      |
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# Letters

## Pen-pal Service

**I** run a pen pal service for Spectrum users and would like anyone who wants a pen pal to write.

They should tell me a few details about themselves and the sort of person they want to write to, and send them to me with an SAE. I'll get in touch as soon as I can. Also, if there are any females out there - please write, as half the replies are asking for you.

Even if you don't own a Spectrum, write anyway and I'll see what I can do.

*Anna Peters  
20A Esmond Rd  
London W4 1JQ*

## An enigma

**I**n *Popular*, 5-11 December, John Minson's review of *Swords and Sorcery* fails to give credit where credit's due. Since 1982, adventure game commentators have expressed the opinion that a full role playing game would be impossible within the constraints of a home micro, until the arrival of cheap(ish) disc drives and/or expanded memories.

It is ironic that PSS has achieved the impossible just as this hardware is becoming a reality. Surely PSS can be forgiven for having "taken a little longer".

## MICRO MAGIC

Congratulations to Ian Brunage of Luton, C M l'Anson of Liverpool and Ron Ebbrell (pictured below) of The Wirral, who have all won Amstrad CPC 6128s in our Micro Magic competition so far.

This does mean, however, that there are still nine 6128s to win, and that nine people out there somewhere have Amstrad winning numbers, so keep typing each week's listing in.

All prizes, including cassette labels and extra cards with documentation, will be despatched shortly.



The limitations of the game are those imposed by the memory available and more sophisticated games can only be achieved from disc or on the 128K machines. These will, of course, come close to John Minson's expectations but will be denied to those of us who cannot spend £400.

The enigma of the game is that nothing is fully explained and you have to find out for yourself what you are supposed to do. This is why your reviewer 'was unsure what was going on'. He was meant to be!

The conversation routines are fascinating but you cannot just barge into a room and expect to engage the inhabitant in polite chatter.

John Minson makes no mention of the magic which plays such an important role in the game nor of the risks involving the meagre supply of food, which, in true 'table-top' role playing games, will thwart your bravest efforts if you do not plan your strategy very carefully.

I cannot see how he fails to 'empathise' with a character to which he has given an identity by naming it and then training it.

*Swords and Sorcery* combines strategy, combat, and puzzle-adventure and forms the basis of a further three levels of 'environments'; as such it represents better value for money than anything else in 1985.

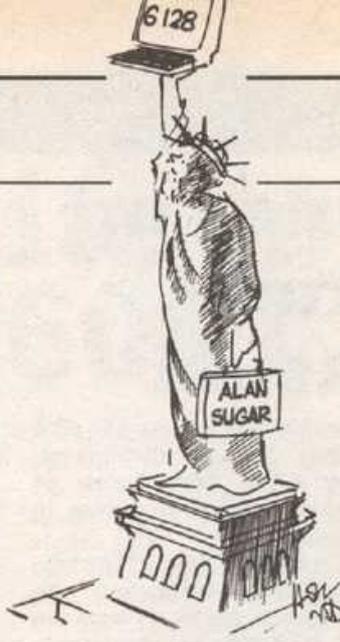
However, it does rely on the player supplying one thing which John Minson has clearly failed to do - imagination.

*Hugh T Walker  
7 Burnet Avenue  
Burpham*

**John Minson replies:** While I recognise PSS's persistence in chasing the micro role-playing dream, *Swords and Sorcery* just didn't work for me.

My comment on not being sure of what was going on was a criticism of the confusing display and yes, I would expect to have to draw a map, as I always did when I was an r.p.g. player.

It was not my lack of imagination that led to the review, but *Swords and Sorcery's* failure to stimulate it.



```
GOTO 20 40 FOR F=1 TO
LEN B$: FOR G=1 TO LEN A$
50 F B$ (F) = C$ (G) THEN
LET C$ (G) = " ": LET A = 1:
GO TO 80 70 NECT G: IF A = 0
AND B$(F) <> " " THEN
PRINT AT 8,0; "LETTER";
B$(F); "Not Found": BEEP 2,4:
PRINT AT 8,0; "(18 spaces)":
GOTO 15 85 LET A = 0: NEXT
F 95 LEY A$ = C$ 100 LET
W$ = W$ + B$ PRUNT AT 4,0;
"Your phrase"; AT 5,0; W$:
LET A = 0: GOTO 20.
```

*Robert Burgess  
Rotherham*

## In agreement

**I** have never found myself agreeing 100% with a magazine before - not, that is, until I read John Minson's review of *Swords and Sorcery* in the 5-11 December issue.

I find it hard to believe that PSS can claim that its program has 'stunning 3D graphic animation simulating video disc games'. The graphics are 1983 standard and have about as much atmosphere as the moon. I'm sure that the majority of people buying this program will have played role playing games and will realise it is impossible to capture this kind of experience in a computer game.

*Richard Hewison  
Luton*

## Phrase composer

**W**hile attempting to compose a phrase for your Readers' Chart competition I got fed up at having to write:

**'ELITE HYPER SPORTS  
WAY OF THE EXPLODING FIST'**

every time so I wrote this small program for the Spectrum to do the job for me.

It inputs the game titles phrase and then asks for a word. Then it scans through the phrase deleting letters in the word and printing both up. Should a letter in a word not be contained in the titles phrase, the phrase is restored to the way it was before that word.

```
5 POKE 23658,8=LET A = 0
= LET W$ = " "
10 INPUT "Input the top three
titles-"; A$
11 LET C$ = A$
30 INPUT "Word to remove
from phrase-"; B$ 35 IF B$ =
"QUIT" THEN LET A$ = Z$ =
LET W$ = " " = CLS =
```

## Roller price

**A** few weeks ago you carried a review of the IBICO LTR-1 printer in which you state the price of the ink roller for the LTR-1 is £2.50. I phoned Saga Systems in Woking this morning to find out that they charge £4.95.

I have had one of these superb little printers for a while and I always buy my ink rollers from IBICO direct. They charge £3.00 + VAT which is a lot less than Saga.

*David Cummings  
London W1*

## Reliable QL

**I** have had my QL for 18 months. It is being used at least three hours a week keeping records and accounts for my farm. Never have I needed to use the backups which I always make. The Microdrives are reliable.

*Callum Burnett  
Aberdeenshire*

## Amstrad Club

**W**e are a newly formed club in Manchester dealing mainly with Amstrad computers, called the Amstrad North West Users Club. We meet at the Eileen Wilkinson School on Hyde Road, Manchester, Wednesday evenings, 7.00-9.00pm. Any interested readers should contact me.

*P Clarke  
Secretary, ANWUC  
41 Millwall Close  
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Manchester*

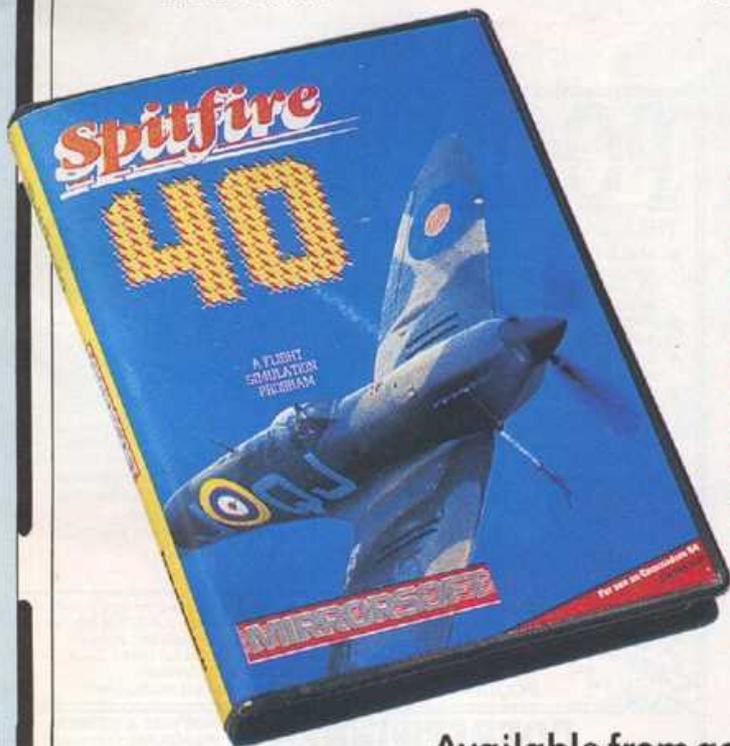
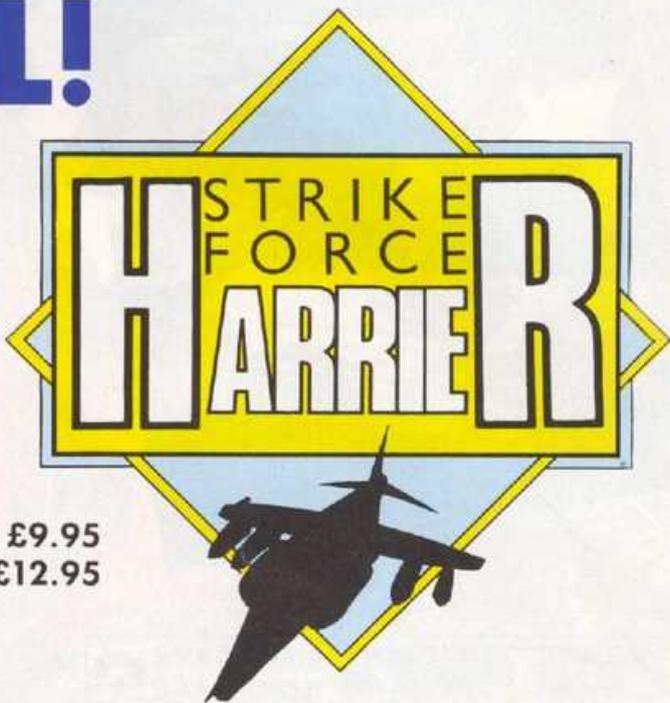
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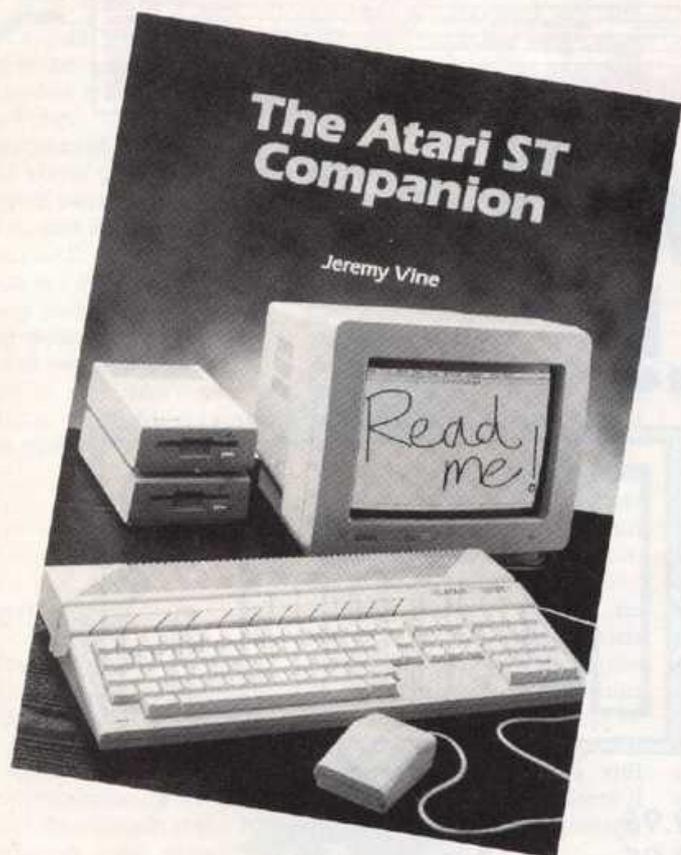
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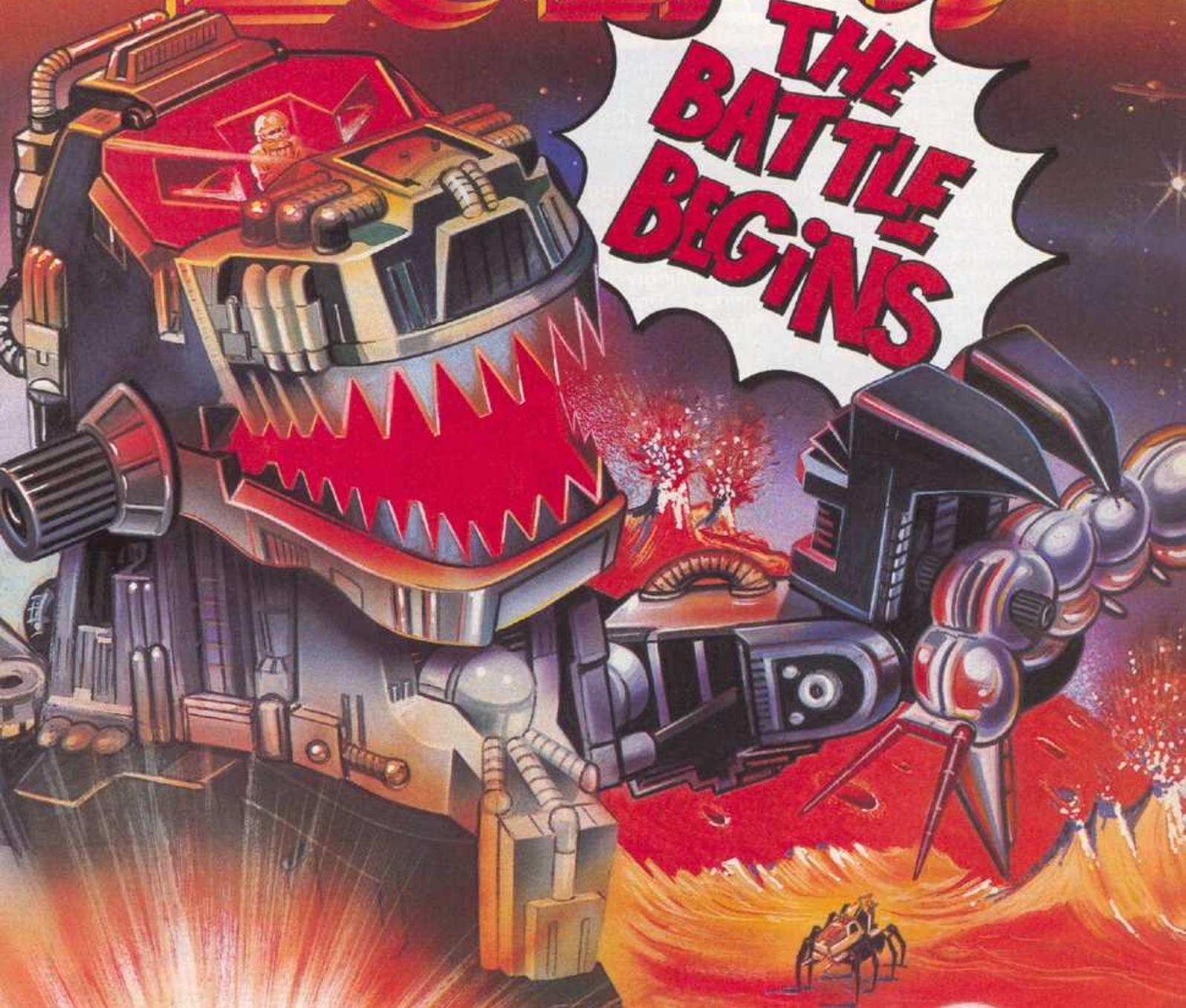
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This title is now available for the BBC Micro at £9.95 on cassette and on disk at £14.95. Order now to ensure your stocks for the Christmas rush.

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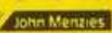


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# Popular's Xmas Crackers

**L**et's face it, Christmas presents are pretty dodgy things. Aunties and Uncles, even parents (who might be expected to know better), are quite capable of making the most horrendous lapses of judgement and buying the most unspeakable things in the belief that it was 'just what you wanted'. I remember, for example, that one infamous auntie, who, on being told that I liked rock music, bought me *Heavy Junction Plays the Bits of Deep Purple*.

When it comes to computer programs, the situation is fraught with danger. I mean, suppose you're a noted Dragon basher much given to wielding mighty power swords of Tharg and somebody lovingly presents you with *Travels with the Mr Men* - try maintaining a fixed grateful smile then . . .

With these things in mind we present the *Popular Christmas Crackers* - hot off the press games you may not have already got that you can reliably instruct a relative to buy. Don't leave things to chance, study the lists below and issue precise details to potential present buyers. Then they have no excuse.

Incidentally, an Ad is a mighty axe wielder as Arc is fond of jumpy-runny-jumpy a bit more, blast dodge games, and Ut is for those who like really useful practical sorts of things.

## Spectrum Sweevo's World

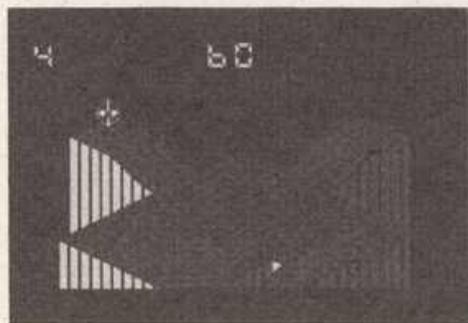
The latest program from Gargoyle Games is a departure from its previous devious graphic adventures so it may not be suitable for a purist Ad, but an Arc should bounce around gleefully if finding this one under the synthetic tree.

It owes a lot to *Alien 8* and *Knight Lore* in its 3D presentation and 'how the hell do I get from there to there' puzzles but goes beyond those games in both wackiness and technical brilliance. It features an inept robot who has to move around dozens of different screens collecting objects like old tin cans and boots and sneaking up on occasional geese. Getting through the screens involves not only putting the tin cans to good use and ascending on little platforms, but also dodging pineapples, a nasty little girl and, most horrendous of all, giant fingers that shoot up through the floor to poke you. All this in high res graphics and with the most ludicrous scoring system ever devised - what more could you want? **Price** £7.95 **Suppliers:** Should be around in both computer specialists and chain stores. If not: Gargoyle Games, 74 King Street, Dudley, West Midlands DY2 8QB.

## Gyroscope

Another one for Arc fans. Whatever Melbourne House says, this game is, in fact, a variant on the arcade classic *Marble Madness*, which requires control of a gyroscope that is, if anything, even more difficult to keep in check than a marble.

The game is all down to timing and split



second reactions as you move the spinning gyroscope across a geometric landscape, down channels, across tiny bridges over

chasms, over slippery bits and sticky bits towards a goal. The whole thing is done on a strict time limit and is, to begin with, fiendishly difficult.

Graphics are excellent as is the sound (on a Spectrum!) and the logic to recreate the sense of centrifugal force, particularly when the gyroscope starts to run out of energy, cleverly realised.

**Price** £7.95 **Suppliers:** Specialists and chain stores, if not: Melbourne House Castle Yard House, Castle Yard, Richmond.

## The Art Studio

Certainly a Ut but all Arc and Ad fans should be quite happy with it. It is certainly the best graphics program ever designed for the Spectrum and you really don't need to have any great artistic talent to produce professional looking results.

It goes beyond the usual features of *Line*, *Circle*, *Arc*, *Fill* and lets you manipulate areas of design in a variety of ways. You can cut and paste an area defined by a window into another area of screen. Shapes can be distorted by 'forcing' them into a particular window shape and the whole screen can be magnified temporarily for some precision work.

The text font is similarly flexible; a large number of styles are provided and you can easily define your own. Text on screen can be moved around and distorted in exactly the same way as shapes or filled with a large variety of textured shades. The program can also be used with an AMX Mouse or a joystick and all the commands are issued via a user friendly icon and menu system.

**Price** £14.95 **Suppliers:** specialist stores, most chains; if not: Rainbird, Wellington House, Upper St Martin's Lane, London WC2.

## Think!

An unusual thing, a computerised board game which is both original and not merely computerised for the sake of it. This program also has the virtue of potentially appealing to the whole family, force them to have a go at it and they may even be prepared to give up TV to computer playing rather than watching the *Two Ronnies Christmas Special*.

The game is played on a grid of six by six

squares and the task is to complete a row - horizontally, vertically or diagonally across the board. Pieces are placed from the bottom or right hand of the board, and as each piece is placed it shunts along any other pieces on the same row or column. The end result is a fantastically devious game which can be played by six year olds easily but which can reach a complexity close to that of Chess.

Nicely presented with the Spectrum playing an extremely good game if you can't find any real people to play against. A surprise perhaps but not a disappointment for any Arc, Ut or Ad fan.

**Price** £7.95 **Suppliers:** Specialists and most chains if not: Ariolasoft Asphalte House, Palace Street, London SW1E 5HS.

## Commodore The Human Race

This is a classic Arc game of the most fiendish, just one more go, I think there's a bug in this program, this screen is impossibly kind. Over several screens you try to evolve from ape to human, each screen requires much joystick twitching and careful timing as you dodge birds, dinosaurs and sundry other mammals. You also get to negotiate steaming lava pits and generally have a bad time.

There is some marvellous music from Rob Hubbard and best of all the whole thing costs £1.99 so even tiny relatives could afford it.

**Price** £1.99 **Supplier:** All computer outlets; if not: Mastertronic, Paul St, London EC1.

## Gyroscope

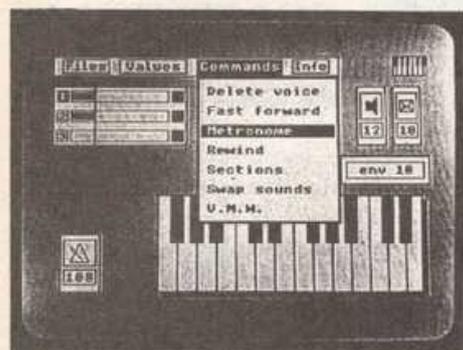
See the comments on the Spectrum version. This version features a fully scrolling screen and a proper music score (which could have been better).

**Price** £7.99 **Supplier:** As Spectrum version.

## The Music System

This is a must for Ut fans who also like music. An extremely complex music creation system that takes the Sid chip to new heights and lets you compose music on screen using conventional notation and real time. The Advanced music system extends this to include midi compatibility and score print out and is very worth while

# Popular's Xmas Crackers



if you have a Midi equipped music keyboard.

**Price** £14.95 cassette, £17.95 disc. Advanced system disc only £34.95 **Suppliers:** Most specialist shops, some chains, also music shops. If not Rainbird, Wellington House, Upper St Martin's Lane, London WC2.

## Transformers

A game that looks rather boring from the box shots but is, in fact, quite ingenious. Based on the famous toys and television program featuring robots that can transform into cars, the game continues their adventures and so is a good bet for younger Arc fans.

The game involves zooming around a futuristic setting of tubes and girders hunting out parts of an Energorm cube. You have a team of Transformers to accomplish this task which involves much blasting as you are constantly assaulted by the evil deceptions. Not only blasting but some strategy too as you must decide what transformer to use where and when to change from robot to car. Nice music and slick scrolling graphics.

**Price** £8.95 **Suppliers:** Retail everywhere, if not: Ocean, 6 Central Street, Manchester M2 5NS

## Little Computer People

Suitable for young fans of every hue as well as a few old ones prepared to suspend cynicism and enter into the spirit of this remarkable program.



You get, simply, a little man whom you see 'living' in a three storey house. You see him watch TV, play the piano or records, feed himself and scraggy dog, do aerobics and generally live out a full if confined existence. You can ask him to do things, pet him, play cards with him and even get him

to type you rather strange little messages.

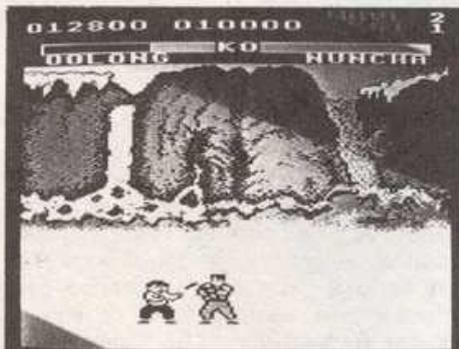
The whole thing is beautifully done with a real sense that the little man exists. An astounding technical achievement.

**Price** £9.95 **Supplier:** Most chains and specialist shops, if not: Activision, 15 Harley House, London NW1.

## Amstrad Yie Ar Kung Fu

Although any Kung Fu game bears inevitable comparison with *Way of the Exploding Fist*, this is a good choice for Amstrad owners because it shows off the high resolution graphics and animation of which the machine is capable.

As with any Kung Fu game the whole thing is about kicking your opponent's brains out as quickly as possible. *Yie Ar Kung Fu* features two robed competitors who can kick, punch, slide and tumble under joystick control. The computer can prove a fierce competitor but the best fun is had by beating up a friend. **Price** £9.95 **Supplier:** Most specialist shops, some chains; if not: Imagine Software, 6 Central Street, Manchester M2.



## Sorcery Plus

A superb Arc game with some astounding use of graphics. This is the disc based enhanced version of the original Amstrad *Sorcery* with more screens.

You control a little wizard whose task it is to release a number of other wizards locked in various dungeons. Truly cartoon-like, it remains addictive even after dozens of plays.

**Price** £14.95 **Supplier:** Some specialist shops and chains; if not: Virgin Games, 2-4 Vernon Yard, Portobello Road, London W11 2DX.

## Tasword 6128

Definitely a Ut, this is an extremely professional word processor for a relatively low price. It has all the main word processor features like block move, search and replace, left and right justify and so on but is very easy to use with an excellent manual. It is also compatible with *Tasword's* spell check and mail merge programs as well as programs like Campbell System's *Masterfile*.

**Price** £24.95 **Supplier:** Mostly specialist shops; if not: Tasman Software, Springfield House, Hyde Terrace, Leeds LS2.

## Graphics Adventure Creator

A superb Ut that is also perfectly suitable for all Ads. It lets you create very complex adventures with quite detailed illustrations for each location. See this week's Adventure Corner for a more detailed look.

**Price** £24.95 **Supplier:** Some specialist, some chains; if not, Incentive Software, 54 London St, Reading RG1 4SQ.

## BBC

### Dr Who and the Mines of Terror

This is a major new arcade game for the BBC. It features not only the program but also a 16K Eprom which you have to fit internally into the BBC. This provides more memory for what is, basically, a souped up platforms and ladders game.

In his attempt to destroy an alien mining base, the Doctor gets to do lots of running, jumping and scrolling in all directions. There are objects to collect and use and puzzles to solve. The BBC is fairly starved of good arcade material so all Arc fans will want to have a crack at this one.

**Price** £18.95 (cassette) £19.95 (disc) **Suppliers:** Some specialist shops; if not: Micropower, Northwood House, North Street, Leeds LS7 2AA.

## Revs Four Tracks

*Revs* is undoubtedly the best car racing game on any micro, certainly in terms of being an accurate simulation of what it's like to race a real machine. This package gives your existing *Revs* package an additional four tracks around which to test your nerves and responses. Included are Brands Hatch and Donington Park.

**Price:** £9.95 **Suppliers:** Some specialist computer shops; if not: Acornsoft, Fulborn Rd, Cherry Hinton, Cambs.

## QL

### The Pawn

One of the very few games for the QL, that actually look like they are running on a sophisticated 68000 based machine. This is a must for Ad fans particularly purists since it is a text adventure of the classic sort. What sets *The Pawn* apart is the great flexibility of the language interpretation. The parser allows for complex sentences in almost conventional English.

The above coupled with a large magical kingdom, chock full of magic objects, dwarfs and quests makes this heaven for QL adventurers everywhere.

**Price** £19.95 **Supplier:** Some specialist shops, if not: Sinclair Research, Stanhope Road, Camberley, Surrey GU15 3BR.

# ACE GAMES!

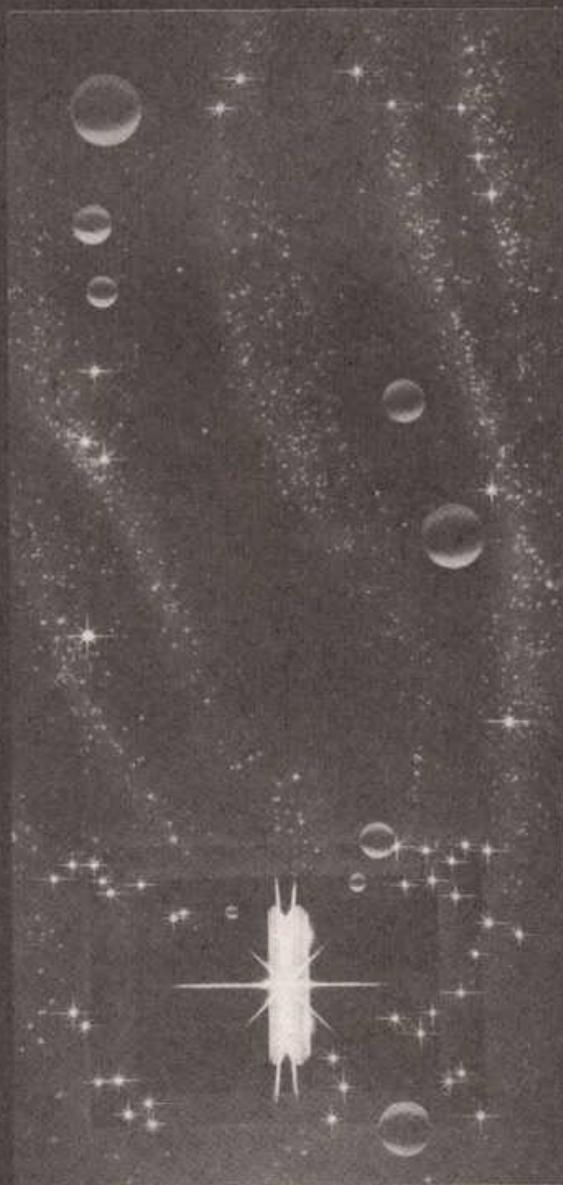
**PACK 1:** 'Arcade Classics Volume 1' (Spectrum). A collection of arcade favourites; Starblitz, Robon, Ostron, Ugh!

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## Sound Expander

**Hardware Sound Expander Module**  
**Price** £99.99 **Micro Commodore 64**  
**Supplier** Commodore, 1 Hunte's  
 Road, Weldon North Ind. Est.,  
 Corby, Northants.

**F**or £99.99 it's now possible to turn the Commodore 64 into an FM music computer similar to Yamaha's popular CX5. The Sound Expander Module, developed by Music Sales but to be released by Commodore itself, offers eight-note polyphonic playing of present FM sounds, with all the life and realism associated with that technique.

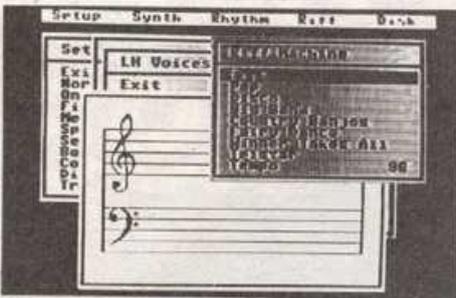
The basic software on disc is of the *Play-Along* variety, controlled either from the popular Music Maker clip on keyboard (now available separately for £9.99) or from a full-sized four-octave keyboard of Italian origin, which will also be available separately from Commodore, costing around £69.

Basic playing options include normal or single finger chords, octave transpose (vital if using the Music Maker keyboard), ensemble on/off for richer sounds limited to four-note polyphony, chord memory, programmable split point, variable border colour and so on. You can split the keyboard at any point

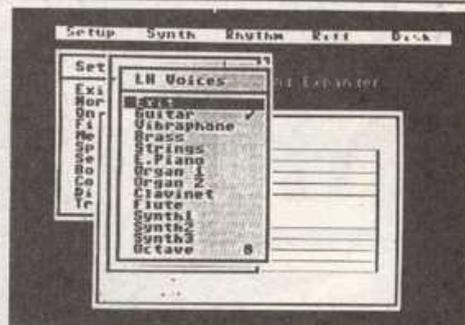
and will be offered the same selection of sounds for the top and bottom halves of the split.

All the sounds are very life-like compared to the 64's SID chip sounds or to conventional voice expanders, but there's very little control available except for an overall brightness adjustment.

There are 12 preset rhythm accompaniments available, each with their own arrangement of bass and arpeggio patterns and lifelike percussion sounds. There's also a "riff machine" option which gives you 12 complex backing patterns in various styles which can be chained together in almost any order - impressive, but of limited use.



In February, however, Music Sales hopes to be delivering an FM composer package for eight-voice polyphonic pieces, and the Sound Expander module



has a follow-on cartridge port which will eventually accept an input from a touch-responsive keyboard. It's also planned to design a sound creation package.

The Sound Expander software has many educational applications, since all notes played are displayed on a music staff with selectable share or flat notation. Presumably this display will be further exploited in the compositional software.

The Sound Expander is an inexpensive way of getting into high-class sound generation, but won't satisfy the more experimental musician for long using only the present software. However, by the time you've exhausted its current options, it's likely that many more will have become available. On that basis it's logical to give the system a heartfelt thumbs up.

**Mark Jenkins**

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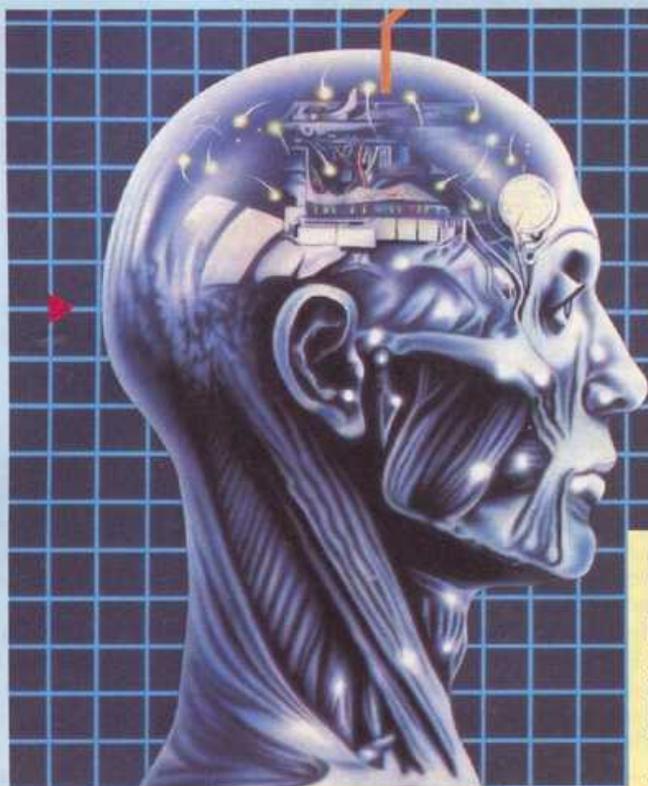


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a practice mode where the computer analyses and advises on your moves

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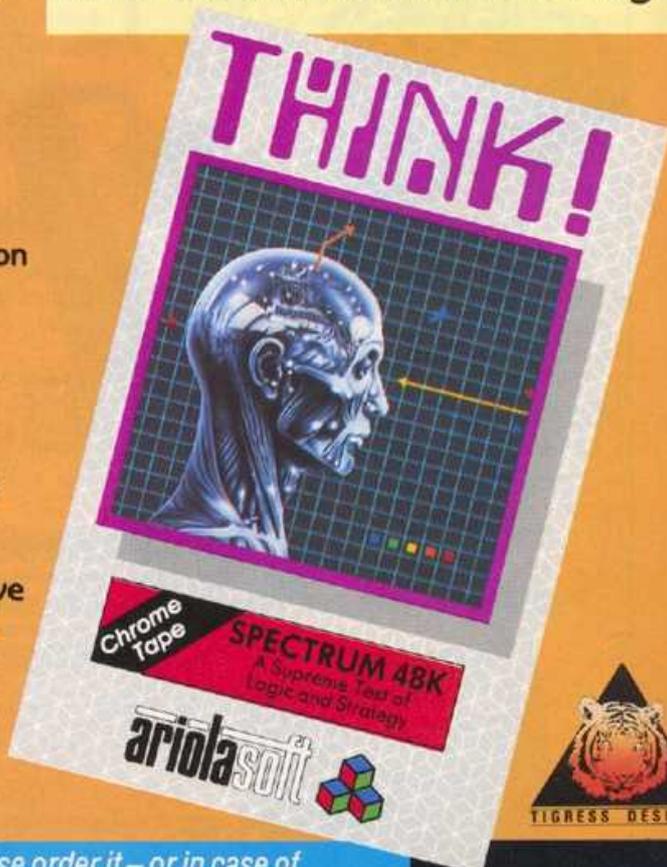
#### ★ BLITZ THINK!

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ariolasoft



## Light pen

**Hardware** Amicron Microscribe light pen **Micro** CBM 64 **Price** £29.95 **Supplier** Amicron Ltd, 62-64 Queen's Road, Reading, Berks, 0734 500815.

**L**ight pens have traditionally been popular micro peripherals, because they are relatively inexpensive, fun to use, and allow the user to control the computer without resort to the keyboard. Equally traditionally, they have been unreliable, badly supported by software and mediocre in construction.



The Microscribe light pen is the first product which overcomes most of the disadvantages of its predecessors. Like all light pens, it operates by interacting with the screen timing of the computer; by timing the instant at which the screen refresh triggers the circuit, the light pen software can move a cursor around the display screen, or select subroutines from an icon menu.

The Microscribe cassette software, which can be dumped to disc, includes three routines; a hi-res graphic design-

er, a graphic calculator, and a control program for your own routines. All the software works without any problems and interacts well with the hardware.

The Microscribe itself is very well engineered; it has a steel barrel and a long lead, and plugs into the joystick port. On the tip is a sensor, which, when pressed against the screen surface, sends a control signal. This means you do not have to touch the keyboard at all while using the Microscribe.



The *Graffiti* hi-res design software is reasonably powerful. At the bottom of the screen is a row of six boxes, marked *Draw*, *Inks*, *Zoom*, *Eraser*, *Memory* and *Type*. When "hit" by the pen, each will bring up a further selection of command choices.

*Graffiti* allows you to draw open or filled circles, squares and other polygons; lines, either single or linked; rays, all coming from a central point; brush patterns, and so on. There are also zoom functions for pixel editing, various undo commands (including *Clear*, which irreversibly blanks the whole screen, so beware!), and routines to save drawings to tape or disc. One of the most interesting features is the provision of three "pens", which can be set to the required

colour and texture, then recalled at any time. It's like having three separate paintbrushes, rather than one which you have to clean off every time you wish to change style.

All 16 Commodore 64 colours are available for designs, although you'll find that the light pen works better on bright colours. If you want to use dark colours, it can be easier to draw in a light colour then swap it around.

The other programs on the tape are also well-designed; *Pencalc* is a simple on-screen calculator program which might have educational as well as practical uses; and *Pencode* is a small machine code routine which improves the performance of the 64's hardware, allows you to define your own sprite cursor, and use the pen in your own programs.



Overall the Microscribe, with its intelligent design using the tip sensor, its strong metal construction, efficient screen control and imaginative software, can be recommended at the price. Light pens will never be compulsory purchases while there is so little software for them, but perhaps products of this quality will encourage more support from software houses and micro users.

**Chris Jenkins**

**£9.95**  
cassette

**B.B. BOUNDER**

**£12.95**  
disc

**CBM 64/128**  
Available Amstrad late February

10 levels of fun make this torture excellent value for money. Nova rating. Definitely one of those 'just another go' games. Game of the month February" - Computer Gamer

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# MAKE MONEY WITH YOUR MICRO!

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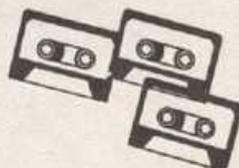
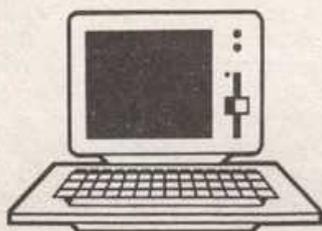
Although you may at present only use your micro to play games, your computer is in fact a very sophisticated business machine which you could use to make yourself a very substantial full or part time income. Whatever your age opportunity exists. You may be a schoolboy looking for a school business project. You may have left school and be looking for a viable business idea. You may have a good job, but you would like to have an extra income. Whatever your circumstances, if you want to make some money, you can turn your micro into a money making machine.

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Of course it is possible to make money as a games designer, but unless you understand machine code, and have lots of original ideas, you might as well leave games designing to the professionals. After all games design is a very competitive area, and there are lots of easier ways to make money with your computer.

## HOW TO GET STARTED

We have compiled a special report which provides you with all the information you need to start a small part time business, which you can operate from home, using your micro. The report contains hundreds of business ideas which give you the possibility of earning thousands of pounds from your micro. Each idea is explained in detail, you need only the simplest of programming ability, if you can write simple basic programmes you can operate any of these ideas. (When we say simple basic programmes we mean very simple) some of the ideas require no programming but even the ideas that have the greatest potential are very simple and easy to operate.



### ANY COMPUTER WILL DO!

Whatever your micro, Spectrum, Commodore, Electron, Amstrad etc. all the business ideas in this report are applicable to all home micros, no matter how humble or sophisticated.

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When the report arrives select one idea that appeals to you.

Try out the idea for three months, read the directions carefully, start in a small way, remember to begin slowly.

At the end of this trial period calculate how much income you've made, if you're not satisfied with the results simply return the report and we will **REFUND YOUR MONEY IN FULL.**

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A telephone would be helpful, and a computer printer would be a great asset (if you do not own a printer don't worry, you can buy one from your first profits).

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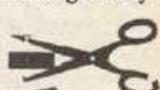
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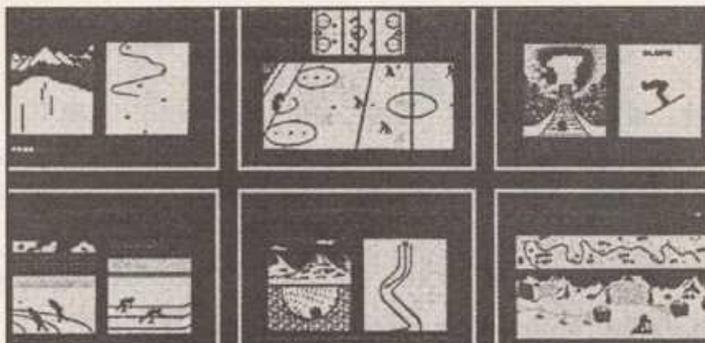


## S'no fun

**Program** *Winter Sports Micro* **Spectrum Price** £9.95  
**Supplier** Electric Dreams Software, 31 Carlton Crescent, Southampton.

**W**inter draws on and the thought of a hot power supply is more than welcome. Then suddenly my Spectrum is snowbound with *Winter Sports*, an eight event sports simulation, which refuses a multi-load. So it's on with the woolly gloves and on with part one.

Slalom, Giant Slalom and Downhill are grouped together and look suspiciously similar. The left hand panel gives a skier's eye view while the right is an overhead map. Skiing to the sides of or through gates isn't much helped by the forward view, so steering a course is rather like drawing wavy lines with a graphic package. If you fail a gate you can't reach the



high score table, but you can't abort a run either and I found it rather slow.

Ice Hockey has more substance, a *Match Day* on skates, with a two player option. In reality it's a physically violent game and for me the figures moved rather slowly, though tackling works well apart from some awful attribute clashes which could make you lose track of your player. Judging which figure will come under your control can be difficult as there's no special indication and it's too easy to lose command of your goalkeeper when he's far from the net.

Ski Jumping is a question of steering a straight line, timing your run's start and jump, an balancing while in the air. It can all be over very quickly. Speed skating is the first appearance of straight Track and Field joystick jiggling, and I found the 500 metres hard on the wrist so didn't even attempt the 10,000 metres which sounded like too much of a bad thing. Maybe it would at least let you separate the two contestants enough to change lane.

The Bobsled is a return to the Slalom style, though it calls for different techniques as you have to keep a close

check on your speed or your sled goes over. A cross-section of the course lets you see how you lie on the banking while the right window is another wavy line.

The Biathlon is an eccentric combination of cross country skiing and shooting. Joystick wiggling moves you along the course, against an attractive background, although you have to be careful not to use up all your stamina. Shooting is a question not of aiming but timing, hitting fire when the cursor is over the small circle. You have to be quick to reload before you can shoot the next target.

If you've not suffered frostbite, you can return to the start and reload to try to better your efforts as the best scores are kept through the sections. Fans of the genre may find things to please, but several of the events left me feeling so what? Dare I say that I found the whole thing rather... cold?

John Minson



## Sparse detail

**Program** *Cammac One Micro* **Spectrum Price** £5.95  
**Supplier** Micro Zeigthy, 7 The Crescent, Hurstbourne Tarrant, Andover, Hants SP11 0AP.

**S**ix pounds is not a lot to pay for an assembler. In fact, those thinking of getting into assembly language may consider it a low cost way of trying the water. Beware! While *Cammac One*

does its job (mostly), it hardly goes about it in a friendly way. It also boasts the sparsest front panel that I've seen.

Written mostly in Basic, *Cammac* translates the op-codes, then pokes them directly into the memory, as far as I can see. This means that the only way of editing code is to return to Basic by pressing *Break* after entering a command, then restarting at the address where the error occurred. It claims to cope with all the 256 non-prefix instructions, and all that I tried worked, but you have to

be careful in handling them. For example, if you want to LDA,6 you'd have to type in LD A, N (don't forget your Caps Shift, though the single sheet instructions neglect to tell you to use it), then type in 6. There's no clue as to why wrong commands aren't accepted - they just aren't and prefixes are very tricky.

*Cammac* also comes with a disassembler which does its job and not much more can be said than that. The Tester-Monitor is slightly more elaborate with its display of the registers. You can single step

by pressing any key, or run it directly with a *Usr* command. For some reason, though, it fails to cope with jumps, making it less than wholly useful.

Really this is more suited to a listing somewhere. Novices would soon lose patience and even experienced assembler writers will want more. *Micro Zeigthy* promise two more advanced versions at proportionately higher prices. I can only hope that they're an advance on this.

John Minson



## The white stuff

**Program** *Mikie Micro* **Spectrum Price** £7.95 **Supplier** Imagine Software (1984), 6 Central Street, Manchester M2 5NS.

**T**ormented by teachers, jarred by the janitor's bucket, chased by cheer-leaders, *Mikie* is an all-American kid with a message to deliver to his girlfriend, and no high-school hi-jinks can stop him.

This conversion of a Konami arcade game by Imagine is great fun. I'll admit to not having seen the original, but going from the box illustrations the main difference seems to be that the figures here are monochrome. The game itself plays extremely well, which is not to say it's easy.

The first screen is a question of collecting hearts to complete a message and exit the classroom. The problem is that they are hidden under the chairs of *Mikie's* classmates. *Mikie* deals with this

by the hip-zap which rockets the pupil into an empty chair so that *Mikie* can move in. He's got to avoid the wandering teacher, though, as he's only safe when he's sitting.

Free from class, *Mikie* has to dodge other members of staff in the corridors and make for the locker room where the hearts are in groups of three, collected by shouting at them. This screen is exceptionally busy with unfriendly characters who have no romance in their souls. In later screens *Mikie's* also beset by cheerleaders, whose

kisses stun him.

This is all rather addictive and takes a fair bit of skill - perhaps the screens are a little too crowded, but that ensures you have something to aim for. My main complaint is that the instructions fail to mention that in keyboard mode you need separate fire keys for shouting and zapping. A good-natured arcade copy, though, which should raise the blood pressure after your Christmas pud.

John Minson



# THE WRITER



**"Damn impressive. . ."**  
(Your Sinclair, January 1986)

At last a truly professional wordprocessing package for your Sinclair Spectrum. Comparing The Writer with Tasword II and OCP's Wordmanager, Your Sinclair had virtually nothing but praise: "When it comes to choosing, I've no doubt that **The Writer** will take over from Tasword II as the best Speccy wordprocessor." "The Writer really gets good when you come to print your document." "**The Writer is damn impressive. . .**"

Never before has there been such a professional, full feature package of this kind for the Spectrum: up to 127 columns of text (scrolling display), able to read Tasword II files, produces and reads WORDSTAR format files, supports printer spooling (print one document while typing in the next), user definable printer files, pull down menus, extensive help files on Microdrive and Opus Disk Drive versions, supports Mailmerge and Printmerge, and will allow files from the forthcoming sister product 'The Database' to be used for mailshots, form letters, etc. And only The Writer will be able to interact with 'The Artist II' (coming early 1986) to cut and paste text and graphics for page-make up purposes.

All in all, a quite stunning package of a standard more associated with packages for the IBM PC than the Spectrum.

The Writer is just £12.95 on tape or Opus Disk. Write concerning Microdrive and other disk versions.





## Ham fisted

**Program** *International Karate*  
**Micro Spectrum Price** £6.50  
**Supplier** System 3 Software,  
Southbank House, Black  
Prince Road, London SE1 7SJ.

**T**ime to take another kick at the Spectrum with a further addition to the martial arts genre. This is very much in the vein of *Exploding Fist*, with the international element coming from the varieties of backdrop. You can deliver a roundhouse in Rio, somersault in Sydney, jump in Japan, knock your opponent flying in New York and shout 'Eeeeeeee - yargh!' in Egypt. Sadly, London never made it to the tape.

Sixteen different moves are possible, from mere walking forward and backward to



leaping over your opponent's head, chosen by the eight directions of a joystick with or without fire, or a sensible three by three square of keys. Some Kempston interfaces are reported not to work with the game, but I had no problems. The figures

themselves are quite well animated, slightly squatter than Melbourne House's but possibly more detailed. The moves seemed to work well, though I wasn't sure that some blows weren't slightly prejudged.

However, in one player op-

tion the computer provides a worthy opponent as you struggle for two points in 30 seconds. There's also a two player option. If you win a bout you can score bonus points by kicking a table full of bricks or dodging flying Kung Fu stars, though for some reason these didn't seem to get added to my total.

What this version of the game does have is speech, and it's not at all bad. I rather liked hearing my score. The front end is not too hot though, with nothing to indicate which option you've chosen. All in all it's a reasonable game, considering that it's somewhat cheaper than *Exploding Fist* and if you don't already have that, you could do worse than rucking all over the world.

**John Minson**



## On line

**Program** *Micrograph*  
**Micro Amstrad CPC with CP/M**  
**Price** £49.00 **Supplier**  
Amsoft, Brentwood House,  
169 King's Road, Brentwood,  
Essex CM14 4EF.

**M**icrograph is the missing fourth program in Amsoft's suite of business programs that run under CP/M. The reason for its delay is easy to guess - implementing graphics on CP/M, while possible,

seriously compromises the portability of the product and requires machine specific coding. Still it's a nice release and probably worth the wait.

The first graph utility for the CPC was Camel's *Grasp* and in comparison, since both are limited by the resolution of the CPC it is not surprising that the quality of the graphs drawn are very similar. *Micrograph* has a slide show facility and offers more graph drawing options than *Grasp*, but the latter lets you shrink and superimpose the graphs drawn to produce some highly complex composite

screens. *Grasp* is also very much cheaper.

However, *Micrograph* wins out with its data handling potential.

The program has a mini version of the *Microspread* spreadsheet built in. This is unable to use the complex formula definitions found in *Microspread* but once the data is entered you can manipulate it to produce different graphs by extensive block and cell control commands. Files produced by *Microspread* can be loaded into *Micrograph*, although unfortunately once used by the

latter they cannot be saved again in a format readable by *Microspread*.

There are options to print the spreadsheet or dump the graphs to an Epson printer or the Amstrad DMP-1. My only reservation is that if you wanted to spend anything up to £100 on producing business graphics you may need the higher quality output possible only via a pen plotter option and it is this fudged approach that is perhaps the package's weakest point.

**Tony Kendle**



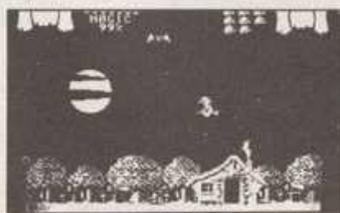
## Now more

**Program** *Now Games 2*  
**Micro Spectrum Price** £8.95  
**Supplier** Virgin Games, 2-4  
Vernon Yard, Portobello  
Road, London W11 2DX.

**N**ot surprisingly Virgin's first Now games compilation was a success, so here's a late bid for the Santa's sack sales, titled, with stunning originality, *Now Games 2!* This time it's only five programs, but that's still less than two pounds each, and here's my personal appraisal.

*World Cup* from Artic was always sub-*Match Day*. It's

only five a side rules with tiny players, the white side being difficult to see against the green field, and both sides becoming confused in tackles when the attribute clashes are worse than Millwall and Chelsea fans meeting for a polite discussion of their teams' merits.



*Cauldron* and *Chuckie Egg II* are both arcade adventures and probably rate about

equally, though for different reasons. *Cauldron* looks good, apart from the inevitable attributes, and includes a shoot 'em up element as your hag zooms round on her broomstick, but is probably less playable than the more spartan looking chocolate egg making game. Still, both should provide hours of fun.

*Airwolf* is a problem. It has nice graphics and a more complex plot, calling for greater ingenuity than either of the above, as you steer your wonder helicopter to a secret base and then through a cave system to rescue some scientists. The problem is that controlling the chopper is very difficult. Those with patience and a steady hand may

well love it.

The best till last with *Tir Na Nog*, which for me pulls this collection out of the ordinary. It was the first of the Cuchulainn games, featuring that beautifully animated figure who stomps around the Celtic otherworld in a true graphic adventure. The only grumble is that the instructions on the inlay are for the Commodore version, I think.

So there you have it, and even if *Now 2* isn't quite so good as its predecessor it's still great value; and if you don't already have *Tir Na Nog* it's a must - count the other programs as a bonus.

**John Minson**



# HALLEY'S COMET

## A FINDER AND PLANETARIUM



**48k ZX SPECTRUM**  
**£8.95**

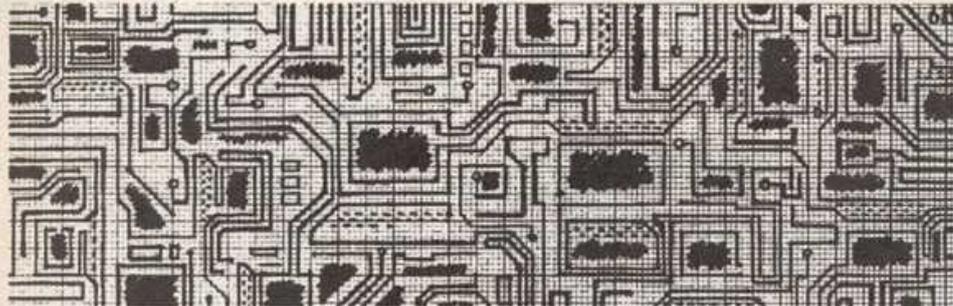
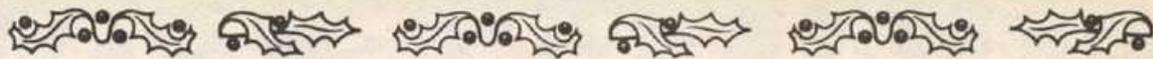
Here is the definitive Halley's Comet Finder and Planatarium for your Sinclair Spectrum. Whether you are following the passage of Halley's Comet in the night sky, or just interested in Astronomy, then this program is a must for you. It has full-feature planatarium on side one which allows you to see the planets, major stars and, of course, Halley's Comet as they progress through the sky. You can vary the speed of the star and planet motion from real-time through to jumping thousands of years every few moments! Explore many of the wonders of Astronomical history, see a simulation of the unique triple conjunction of 6BC which may link to Biblical sightings, and explore many other points of interest in the accompanying booklet.

Written by a profesional Astronomer, Dr. D. T. C. Porthouse, this program will not only be invaluable to you for following the 'one in a lifetime' event of Halley's Comet's passing but also be of absorbing interest to you and your friends for many years to come.

The Halley's Comet Finder and Planatarium come with an Orrery (Solar System simulation).



SoffTechnics, 12/13 Henrietta Street, London WC2



# WILBUR

by T A Bartley

**P**art Four (out of five) of *Wilbur*, our 100% machine code arcade game - played on 20 screens all in glorious technicolour. You should be getting used to the routine by now; use the Basic loader to poke the data from

the dump listing into memory. After this mammoth effort, if the checksum is correct, save the data to tape with *Save "" Code ?????,????*.

And keep that chin up... only one more week to go!

For those without an impish sense of adventure, tape copies of *Wilbur* can be obtained from the author, T A Bartley, at a cost of £2.00. Write to 81 Beverley Crescent, Grimsby, South Humberside, DN32 9TJ.

```

1000 REM      DECIMAL LOADER
1010 POKE 23609,50
1020 LET T=0: FOR N=51996 TO 53885
1030 INPUT J: PRINT N,J: POKE N,J: LET T=T+J: NEXT N
1040 IF T<>148782 THEN PRINT "DATA ERROR:CHECK LISTING"
1050 IF T=148782 THEN PRINT "DATA OK"

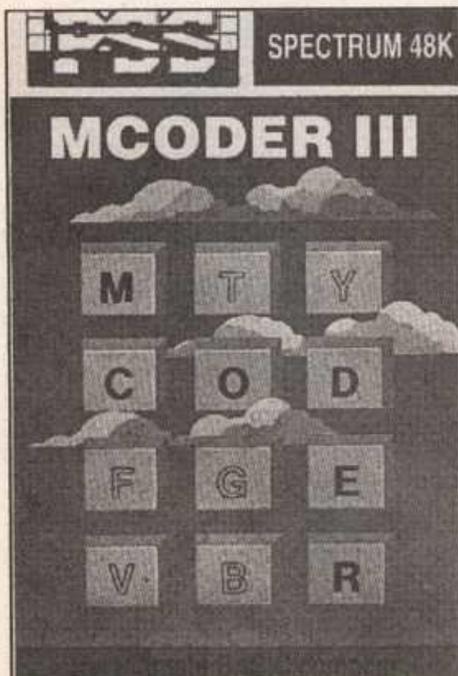
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|-------|-----|-----|-----|-----|-----|-----|-------|-----|-----|-----|-----|-----|-----|-------|-----|-----|-----|-----|-----|-----|-------|-----|-----|-----|-----|-----|-----|
| 51996 | 0   | 0   | 0   | 0   | 54  | 0   | 52266 | 24  | 27  | 63  | 154 | 63  | 94  | 52536 | 63  | 252 | 0   | 0   | 7   | 224 | 52806 | 3   | 255 | 0   | 0   | 1   | 240 |
| 52002 | 247 | 0   | 227 | 128 | 60  | 128 | 52272 | 96  | 222 | 124 | 220 | 66  | 220 | 52542 | 1   | 128 | 0   | 0   | 7   | 224 | 52812 | 1   | 210 | 1   | 210 | 1   | 222 |
| 52008 | 94  | 0   | 206 | 192 | 223 | 192 | 52278 | 242 | 248 | 234 | 240 | 155 | 192 | 52548 | 31  | 248 | 0   | 0   | 127 | 254 | 52818 | 2   | 242 | 2   | 2   | 2   | 240 |
| 52014 | 255 | 0   | 126 | 0   | 61  | 128 | 52284 | 223 | 0   | 248 | 0   | 252 | 0   | 52554 | 0   | 0   | 255 | 255 | 51  | 153 | 52824 | 2   | 216 | 0   | 208 | 0   | 240 |
| 52020 | 65  | 128 | 118 | 0   | 112 | 0   | 52290 | 191 | 128 | 193 | 224 | 207 | 240 | 52560 | 51  | 153 | 51  | 153 | 255 | 255 | 52830 | 0   | 96  | 255 | 192 | 204 | 192 |
| 52026 | 103 | 0   | 62  | 0   | 28  | 0   | 52296 | 215 | 248 | 216 | 24  | 89  | 252 | 52566 | 0   | 0   | 63  | 252 | 0   | 0   | 52836 | 204 | 192 | 255 | 192 | 0   | 0   |
| 52032 | 15  | 192 | 7   | 128 | 0   | 0   | 52302 | 122 | 252 | 123 | 6   | 59  | 62  | 52572 | 7   | 224 | 1   | 128 | 3   | 192 | 52842 | 15  | 128 | 75  | 128 | 75  | 128 |
| 52038 | 15  | 0   | 31  | 128 | 24  | 128 | 52308 | 59  | 66  | 31  | 79  | 15  | 87  | 52578 | 7   | 224 | 12  | 48  | 31  | 248 | 52848 | 123 | 128 | 79  | 64  | 64  | 64  |
| 52044 | 19  | 192 | 19  | 192 | 31  | 128 | 52314 | 3   | 217 | 0   | 251 | 0   | 31  | 52584 | 24  | 24  | 28  | 56  | 47  | 244 | 52854 | 15  | 64  | 27  | 64  | 11  | 0   |
| 52050 | 15  | 96  | 16  | 96  | 29  | 128 | 52320 | 48  | 12  | 96  | 6   | 64  | 2   | 52590 | 114 | 78  | 105 | 150 | 33  | 132 | 52860 | 15  | 0   | 6   | 0   | 63  | 240 |
| 52056 | 28  | 0   | 25  | 192 | 15  | 128 | 52326 | 192 | 3   | 98  | 70  | 52  | 44  | 52596 | 110 | 118 | 113 | 142 | 63  | 252 | 52866 | 25  | 144 | 25  | 144 | 63  | 240 |
| 52062 | 7   | 0   | 3   | 96  | 15  | 112 | 52332 | 26  | 88  | 119 | 238 | 170 | 85  | 52602 | 31  | 248 | 47  | 244 | 99  | 198 | 52872 | 0   | 0   | 3   | 224 | 2   | 224 |
| 52068 | 14  | 56  | 3   | 200 | 5   | 224 | 52338 | 161 | 133 | 178 | 77  | 237 | 183 | 52608 | 3   | 192 | 6   | 96  | 15  | 240 | 52878 | 10  | 224 | 14  | 224 | 11  | 208 |
| 52074 | 12  | 236 | 13  | 252 | 15  | 240 | 52344 | 51  | 204 | 31  | 248 | 15  | 240 | 52614 | 24  | 24  | 27  | 216 | 28  | 56  | 52884 | 0   | 16  | 3   | 208 | 6   | 208 |
| 52080 | 7   | 224 | 3   | 216 | 4   | 24  | 52350 | 3   | 192 | 0   | 0   | 14  | 112 | 52620 | 47  | 244 | 114 | 78  | 105 | 150 | 52890 | 2   | 192 | 3   | 192 | 1   | 128 |
| 52086 | 7   | 96  | 7   | 0   | 6   | 112 | 52356 | 48  | 12  | 64  | 2   | 98  | 70  | 52626 | 33  | 132 | 126 | 126 | 97  | 134 | 52896 | 15  | 252 | 3   | 48  | 3   | 48  |
| 52092 | 3   | 224 | 1   | 192 | 7   | 4   | 52362 | 52  | 44  | 26  | 88  | 119 | 238 | 52632 | 63  | 252 | 31  | 248 | 47  | 244 | 52902 | 15  | 252 | 0   | 0   | 0   | 248 |
| 52098 | 14  | 14  | 14  | 15  | 3   | 249 | 52368 | 170 | 85  | 161 | 133 | 178 | 77  | 52638 | 99  | 198 | 3   | 192 | 14  | 112 | 52908 | 4   | 184 | 4   | 184 | 7   | 184 |
| 52104 | 1   | 240 | 4   | 240 | 6   | 246 | 52374 | 253 | 191 | 51  | 204 | 31  | 248 | 52644 | 9   | 144 | 24  | 24  | 27  | 216 | 52914 | 4   | 244 | 4   | 4   | 0   | 244 |
| 52110 | 7   | 255 | 1   | 249 | 0   | 246 | 52380 | 15  | 240 | 3   | 192 | 0   | 0   | 52650 | 28  | 56  | 47  | 244 | 114 | 78  | 52920 | 1   | 180 | 0   | 176 | 0   | 240 |
| 52116 | 1   | 6   | 1   | 216 | 1   | 192 | 52386 | 0   | 0   | 48  | 12  | 78  | 114 | 52656 | 105 | 150 | 33  | 132 | 126 | 126 | 52926 | 0   | 96  | 3   | 255 | 2   | 102 |
| 52122 | 1   | 156 | 0   | 248 | 0   | 112 | 52392 | 98  | 70  | 52  | 44  | 26  | 88  | 52662 | 109 | 182 | 51  | 204 | 31  | 248 | 52932 | 2   | 102 | 3   | 255 | 0   | 0   |
| 52128 | 32  | 224 | 112 | 112 | 240 | 112 | 52398 | 119 | 238 | 170 | 85  | 161 | 133 | 52668 | 47  | 244 | 99  | 198 | 3   | 192 | 52938 | 0   | 62  | 0   | 46  | 2   | 46  |
| 52134 | 159 | 192 | 15  | 128 | 15  | 32  | 52404 | 178 | 77  | 253 | 191 | 59  | 220 | 52674 | 6   | 96  | 15  | 240 | 24  | 24  | 52944 | 3   | 238 | 2   | 61  | 0   | 1   |
| 52140 | 111 | 96  | 255 | 224 | 159 | 128 | 52410 | 23  | 232 | 15  | 240 | 3   | 192 | 52680 | 27  | 216 | 28  | 56  | 47  | 244 | 52950 | 0   | 61  | 0   | 109 | 0   | 44  |
| 52146 | 111 | 0   | 96  | 128 | 27  | 128 | 52416 | 0   | 0   | 14  | 112 | 48  | 12  | 52686 | 114 | 78  | 105 | 150 | 33  | 132 | 52956 | 0   | 60  | 0   | 24  | 28  | 0   |
| 52152 | 3   | 128 | 57  | 128 | 31  | 0   | 52422 | 64  | 2   | 98  | 70  | 52  | 44  | 52692 | 126 | 126 | 97  | 134 | 63  | 252 | 52962 | 96  | 128 | 93  | 64  | 54  | 0   |
| 52158 | 14  | 0   | 6   | 192 | 14  | 240 | 52428 | 26  | 88  | 119 | 238 | 170 | 85  | 52698 | 31  | 248 | 47  | 244 | 99  | 198 | 52968 | 109 | 0   | 91  | 0   | 55  | 0   |
| 52164 | 28  | 112 | 19  | 192 | 7   | 160 | 52434 | 161 | 133 | 178 | 77  | 253 | 191 | 52704 | 255 | 192 | 102 | 64  | 102 | 64  | 52974 | 47  | 64  | 31  | 128 | 3   | 0   |
| 52170 | 55  | 48  | 63  | 176 | 15  | 240 | 52440 | 51  | 204 | 31  | 248 | 15  | 240 | 52710 | 255 | 192 | 0   | 0   | 124 | 0   | 52980 | 7   | 128 | 5   | 192 | 7   | 0   |
| 52176 | 7   | 224 | 27  | 192 | 24  | 32  | 52446 | 3   | 192 | 0   | 0   | 7   | 224 | 52716 | 116 | 0   | 116 | 64  | 119 | 192 | 52986 | 2   | 0   | 5   | 0   | 8   | 128 |
| 52182 | 6   | 224 | 0   | 224 | 14  | 96  | 52452 | 31  | 248 | 0   | 0   | 127 | 254 | 52722 | 188 | 64  | 128 | 0   | 188 | 0   | 52992 | 7   | 128 | 26  | 0   | 23  | 0   |
| 52188 | 7   | 192 | 3   | 128 | 3   | 240 | 52458 | 0   | 0   | 255 | 255 | 156 | 204 | 52728 | 182 | 0   | 52  | 0   | 60  | 0   | 52998 | 13  | 128 | 27  | 64  | 22  | 192 |
| 52194 | 1   | 224 | 0   | 0   | 0   | 240 | 52464 | 156 | 204 | 156 | 204 | 255 | 255 | 52734 | 24  | 0   | 63  | 240 | 12  | 192 | 53004 | 13  | 192 | 11  | 208 | 7   | 224 |
| 52200 | 1   | 248 | 1   | 24  | 3   | 200 | 52470 | 0   | 0   | 63  | 252 | 0   | 0   | 52740 | 12  | 192 | 63  | 240 | 0   | 0   | 53010 | 0   | 192 | 1   | 224 | 1   | 112 |
| 52206 | 3   | 200 | 1   | 248 | 6   | 240 | 52476 | 7   | 224 | 1   | 128 | 0   | 0   | 52746 | 31  | 0   | 29  | 32  | 29  | 32  | 53016 | 1   | 192 | 0   | 128 | 1   | 64  |
| 52212 | 6   | 8   | 1   | 184 | 0   | 56  | 52482 | 7   | 224 | 31  | 248 | 0   | 0   | 52752 | 29  | 224 | 47  | 32  | 32  | 32  | 53022 | 2   | 32  | 1   | 128 | 6   | 8   |
| 52218 | 3   | 152 | 1   | 240 | 0   | 224 | 52488 | 127 | 254 | 0   | 0   | 255 | 255 | 52758 | 47  | 0   | 45  | 128 | 13  | 0   | 53028 | 5   | 212 | 3   | 96  | 6   | 208 |
| 52224 | 0   | 108 | 0   | 239 | 1   | 199 | 52494 | 206 | 102 | 206 | 102 | 206 | 102 | 52764 | 15  | 0   | 6   | 0   | 15  | 252 | 53034 | 5   | 176 | 3   | 112 | 2   | 244 |
| 52230 | 1   | 60  | 0   | 122 | 3   | 115 | 52500 | 255 | 255 | 0   | 0   | 63  | 252 | 52770 | 9   | 152 | 9   | 152 | 15  | 252 | 53040 | 1   | 248 | 0   | 48  | 0   | 120 |
| 52236 | 3   | 251 | 0   | 255 | 0   | 126 | 52506 | 0   | 0   | 7   | 224 | 1   | 128 | 52776 | 0   | 0   | 7   | 192 | 7   | 64  | 53046 | 0   | 92  | 0   | 112 | 0   | 32  |
| 52242 | 1   | 188 | 1   | 130 | 0   | 110 | 52512 | 0   | 0   | 7   | 224 | 31  | 248 | 52782 | 7   | 80  | 7   | 112 | 11  | 208 | 53052 | 0   | 80  | 0   | 136 | 0   | 112 |
| 52248 | 0   | 14  | 0   | 230 | 0   | 124 | 52518 | 0   | 0   | 127 | 254 | 0   | 0   | 52788 | 8   | 0   | 11  | 192 | 11  | 96  | 53058 | 1   | 160 | 1   | 112 | 0   | 216 |
| 52254 | 0   | 56  | 0   | 63  | 1   | 253 | 52524 | 255 | 255 | 103 | 51  | 103 | 51  | 52794 | 3   | 64  | 3   | 192 | 1   | 128 | 53064 | 1   | 180 | 1   | 108 | 0   | 220 |
| 52260 | 7   | 131 | 15  | 243 | 31  | 235 | 52530 | 103 | 51  | 255 | 255 | 0   | 0   | 52800 | 3   | 255 | 3   | 51  | 3   | 51  | 53070 | 0   | 189 | 0   | 126 | 0   | 12  |

|       |     |     |     |     |     |     |       |     |     |     |     |     |     |       |     |     |     |     |     |     |       |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-------|-----|-----|-----|-----|-----|-----|-------|-----|-----|-----|-----|-----|-----|-------|-----|-----|-----|-----|-----|-----|
| 53076 | 0   | 30  | 0   | 23  | 0   | 28  | 53280 | 255 | 255 | 108 | 54  | 45  | 180 | 53484 | 127 | 128 | 127 | 128 | 30  | 0   | 53688 | 15  | 172 | 0   | 0   | 7   | 248 |
| 53082 | 0   | 8   | 0   | 20  | 0   | 34  | 53286 | 45  | 180 | 45  | 180 | 45  | 180 | 53490 | 0   | 0   | 0   | 0   | 0   | 0   | 53694 | 15  | 252 | 0   | 0   | 0   | 0   |
| 53088 | 14  | 0   | 5   | 128 | 14  | 128 | 53292 | 45  | 180 | 45  | 180 | 45  | 180 | 53496 | 0   | 0   | 0   | 0   | 0   | 0   | 53700 | 0   | 0   | 0   | 0   | 0   | 0   |
| 53094 | 27  | 0   | 45  | 128 | 54  | 128 | 53298 | 33  | 132 | 63  | 252 | 127 | 254 | 53502 | 0   | 0   | 0   | 0   | 0   | 0   | 53706 | 0   | 0   | 0   | 0   | 1   | 254 |
| 53100 | 59  | 0   | 189 | 0   | 126 | 0   | 53304 | 2   | 64  | 3   | 192 | 0   | 0   | 53508 | 0   | 0   | 0   | 0   | 7   | 128 | 53712 | 0   | 0   | 1   | 253 | 3   | 250 |
| 53106 | 48  | 0   | 120 | 0   | 232 | 0   | 53310 | 0   | 0   | 255 | 255 | 108 | 54  | 53514 | 31  | 224 | 31  | 224 | 63  | 240 | 53718 | 1   | 253 | 3   | 250 | 0   | 0   |
| 53112 | 56  | 0   | 16  | 0   | 40  | 0   | 53316 | 45  | 180 | 45  | 180 | 45  | 180 | 53520 | 63  | 240 | 63  | 240 | 31  | 224 | 53724 | 1   | 254 | 3   | 255 | 0   | 0   |
| 53118 | 68  | 0   | 1   | 128 | 16  | 96  | 53322 | 45  | 180 | 45  | 180 | 45  | 180 | 53526 | 28  | 224 | 7   | 128 | 0   | 0   | 53730 | 0   | 0   | 0   | 0   | 0   | 0   |
| 53124 | 43  | 160 | 6   | 192 | 11  | 96  | 53328 | 45  | 180 | 33  | 132 | 63  | 252 | 53532 | 0   | 0   | 0   | 0   | 0   | 0   | 53736 | 0   | 0   | 0   | 0   | 24  | 0   |
| 53130 | 13  | 160 | 14  | 192 | 47  | 64  | 53334 | 0   | 14  | 7   | 248 | 62  | 64  | 53538 | 0   | 0   | 0   | 0   | 0   | 0   | 53742 | 4   | 0   | 28  | 0   | 63  | 128 |
| 53136 | 31  | 128 | 12  | 0   | 30  | 0   | 53340 | 3   | 192 | 0   | 0   | 255 | 192 | 53544 | 0   | 0   | 0   | 0   | 0   | 0   | 53748 | 214 | 192 | 43  | 128 | 20  | 0   |
| 53142 | 58  | 0   | 14  | 0   | 4   | 0   | 53346 | 179 | 64  | 161 | 64  | 179 | 64  | 53550 | 1   | 224 | 7   | 248 | 7   | 248 | 53754 | 40  | 0   | 20  | 0   | 168 | 0   |
| 53148 | 10  | 0   | 17  | 0   | 1   | 224 | 53352 | 222 | 192 | 127 | 128 | 0   | 0   | 53556 | 15  | 236 | 15  | 236 | 15  | 252 | 53760 | 0   | 0   | 0   | 0   | 0   | 0   |
| 53154 | 0   | 88  | 0   | 232 | 1   | 176 | 53358 | 63  | 0   | 12  | 0   | 12  | 0   | 53562 | 7   | 248 | 7   | 248 | 1   | 224 | 53766 | 0   | 0   | 0   | 0   | 0   | 0   |
| 53160 | 2   | 216 | 3   | 104 | 3   | 176 | 53364 | 18  | 0   | 18  | 0   | 33  | 0   | 53568 | 0   | 0   | 0   | 0   | 0   | 0   | 53772 | 6   | 0   | 1   | 0   | 7   | 128 |
| 53166 | 11  | 208 | 7   | 224 | 3   | 0   | 53370 | 33  | 0   | 97  | 128 | 97  | 128 | 53574 | 0   | 0   | 0   | 120 | 1   | 206 | 53778 | 15  | 224 | 53  | 176 | 10  | 224 |
| 53172 | 7   | 128 | 14  | 128 | 3   | 128 | 53376 | 63  | 240 | 59  | 48  | 58  | 16  | 53580 | 1   | 254 | 3   | 255 | 3   | 255 | 53784 | 20  | 0   | 0   | 0   | 0   | 0   |
| 53178 | 1   | 0   | 2   | 128 | 4   | 64  | 53382 | 59  | 48  | 61  | 240 | 31  | 224 | 53586 | 3   | 255 | 1   | 254 | 1   | 254 | 53790 | 0   | 0   | 0   | 0   | 0   | 0   |
| 53184 | 0   | 56  | 1   | 6   | 2   | 186 | 53388 | 0   | 0   | 15  | 192 | 3   | 0   | 53592 | 0   | 120 | 0   | 0   | 0   | 0   | 53796 | 0   | 0   | 0   | 0   | 0   | 0   |
| 53190 | 0   | 108 | 0   | 182 | 0   | 218 | 53394 | 3   | 0   | 4   | 128 | 4   | 128 | 53598 | 0   | 0   | 0   | 0   | 0   | 0   | 53802 | 0   | 0   | 3   | 128 | 10  | 64  |
| 53196 | 0   | 236 | 2   | 244 | 1   | 248 | 53400 | 4   | 128 | 4   | 128 | 12  | 192 | 53604 | 0   | 0   | 0   | 0   | 0   | 0   | 53808 | 5   | 96  | 2   | 248 | 13  | 108 |
| 53202 | 0   | 192 | 1   | 224 | 3   | 160 | 53406 | 12  | 192 | 15  | 252 | 6   | 184 | 53610 | 0   | 0   | 0   | 0   | 127 | 128 | 53814 | 0   | 56  | 0   | 0   | 0   | 0   |
| 53208 | 0   | 224 | 0   | 64  | 0   | 160 | 53412 | 2   | 176 | 6   | 184 | 13  | 220 | 53616 | 0   | 0   | 191 | 128 | 95  | 192 | 53820 | 0   | 0   | 0   | 0   | 0   | 0   |
| 53214 | 1   | 16  | 255 | 255 | 108 | 54  | 53418 | 7   | 248 | 0   | 0   | 3   | 240 | 53622 | 191 | 128 | 95  | 192 | 0   | 0   | 53826 | 0   | 0   | 0   | 0   | 0   | 0   |
| 53220 | 45  | 180 | 45  | 180 | 45  | 180 | 53424 | 0   | 192 | 0   | 192 | 0   | 192 | 53628 | 127 | 128 | 255 | 192 | 0   | 0   | 53832 | 0   | 0   | 0   | 0   | 0   | 64  |
| 53226 | 45  | 180 | 45  | 180 | 45  | 180 | 53430 | 0   | 192 | 0   | 192 | 0   | 192 | 53634 | 0   | 0   | 0   | 0   | 0   | 0   | 53838 | 0   | 48  | 0   | 120 | 0   | 254 |
| 53232 | 45  | 180 | 33  | 132 | 63  | 252 | 53436 | 1   | 224 | 1   | 32  | 3   | 255 | 53640 | 0   | 0   | 0   | 0   | 0   | 0   | 53844 | 3   | 91  | 0   | 174 | 1   | 64  |
| 53238 | 0   | 4   | 0   | 24  | 0   | 224 | 53442 | 3   | 55  | 2   | 23  | 3   | 55  | 53646 | 31  | 224 | 0   | 0   | 43  | 240 | 53850 | 0   | 0   | 0   | 0   | 0   | 0   |
| 53244 | 7   | 96  | 28  | 224 | 255 | 255 | 53448 | 3   | 239 | 1   | 254 | 0   | 0   | 53652 | 53  | 240 | 43  | 240 | 53  | 240 | 53856 | 0   | 0   | 0   | 0   | 0   | 0   |
| 53250 | 108 | 54  | 45  | 180 | 45  | 180 | 53454 | 0   | 252 | 0   | 48  | 0   | 48  | 53658 | 0   | 0   | 31  | 224 | 63  | 240 | 53862 | 0   | 0   | 0   | 0   | 0   | 0   |
| 53256 | 45  | 180 | 45  | 180 | 45  | 180 | 53460 | 0   | 72  | 0   | 72  | 0   | 72  | 53664 | 0   | 0   | 0   | 0   | 0   | 0   | 53868 | 2   | 0   | 12  | 0   | 30  | 0   |
| 53262 | 45  | 180 | 45  | 180 | 33  | 132 | 53466 | 0   | 72  | 0   | 204 | 0   | 204 | 53670 | 0   | 0   | 0   | 0   | 0   | 0   | 53874 | 127 | 0   | 218 | 192 | 117 | 0   |
| 53268 | 63  | 252 | 0   | 14  | 7   | 248 | 53472 | 30  | 0   | 127 | 128 | 127 | 128 | 53676 | 0   | 0   | 7   | 248 | 0   | 0   | 53880 | 2   | 128 | 0   | 0   | 0   | 0   |
| 53274 | 62  | 64  | 3   | 192 | 0   | 0   | 53478 | 255 | 192 | 223 | 192 | 223 | 192 | 53682 | 15  | 212 | 15  | 172 | 15  | 212 |       |     |     |     |     |     |     |

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# HAPPY CHRISTMAS

by A Heptonstall

**H**appy Christmas is a computerised Christmas greeting card. It displays a row of houses and a sky filled with stars, and then moves Santa on his sleigh across the screen, accompanied by the sound of festive music. The program uses the *ENVE-*

*LOPE* command to simulate the sound of sleigh-bells. It then prints up a 'Happy Christmas' message. (This message is held in *PROCmessage* at the end of the program, and can be changed so that it wishes anyone a 'Happy Christmas'.)

The program uses the *ADVAL (-6)*

command to call *PROCjingle* only when no note is currently being played, ie, when *ADVAL (-6) <> 0* so that the sleigh is not stopped by the music being played.

Program notes and the rest of the listing next week.

```

10REM ... Happy Christmas ...
20REM ... A.B.Heptonstall ...
40REM
50MODE 2
60PROCdefine
70PROCstars
80PROChouses
90PROCsanta
100PROCmessage
110REPEAT
120UNTIL forever
130:
140DEFFPROCdefine
150RESTORE 950
160forever=0
170C%=1
180ENVELOPE 1,1,0,0,0,1,1,1,30,1,-1,-2,120,126
190VDU 23;8202;0;0;0;
200VDU 23,224,0,0,0,0,0,1,3,3,2
210VDU 23,225,0,0,0,0,0,248,252,62,62
220VDU 23,226,0,0,0,0,0,0,15,27
230VDU 23,227,7,7,0,0,0,0,128,128
240VDU 23,228,63,125,127,127,127,126,63,12,12
250VDU 23,229,0,0,0,192,0,0,0,0
260VDU 23,230,3,15,31,31,31,31,31,31
270VDU 23,231,192,224,240,240,240,240,240,240
280VDU 23,232,63,63,63,63,63,63,63,63
290VDU 23,233,192,252,63,3,0,12,12,252
300VDU 23,234,0,0,0,0,255,0,0,0,0
310VDU 23,235,31,255,4,8,16,33,66,255
320VDU 23,236,240,255,33,66,132,8,16,255
330VDU 23,237,63,255,8,16,33,66,132,255
340VDU 23,238,252,255,66,132,8,16,32,192
350VDU 23,239,77,50,20,36,40,252,244,255
360VDU 23,240,0,0,0,0,192,63,31,63,63
370VDU 23,241,0,0,0,0,255,255,255,255
380VDU 23,242,255,252,48,48,240,248,248,248
390VDU 23,243,63,31,8,16,32,32,32,16
400VDU 23,244,255,255,36,24,40,68,130,65
410VDU 23,245,248,240,32,16,8,8,8,16
420VDU 23,246,0,0,0,0,1,7,31,127
430VDU 23,247,0,0,24,126,255,255,255,255
440VDU 23,248,0,0,0,0,128,224,248,254
450VDU 23,249,127,64,64,64,64,64,127,127
460VDU 23,250,255,255,255,255,255,129,129,129
470VDU 23,251,254,2,2,2,2,2,254,254
480VDU 23,252,64,64,64,64,64,127,127,0
490VDU 23,253,129,129,129,129,129,129,129,0
500VDU 23,254,2,2,2,2,2,2,254,254,0
510VDU 23,255,126,126,126,126,126,126,126,126
520ENDPROC
530:
540DEFFPROCstars
550FOR RX=0 TO 100
560X%=RND(1280)
570Y%=RND(788)+300
580MOVE X%,Y%
590DRAW X%,Y%
600NEXT RX
610ENDPROC
620:
630DEFFPROChouses
640VDU 5
650FOR RX=0 TO 1088 STEP 213
660MOVE RX,120
670VDU 18,0,1,246,247,248,8,8,10,18,0,2,255,8,8,18,0,4,249
,250,251,8,8,8,10,252,253,254,8,8,18,0,2,255
680NEXT RX
690VDU 4
700ENDPROC
710:
720DEFFPROCsanta
730FOR RX=0 TO 11
740FOR SX=7 TO 0 STEP -7
750COLOUR SX
760PRINT TAB(RX,13);
770VDU 32,32,224,225,8,8,8,10,226,227,228,229,32,32,32,239
,8,8,8,8,8,8,8,10,230,231,232,233,234,240,241,242,8,8,8,8,
8,8,8,8,10,235,236,237,238,32,243,244,245
780IF SX=7 THEN PROCtune
790NEXT SX
800NEXT RX
810ENDPROC
820:
830DEFFPROCtune
840FOR CX=1 TO 1500
850IF ADVAL(-6)<>0 AND CX<>0 THEN PROCjingle
860NEXT CX
870ENDPROC
880:
890DEFFPROCjingle
900READ CX,DX,EX
910SOUND 1,1,CX,EX
920SOUND 2,1,DX,EX
930ENDPROC
940:
950DATA 117,101,5,117,101,5,117,101,10,117,101,5,117,101,5
,117,101,10
960DATA 117,101,5,129,117,5,101,69,8,109,81,2,117,101,20
970DATA 121,89,5,121,89,5,121,89,8,121,89,2,121,101,5,117,
101,5,117,101,5,117,101,2,117,101,3
980DATA 117,77,5,109,77,5,109,77,5,117,77,5,109,81,10,129,
97,10
990DATA 117,101,5,117,101,5,117,101,10,117,101,5,117,101,5
,117,101,10
1000DATA 117,101,5,129,117,5,101,69,8,109,81,2,117,101,20
1010DATA 121,89,5,121,89,5,121,89,8,121,89,2,121,101,5,117,
101,5,117,101,5,117,101,2,117,101,3
1020DATA 129,81,5,129,81,5,121,89,5,109,97,5,101,101,20
1030DATA 81,53,5,117,101,5,109,81,5,101,69,5,81,53,15,81,53
,2,81,53,3
1040DATA 81,53,5,117,101,5,109,81,5,101,69,5,89,73,20
1050DATA 89,73,5,121,109,5,117,101,5,109,97,5,97,81,20
1060DATA 129,97,5,129,81,5,121,89,5,109,97,5,117,101,20
1070DATA 81,53,5,117,101,5,109,81,5,101,69,5,81,53,15,81,53
,2,81,53,3
1080DATA 81,53,5,117,101,5,109,81,5,101,69,5,89,73,20
1090DATA 89,73,5,121,109,5,117,101,5,109,97,5,129,97,5,129,
97,5,129,97,5,129,97,2,129,97,3
1100DATA 137,81,5,129,81,5,121,89,5,109,97,5,101,101,20
1110DATA 0,0,0
1120:
1130DEFFPROCmessage
1140COLOUR 13
1150PRINT TAB(2,1);"Happy Christmas"
1160COLOUR 14
1170PRINT TAB(7,3);"from"
1180COLOUR 12
1190PRINT TAB(1,5);"Popular Computing"
1200COLOUR 10
1210PRINT TAB(6,7);"Weekly"
1220ENDPROC

```

# THE SECRET DIARY OF ADRIAN MOLE AGED 13<sup>3</sup>/<sub>4</sub>

Friday October 11th

I learned today that I have become the subject of a computer game. It has been written by somebody called Level 9 (perhaps they live in a multi-storey car park) and apparently it contains more than 200 kilos of text which Brainbox Henderson says is a lot. The object of the game is to make me popular with everyone, so I expect Gran will get me one for Christmas even though it does cost £9.95. But I don't suppose anyone will get me a Commodore, Spectrum, Amstrad, BBC, MSX or Atari to play it on.

Wednesday December 25th  
CHRISTMAS DAY

Mosaic who have published my diary as a computer game have sent me some reviews. They're dead brilliant!! Pandora says I should keep notes of the best bits so I can use them on the back cover of my next best-seller. I thought I'd note them down today while we're still waiting for the stupid turkey to defrost.

## My reviews

'A Crash Smash' 'Mole is brilliant and so is this game' Crash

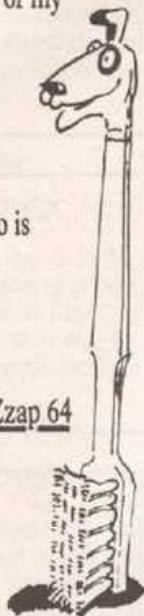
'Ten out of ten' Commodore User

'Pete Austin - The man's a genius! ...

I reckon this is an important program' Zzap 64

'Destined to appeal to all ages is this one' CTW

'This is a game you should get-right now' Amix



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SEASON'S GREETINGS TO ALL OUR CUSTOMERS

# READERS' POLL

It's big; it's bright; it's mind-boggling; it's back. The *Popular Computing Weekly* Readers' Poll has returned for another triumphant run.

Cast your votes below for your own best and worst of 1985. If you don't feel qualified to answer a particular section, it doesn't matter, just leave that one blank. Entries should reach us at the address below no later than Thursday January 9. The results will be published in the issue dated January 23.

## 1 Program of the Year (overall)

Last year's winner - *Knight Lore*

Which title this year has had you gasping at its perfection, stunned at its possibilities and abilities? A Troll trouncing or alien bashing game, perhaps, or a great utility or application that helped you get the very best out of your micro.

## 2 Arcade Game of the Year

Last year's winner - *Knight Lore*

Which one was the most action-packed, fast-moving, graphically astounding, nerve shredding arcade program of the last 12 months? Are you now a nervous wreck? Which game was responsible?

## 3 Adventure of the Year

Last year's winner - *Lords of Midnight*

Atmosphere, involvement, sophistication, plot - which program mixed all these ingredients into the perfect Adventure cocktail?

## 4 Business Package of the Year

Last year's winner - *Tasword 2*

The software company may swear blind that its wordprocessor/spreadsheet/accounts program is just the thing your humble home micro needs, but... Which home business program actually helped you in the last year?

## 5 Utility Program of the Year

Last year's winner - Quickshot II joystick

Games designers - particularly adventure writers - have been in the news in 1985. More and more implementations of languages are becoming available for the home machines. Icons and other user friendly paraphernalia popped up all over the place. Which one did you find most useful?

## 6 Peripheral of the Year

Last year's winner - *The Quill*

Printers, disc drives, light pens, joysticks, modems, even ZX microdrives. The list of peripherals has grown enormously in the past year.

## 7 Best Software House

Last year's winner - Ulimite

Whose programs do you look for first on the shop shelves? Which company do you feel is bringing out consistently good titles at a fair price. Are their products always reliable? Are they helpful if you have any problems!

# READERS' POLL

## 8 *Best Programmer*

Last year's winner – Matthew Smith

The one whose programs you know you're going to like as soon as you see the author's credit on the inlay. A wacky individualist or a technical wizz, who do you choose?

## 9 *Most Promising New Company*

Last year's winner – Beyond

Of the companies which first emerged during 1985, which one do you think most deserves to go on to greater things in 1986?

## 10 *Overrated Software House*

Last year's winner – Imagine

The biggest deals. The flashiest packaging. Enormous adverts. The most disappointing contents. Which company do you most feel gets big coverage but always lets you down with the programs?

## 11 *Computer Program you most regret buying*

Not the company this time, but a highly hyped title you feel failed to live up to even minimal expectations. Speak your mind and name names.

## 12 *Most Exciting Computer*

Last year's winner – Amstrad CPC464

Not necessarily your own, but which new micro would you buy if only you had the cash? Or it could be the brand new micro you bought, and have never regretted owning for an instant.

## 13 *Worst Computer*

Last year's winner – MSX

In this section, it doesn't even have to be a 1985 release! But it certainly makes you feel it's a waste of time getting it down from the attic where it's been all its life. Or perhaps you were sensible enough not to buy it in the first place, and giggled to yourself when your friends bought one.

## 14 *Worst Licensing Deal*

Last year's winner – *War of the Worlds*

Licensing deals from the movies, sporting events, TV personalities et al continue to appear in vast numbers. But some programs don't really live up to the licence, and some fall dismally short of the quality you'd expect from the endorsement. Some don't appear to have anything to do with the original whatsoever. . .

All you have to do now is fill out the form here, and then send the whole lot off to Readers Poll, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7PP.

Please make sure your entry reaches us by Thursday, January 9.

Name .....

Micro/micros owned (if any) .....

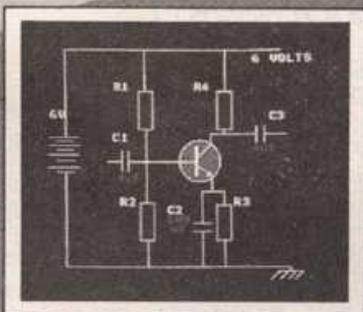
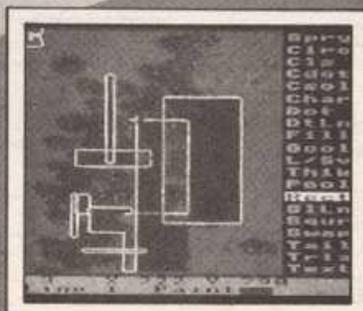
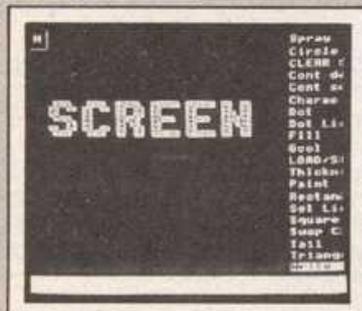
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# TOUCH PAD SCREEN ARTIST

## SCREEN ARTIST

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# CHRISTMAS CARD

by R Braverman and J Tarrant

listen to a three-part arrangement of *We Wish You A Merry Christmas*, watch snowflakes fall gently around the Christmas tree.

The program itself occupies about 6½ kB of Ram, and consists largely of data statements containing the musical information. Because of the large number of data elements, we have included a pre-program (Lines 10-90) which verifies the data. This is automatically deleted when the data is confirmed to be correct.

All three sound channels are used in the musical arrangement. *Rendezvous* is provided between the channels, and short breaks are used to distinguish consecutive notes of the same frequency. Notes are specified as channel status, pitch, and duration; and are read from the data statements three at a time. This ensures that the sound channels are kept busy while the program *gosubs* to the moving graphics routine.

The snowflakes are chosen at random

and are moved down the screen by reading an array. *p0*, giving the current snowflake position, which is then updated and a new snowflake printed. To ensure that snowflakes do not print over the Christmas tree, the bottom of the screen is redefined using an elliptical envelope. This is effected by the user defined function in Line 160.

The tree is drawn using the usual graphics commands, but is made simpler by the use of *for ... next* loops permitted by regular symmetry of the tree. In order to get maximum effect from both green and colour monitor screens, two distinct versions of *ink* statements are given in Line 210. You should use whichever is appropriate. Part two next week.

If you would prefer not to type the listing, you can obtain a tape copy by sending a blank cassette, together with an SAE and £1 to 217 Whitehorse Road, Croydon CR0 2LH.

There have been Christmas cards. There have been musical Christmas cards. And now here is the computerised Christmas card! As you

```

100 REM ***** COMPUTERIZED CHRISTMAS CARD FOR AMSTRAD CPC464 *****
110 REM ***** BY RACHEL BRAVERMAN & JON TARRANT *****
120 :
130 REM ***** DEFINE PROGRAM PARAMETERS *****
140 DEFSTR a:DEFINT b-y:DEFREAL z
150 n=30:jump=-8:base=20:top=410:wide=640-20:height=400-base:ea=300:eb*276:
    tx=20*16-2:ty=400-(11*16):zx=-4*16:zy=-4*16:rx=2*16:ry=0:bx=0:by=-2*16:
    a1=CHR$(238):a2=CHR$(202)
160 DEF FNzy(zx)=(eb*eb)*(1-(zx*zx)/(ea*ea))
170 DIM p(n,1)
180 :
190 REM ***** SET UP GRAPHICS REQUIRED *****
200 MODE 1
210 REM for colour screen use INK 0,0:INK 1,0:INK 2,18:INK 3,6: BORDER 1
    for green screen use INK 0,0:INK 1,0:INK 2,1:INK 3,8,10: BORDER 0
220 PRINT CHR$(22)+CHR$(1):
230 ORIGIN 318,0:TAG
240 :
250 REM ***** INITIALIZE SCREEN DISPLAY *****
260 FOR s=0 TO n
270   x=INT(RND(1)*(wide+1))-318:zx=ABS(x):y=INT(RND(1)*(height+1))+base
280   IF (y*y)<FNzy(zx) THEN s=s+1 ELSE PLOT x,y,1:PRINT "#":p(n,0)=x:p(n,1)=y
290 NEXT s
300 INK 1,26
310 :
320 REM ***** DRAW CHRISTMAS TREE *****
330 ORIGIN 0,0
340 PLOT 19.5*16-2,400-10.25*16,1:PRINT a1:
350 FOR dv=16 TO 24 STEP 4
360   PLOT (15.5-((dv-16)/2))*16-2,400-(dv-1)*16,3:PRINT a2:
370   PLOT (23.5+((dv-16)/2))*16,400-(dv-1)*16,3:PRINT a2:
380 NEXT dv
390 FOR dv=-1 TO 1 STEP 2
400   PLOT tx,ty,2
410   FOR seg=1 TO 3 STEP 1
420     DRAWR sx*dv,ty:DRAWR rx*dv,ry
430   NEXT seg
440   DRAWR 2.25*rx*dv,ty:DRAWR bx,by
450 NEXT dv
460 PLOT 19*16,400-(14*16),1:PRINT "ME":
470 PLOT 18*16,400-(15.5*16),1:PRINT "WISH":
480 PLOT 17.5*16,400-(17*16),1:PRINT "YOU A":
490 PLOT 17.5*16,400-(19.5*16),3:PRINT "MERRY":
500 PLOT 15.5*16,400-(21.5*16),3:PRINT "CHRISTMAS":
510 ORIGIN 318,0
520 :
530 REM ***** MAIN PROGRAM LOOP *****
540 progrunning=1
550 WHILE progrunning
560   RESTORE 800
570   f1=1
580   WHILE f1<>0
590     READ f1,f2,f3,f4,f5,f6,f7,f8,f9
600     SOUND f1,f2,f3*1.2:SOUND f4,f5,f6*1.2:SOUND f7,f8,f9*1.2
610     SOSUB 690
620   WEND
630   FOR d=0 TO 1200 STEP 1
640     REM *** delay loop ***
650   NEXT d
660 WEND
670 STOP
680 :

```

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Many machine code listings are given, starting with a simple sorting routine which is developed to a full database program.

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## THE HILL

by A P Morris

**A**s the festive season approaches, we present a little light relief for our QL cognoscenti - and how more seasonal can you get - battering your opponents brains out with a howitzer.

The Hill is a two player game in which you are presented with the classic problem - that is, to kill them before they kill you.

Allot an angle, trust to your shot and try to hit the house on the other side of

the hill. And just to make things fair, they'll be doing exactly the same. The program is fully Remmed, so should be quite understandable.

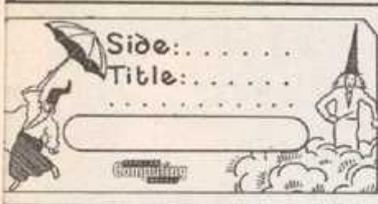
Part Two will be printed next week, meanwhile, good luck!

```

100 REMark #####
110 REMark ### A.P.MORRIS ###
120 REMark ### THE HILL ###
130 REMark ### -- QL -- ###
140 REMark #####
150 :
160 DIM player$(2,10),scores(2)
170 RANDOMISE:scores(1)=0:scores(2)=0
180 grav=4.9:bofs=163712:q=15
190 set_window
200 the_game
210 :
220 REMark -----
230 DEFine PROCedure the_game
240 names
250 pl=RND(1 TO 2)
260 IF pl=1 THEN
270 first=1:second=2:stp=1
280 ELSE
290 first=2:second=1:stp=-1
300 END IF
310 :
320 REPEAT hills
330 round=0
340 hill
350 :
360 REPEAT until_hit
370 round=round+1:AT#4,0,18:PRINT#4,round
380 FOR turns=first TO second STEP stp
390 pl=turns:STRIP#4,6
400 AT#4,0,(7+22*(pl-1))-LEN(player$(pl))
*(pl-1)
410 PRINT#4,player$(pl)
420 REPEAT values
430 AT#4,2,0:CLS#4,2
440 BEEP 1000,30:AT#4,3,0:INPUT#4,
"Input Angle? ",an$
450 IF an$="" THEN GO TO 440
460 ang=an$
470 BEEP 1000,30:AT#4,4,0:INPUT#4,
"Input Velocity? ";ve$
480 IF ve$="" THEN GO TO 470
490 vel=ve$
500 AT#4,4,25:PRINT#4;'OK? (y/n)'
510 ok$=INKEY$(-1)
520 IF ok$='y' THEN EXIT values
530 END REPEAT values
540 IF pl=2 THEN ang=180-ang
550 cl=1
560 shoot 7,ang,vel,wind
570 IF colv=6 THEN EXIT until_hit
580 flare 3:BEEP 0,q,q,q,q,q,q:PAUSE 100
590 RECOL#5,0,1,2,3,4,5,6,1
600 wind_title
610 cl=0:colv=1:BEEP:flare 1:house
620 INK#4,3:IF turns=2 THEN ang=180-ang
630 AT#4,2,((turns-1)*21+1):PRINT#4,ang;"
Deg ";vel;" mps"
640 INK#4,1:RECOL#4,0,1,2,3,4,5,5,7
650 END FOR turns
660 END REPEAT until_hit
670 :
680 AT#4,1,0:CLS#4,2
690 IF rx>100 THEN scores(1)=scores(1)+1:first
=1:second=2:stp=1
700 IF rx<100 THEN scores(2)=scores(2)+1:first
=2:second=1:stp=-1
710 AT#4,0,1:PRINT #4:scores(1)
720 AT#4,0,33:PRINT#4:scores(2)
730 flare 2:BEEP 0,q,q,q,q,q,q
740 RECOL#4,0,1,2,3,4,5,5,7
750 CSIZE#5,3,1:FLASH#5,1:AT#5,2,12:
PRINT#5,"HIT!"
760 PAUSE 100:BEEP:PAUSE 150:CSIZE#5,2,0:
FLASH#5,0
770 END REPEAT hills
780 :
790 END DEFine the_game
800 REMark -----
810 DEFine PROCedure shoot (c,a,v,w)
820 INK#5,c:AT#4,4,25:STRIP#4,7:INK#4,2:
PRINT#4;'Abort? (<*)':STRIP#4,6:INK#4,1
830 tsin=SIN(RAD(a))
840 tcos=COS(RAD(a))
850 FOR time=.1 TO 40 STEP .1
860 y=(v*time*tsin)-(grav*time*time)
870 x=(v*time*tcos)-(w*time*time)
880 abort$=INKEY$(0):IF abort$='*'
THEN EXIT time
890 IF cl=1 THEN BEEP (y*2),(y/2)
900 hit x,y
910 POINT#5,x+osx,y+osy
920 IF y+osy<10 THEN EXIT time
930 IF colv=6 OR colv=4 THEN
IF y<150 AND (rx)>40 AND rx<455)
THEN EXIT time
950 END IF
960 END FOR time
970 BEEP
980 END DEFine shoot
990 REMark -----
1000 DEFine PROCedure hit(x,y)
1010 osx=30:osy=11
1020 IF pl=2 THEN osx=300
1030 rx=INT((x+osx)*1.31+36)
1040 ry=INT(y+osy+(59-((y+9+osy)DIV 25)))
1050 mpos=bofs+(rx DIV 8)*2-ry*128
1060 hi=PEEK(mpos) DIV (4^(3-(rx DIV 2) MOD 4))

```

# Micro Magic



Popular Computing Weekly

# Micro Magic



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- 4) If you have won a prize you can claim it by filling in the coupon on the back of your special **Micro Magic** card. Then send

```

1 REM WEEK 12
5 PRINT "Input your personal Micro Magic number"
10 INPUT X
15 FOR Z=1 TO 3
20 LET W=2 * (X+27)
30 LET W=2 * Z
40 LET Y=2 * W + 1050
45 NEXT Z
46 PRINT Y
55 IF Y=251896 THEN GOTO 70
60 PRINT "Your matching Micro Magic number is" ; Y
61 PRINT "Better luck next time!"
65 GOTO 60
66 STOP
70 PRINT "Your matching Micro Magic number is" ; Y
71 PRINT "You have won an Amstrad 5128!"
75 GOTO 70
76 STOP
    
```

Micro Magic: Week 12 Program listing

the completed card off to: **Micro Magic, Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP.**

Don't forget to fill in both your name and address, and also both your winning **Micro Magic** answer from this week and your special **Micro Magic** number.

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## Screen Dump on Amstrad by K Fairley

Having just bought myself an Epson compatible printer (the Brother M-1009), my first thought was to try a screen dump. The attempt I made at writing one (in Basic) was reasonably successful but very slow and since my knowledge of machine code is extremely limited my only resort was someone else's program. So out came my back issues of various magazines and the search for a machine code screen dump program began. The programs that I did find were fine in their way but limited to black and white.

Just when it looked like I would have to buy a program I remembered that there was a printing routine on my copy of *Mini Office*. I recorded the machine code part of it on to a blank tape, loaded in a screen and called the routine. It worked perfectly. In Mode 2, black and white. In Mode 1, black, white and two shades of

```

5 REM disc                5 REM tape
10 MEMORY &5f37          10 MEMORY &5f37
20 ITAPE.IN:DISC.OUT    20 LOAD "GRAPH",&5f38
30 LOAD "GRAPH2",&5f38  30 POKE &5f39,2
40 POKE &5f39,2         40 SAVE "DUMP",
50 SAVE "DUMP",          B,&5f38,1024
                        B,&5f38,1024
    
```

grey. In Mode 0, black, white, two shades of grey and 12 sets of dot patterns for the different pens. The way I did it was as follows.

Those of you who have a disc drive in program one, those with tape type in program two. But first you must put your original copy of *Mini Office* in your tape recorder and type in *Cat*. Stop the tape when it prints up Graph2. Rewind it

slightly until you are at the start of Graph2 block 1, then run either program one or program two.

Once you have done the above it is just a matter of loading "DUMP",&5f38, then loading the screen you wish to dump. After that simply CALL &5f38 and sit back. If, however, you have an Amstrad DMP1 printer then change the poke to Poke &5f39,1.

## Dump Procedure on QL by Endaff Bowen

These procedures load the GPrint ('lodump' - the dump routine) off *Easel*. This dump is compatible with all printers of the FX-80 type (I use a Memotech DMX80 printer). The commands and the program follow, merge the procedures with your own program.

**lodump** - to load the M/C program off *Easel*

**Dump** - to transfer screen to printer.

```

1 REMark ## To Load dump (lodump) & to dump (dump) ##
2 DEFINE PROCEDURE lodump
3 BORDER 1,2:CLS:CLS0:FLASH 0:CSIZE 2,1:AT 0,2:PRINT "PUT 'EASEL' DISK IN DRIVE TWO ?":CSIZE 0,0:PAPER
0:INK 7:AT 3,0:PRINT "PRESS ANY KEY TO LOAD'LODUMP' PROGRAM":PAUSE -1
4 start=RESPR(300)
5 AT 7,5:CSIZE 0,0:FLASH 0:PRINT "LOADING GPRINT OFF EASEL.":BEEP 0,2,50,50,50,7,7:AT 8,2:PRINT
"TO DUMP TO PRINTER ENTER ":AT 8,
27:INK 2:FLASH 1:PRINT " DUMP ":FLASH 0:AT 10,5:PRINT "PROC'S FROM LINE 1 TO 10.":INK 6:AT 12,4:PRINT
"DO NOT ERASE LINES 1 TO 10 !"
6 LBYTES mdv2_gprint_prt,start:AT 15,13:CSIZE 3,1:FLASH 1:BEEP 15000,255,-200,20,-200,20,9,0:INK 20:PRINT
"Loaded."
7 END DEFINE lodump
8 DEFINE PROCEDURE dump
9 BEEP:OPEN #3,ser1:PRINT #3,"DUMPING SCREEN TO PRINTER:~":PRINT #3:CLOSE #3:CALL start,0,0,0,0,0,0,0,0
10 END DEFINE dump
    
```

## Conversion Routines on Spectrum by G Bottomley

These Hex to Decimal and Decimal to Hex Routines are not limited to any special length of Hex or Decimal number.

Hex to Decimal conversion is fairly easy since the length of the Hex string can be found using 'LEN H\$'. The Dec to Hex conversion is more difficult since there is no similar function for the length of decimal numbers.

Logarithms are used to find the number of Base 16 'numbers' in the decimal number.

This would fail when the value of D was 0, since LN 0 is not possible. This is overcome by using the unusual action of the 'OR', as used by Sinclair.

This can be understood as - LN (D UNLESS D=0 THEN 1)

```

10>INPUT "DEC D OR HEX H OR ST
OP S";IS: IF IS="D" THEN INPUT "
INPUT DEC ";D: PRINT "DEC/HEX ";
D;"D=";: GO SUB 9920: PRINT H$;
H": GO TO 10
20 IF IS="S" THEN STOP
30 INPUT "INPUT HEX ";H$: PRIN
T "HEX/DEC ";H$;"H";: GO SUB 990
0: PRINT "=";D;"D": GO TO 10
40 STOP
9900 REM
#HEX TO DEC CONVERSION#
#INPUT IS H$*RETURN WITH D#
9910 LET D=0: FOR I=1 TO LEN H$:
LET E=CODE H$(I)-48-7*(H$(I)>"9
")-32*(H$(I)>"F"): LET D=16*D+E:
NEXT I: RETURN
9920 REM
#DEC TO HEX CONVERSION#
#INPUT IS D*RETURN WITH H$#
9930 LET H$="": FOR I=1 TO 1+INT
(LN (D OR (D=0))/LN 16): LET C=
D-16*INT (D/16): LET H$=CHR$(C+
48+7*(C>9))+H$: LET D=INT (D/16)
: NEXT I: RETURN
    
```



## Christmas Hits

**T**his week I'm giving my rundown on the best of the bewildering range of new releases out for Christmas. There seem to be more top quality games available for more machines than ever before and I apologise to anyone that is left out. I've tended to concentrate only on those that I have seen finished.

Thankfully game conversions are getting better, but remember that some releases are designed to exploit the features of a given machine and cannot be converted well. Unless you hear otherwise, I would advise you to treat conversions with suspicion.



Some releases are too late for inclusion here, and some are being delayed to get more individual attention after Christmas, I suspect that this includes the promised new Miner Willy game, so we may have another roundup when the dust has settled.

Platform games in general have become much less common but there are still outstanding ones around. US Gold's *Impossible Mission* for the Spectrum exceeds all reasonable expectations and shouldn't be missed. Another goodie is *Costa Capers* on Firebird's new Hot label. Amstrad/Commodore conversions of all Hot games can be expected. The best of the first releases is *Rasputin*, a *Knight Lore* derivative - a visual feast with a terrific atmosphere. Another brilliant 3D game is Gargoyle's *Sweevo's World* - again better, and much funnier, than *Knight Lore* and available for the same micros as the excellent *Marsport*, Spectrum and Amstrad.

Apart from *Costa Capers* there are plenty of other Firebird releases around, includ-

ing the obligatory Spectrum *Elite*, out for the Amstrad in January, and anyone who wants a budget game would be mad not to go for their Super Silver range, especially *Chimera* and *Willow Pattern*. Mastertronic has just bought out an equivalent medium price range called MAD games and *The Last V8* for the Commodore is superb.

Durell has a couple of surprise new Spectrum games - both *Saboteur*, which is like a cross between *Impossible Mission* and *Exploding Fist*, and *Critical Mass*, a graphically superb 3D space game but one which may ultimately lack plot. Commodore, and eventually Amstrad, versions are expected.

CRL's *Tau Ceti* is another Spectrum space game that has everyone raving, and coming slightly more down to earth no-one should miss *Tomahawk* from Digital Integration.

I hesitate to dismiss Micropower's *Doctor Who* (almost every micro) as a platform game, which it looks like, since it has something like five times more plot than the excellent *Castle Quest*.

There will probably be two new MikroGen games out when you read this, *Battle of the Planets* and *Three Weeks in Paradise*. Feelings about the latter depend on whether you are tired of the Wally

strained. Superb cartoon quality animation and humour can also be found in Microsphere's *Back to Skool* follow-up to *Skooldaze*.

The Commodore is currently dominated by US releases, and two platform games just out are *Goonies* and *Zorro*. More original American games include *Fight Night*, *Winter Games* and some of Ariolasoft's new destruction games. Indeed, there are so many that we haven't begun to see them all. The most unusual must be Activision's *Little Computer People*.



Thankfully British companies can offer comparable quality for the machine. Don't miss the Commodore conversion of *Revs* when it appears. Also the Ultimate games, Daley's *Supertest*, *Monty on the Run* (brilliant music), *Wizardry*, Beyond's *Enigma Force*, and *Quake Minus One* on its new Monolith label all spring to mind. Beyond's *Spy vs Spy* is also just out for the Amstrad, an essential buy.

The Amstrad version of US Gold's *Bounty Bob* is adequate rather than inspired. It is also very hard, but does have most of the wacky features of the original. I prefer *Bruce Lee*, which should be looked on as a platform game

every version. I find this furiously addictive but some find it frustratingly hard. This and *Fist* are now released for the BBC.

It's nice to see the BBC being included in the conversions circuit and Imagine has also just released *Hypersports* and *Yie Ar Kung Fu*. Choosing between the latter and *Fist* would make most people weep. If you really can't afford both then I tip *Fist* on the basis of the two player combat which adds enormously to the fun. The other top tip BBC game must be *Firetrack* from the ever excellent Aardvark. However, the Spectrum version of *Yie Ar Kung Fu* is too slow, too easy, and with some breath-taking attribute problems when the fighter jumps. The excellent Amstrad version, however, has been converted with skill and respect for the machine that is far too rare.

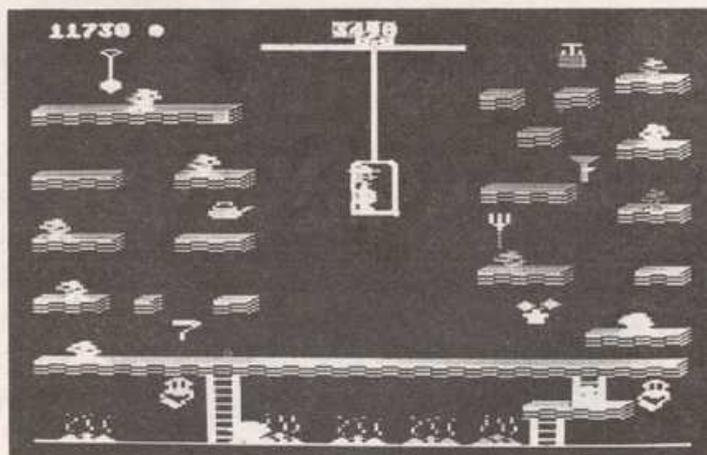
The arcade game *Commando* has been released by Elite for BBC, Amstrad, Commodore and Spectrum. I've only seen the last two but they are very slick and great fun. Another very good Spectrum war game is *Panzadrome* from Ariolasoft.



Ocean's bumper Christmas includes *Knight Rider*, *Transformers*, *Rambo*, *Street Hawk* and *Cosmic Wartoads* by Denton Designs. Not all are out at the time of writing but some look to be excellent. Something that isn't a game, or a thousand games in one, is the sprite and graphics utility *Laser Basic* from the authors of *White Lightning*, sold by Ocean's new IQ label. There will be a full review in a later Avenue but I promise you it is superb. It is out now for the Spectrum and Commodore.

Finally the big new thing this Christmas is compilation tapes. The choice from these must depend on whichever games you already have but my tips are the US Gold collection and Jeff Minter's *Yak's Progress*. *They Sold A Million* strikes me as a basis for a compilation guaranteed not to sell at all, but the Amstrad version contains games previously unreleased.

Tony Kendle



*Bounty Bob* from US Gold

gang, but the former looks very slick and both are better value than most games. *Sir Fred* is MikroGen's other new offering, pricey at £9.95 but brilliant. It plays like a funnier version of *Castle Quest*, the graphics are like Mordillo cartoons, animation is excellent, attribute clashes are re-

with added Kung Fu rather than vice versa. Mirrorsoft's *Dynamite Dan* is also a good bet.

Melbourne House's *Fighting Warrior* has been well implemented on the Amstrad, albeit perhaps their weakest game, and the super *Gyroscope* is of high quality on



## Strong incentive

**Y**ou'll know by now that something called Christmas is just a few days away from us. It's a time when all the software houses work 24 hours a day trying to persuade us that *their* adventure is the best and you should buy no other.

Leaving aside the obvious blockbusters like *Lord of the Rings* (just about essential viewing, I would have thought), a program which should be at the very top of every Amstrad owner's 'please, please, please Santa' list is *The Graphic Adventure Creator* from Incentive Software.

## Self-help

I've spent several weeks recently looking at some of the efforts produced with *The Quill* - I'm a great believer in self-help! - and of course that program is available for the Amstrad as well as the Spectrum, Commodore and so on. But the latest program from Incentive seems very much easier to use than Gilsoft's utility and will appeal to very many more people.

As its name suggests, the *Graphic Adventure Creator* (GAC) enables you to write graphic-with-text adventures without the need for an extra module as in *The Quill*. It comes on tape or disc and includes a comprehensive and rather chatty manual. Included with the main program is a small demonstration adventure to show the user what is attainable (and the graphics are pretty good, thus encouraging the user to have a go), as well as a 'start-you-off' file of commonly-used words to save you a little typing.

Having lived with the pro-

gram for some while - like adventures themselves, adventure-writing utilities need more than just a cursory glance - I have to say that I am impressed. And this positive feeling starts on first opening the manual. It's friendly and well-written, leading the novice user gently into the mysteries of adventure-writing. *The Quill* makes the job of programming an adventure easier, but there is still much work to be done; GAC makes the whole process very easy to get started.



On power-up, the main menu is presented (once one has negotiated the dreaded Lenslok): this menu allows the editing of messages, nouns, verbs, room descriptions and graphics, as well as conditions, of which more later. The first job, however, is to write the adventure - this may seem like a contradiction, but any utility like this should be approached only after planning out the adventure on paper, so that a clear idea of what is required is fixed in the author's mind.

Now the room locations must be typed in, with descriptions, connections (to other rooms) and associated pictures. Then object descriptions along with their weights (although this need not necessarily play a role in the finished scenario, nevertheless, some number has to be entered), and then vocab-

gram a lot of work and allowing the player to type, for example, *Get, Take, Pick* and whatever else you decide some might think of in a particular situation.

## Simplicity

Once all this data is typed in and edited if required, the pictures may be tackled. Like everything else in the GAC, this job is made as easy as possible for the user - not the most elaborate or sophisticated drawing utility, it is quite adequate for adventure illustrating, and contains routines for drawing boxes, rectangles, circles, ellipses and so on, as well as a good *Fill* and an excellent *Shading* facility. Here, too, editing is simplicity itself, as the artist may step forward and back through the picture allowing for editing or deletion of certain parts while leaving the rest intact.



Finally, one picture may be merged with another, so that, like *The Quill*'s 'subroutines', common patterns can be placed in several pictures without the need for re-drawing. Colour handling, too, is easy. With an on-screen mini-menu, a colour bar-chart and a little pen which shows the current status of colour, shading, flash etc, this part of the GAC is delightful to use.

All that's left to do now is to define the conditions, without

unless he has the wooden key of Thromdir. Local conditions are peculiar to a particular room (What are the exits? If there is a swamp here and the player is carrying more than a certain weight, he will sink without warning and so on).



High priority conditions are scanned each time any input is made by the player (eg, is he now in the room with the orc, and has he got the necessary defence?), while low priority conditions are scanned on certain inputs (if *Quit* is typed, then go into the end game routine).

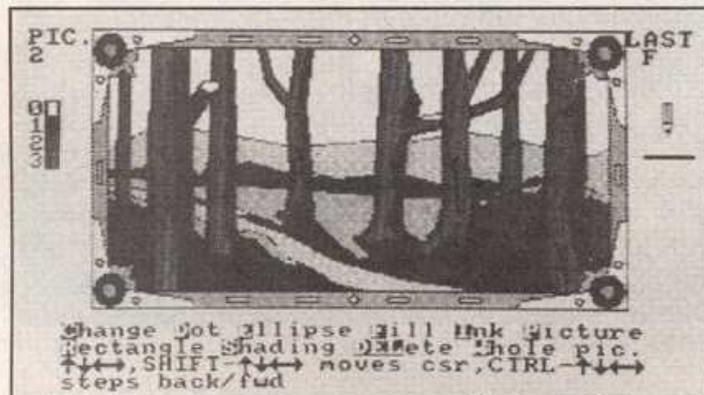
And that's it! Well, almost - I haven't mentioned counters and markers. There are 255 of each of them, with counters being used to keep track of the number of times a certain action is performed (if the adventurer is in the dark, ensure that 20 moves without a light results in a cracked skull), while markers are either on or off (if the adventurer has switched on the light, then his skull is safe until he switches off again).

Conditions require a little thought, of course, and can be quite complex - assuming your number 7 verb is *Unlock*, your number 6 noun is *Door* and number 2 noun is *Key*, then a typical condition may be *If (Verb 7 And Noun 6 And CArr 2) Set 3 Mess 10*. This translates as, 'If the player has typed *Unlock Door* and he is carrying the key, then reset marker 3 and print message number 10 (*The door is now open*).'

## Extended version

It's really as simple as that, though a complex adventure may have a lot of complex conditions in order to work properly.

I haven't got room for more detail - rest assured that there are very few bad points. In the pipeline is a version to make full use of the extended memory of the 6128 (at the moment, 25K is available for your adventure) and full disc access during play. But for the moment, Incentive's *Graphic Adventure Creator* is reason enough to buy an Amstrad.



'Pretty good' graphics with GAC

ulary to be recognised in the adventure, consisting of nouns, verbs and adverbs. Each of the words is given a number, and more than one word may be assigned to a number, thus saving the pro-

which the adventurer could merely walk around a static landscape - setting the conditions ensures that dragons will stomp on him, unless he has the dragonsbane, and that this door cannot be unlocked

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# Charts

## Amstrad

|    |     |                       |                     |       |
|----|-----|-----------------------|---------------------|-------|
| 1  | (2) | Yie Ar Kung Fu        | (Imagine)           | £7.95 |
| 2  | (1) | They Sold A Million   | (Hit Squad)         | £9.95 |
| 3  | (3) | Grand Prix 3D         | (Software Invasion) | £9.95 |
| 4  | (4) | Finders Keepers       | (Mastertronic)      | £1.99 |
| 5  | (6) | Soul Of A Robot       | (Mastertronic)      | £1.99 |
| 6  | (5) | Formula One Simulator | (Mastertronic)      | £1.99 |
| 7  | (8) | Nonterraqueous        | (Mastertronic)      | £1.99 |
| 8  | (7) | Caves Of Doom         | (Mastertronic)      | £1.99 |
| 9  | (-) | Raid                  | (US Gold)           | £9.95 |
| 10 | (9) | Chiller               | (Mastertronic)      | £1.99 |

## Atari

|    |     |                |                    |       |
|----|-----|----------------|--------------------|-------|
| 1  | (-) | Goonies        | (Datasoft/US Gold) | £9.95 |
| 2  | (1) | Mercenary      | (Novagen)          | £9.95 |
| 3  | (2) | Action Biker   | (Mastertronic)     | £1.99 |
| 4  | (9) | Smash Hits 4   | (English)          | £9.95 |
| 5  | (-) | Airwolf        | (Elite)            | £9.95 |
| 6  | (-) | Tapper         | (Sega/US Gold)     | £9.95 |
| 7  | (6) | Electra Glide  | (English Software) | £9.95 |
| 8  | (-) | Red Moon       | (Level 9)          | £9.95 |
| 9  | (-) | Theatre Europe | (PSS)              | £9.95 |
| 10 | (-) | Blue Max 2001  | (US Gold)          | £9.95 |

## BBC

|    |     |                                |                     |        |
|----|-----|--------------------------------|---------------------|--------|
| 1  | (-) | Way of the Exploding Fist      | (Melbourne House)   | £9.95  |
| 2  | (4) | Repton 2                       | (Superior Software) | £9.95  |
| 3  | (1) | Strike Force Harrier           | (Mirrorsoft)        | £9.95  |
| 4  | (8) | Nightshade                     | (Ultimate)          | £9.95  |
| 5  | (3) | Match Day                      | (Ocean)             | £9.95  |
| 6  | (-) | Dr Who and the Mines of Terror | (Micropower)        | £11.95 |
| 7  | (-) | Citadel                        | (Superior)          | £9.95  |
| 8  | (-) | Waterloo                       | (Lothlorien)        | £9.95  |
| 9  | (-) | Revs                           | (Acornsoft)         | £14.95 |
| 10 | (9) | Blockbusters                   | (Macsen)            | £7.95  |

## Commodore 64

|    |     |                        |                    |       |
|----|-----|------------------------|--------------------|-------|
| 1  | (4) | Commando               | (Elite)            | £9.95 |
| 2  | (3) | Little Computer People | (Activision)       | £9.95 |
| 3  | (-) | Mercenary              | (Novagen)          | £9.95 |
| 4  | (2) | Rambo                  | (Ocean)            | £9.95 |
| 5  | (4) | Winter Games           | (Epyx/US Gold)     | £9.95 |
| 6  | (5) | Last V8                | (Mastertronic)     | £1.99 |
| 7  | (6) | They Sold A Million    | (Hit Squad)        | £9.95 |
| 8  | (7) | Fight Night            | (Datasoft/US Gold) | £9.95 |
| 9  | (-) | Goonies                | (Datasoft/US Gold) | £9.95 |
| 10 | (-) | Transformers           | (Ocean)            | £9.95 |

## Spectrum

|    |      |                           |                       |        |
|----|------|---------------------------|-----------------------|--------|
| 1  | (2)  | Yie Ar Kung Fu            | (Imagine)             | £7.95  |
| 2  | (1)  | Commando                  | (Elite)               | £7.95  |
| 3  | (-)  | Lord of the Rings         | (Melbourne House)     | £15.95 |
| 4  | (5)  | Elite                     | (Firebird)            | £14.95 |
| 5  | (3)  | Back To Skool             | (Microsphere)         | £9.95  |
| 6  | (4)  | Tomahawk                  | (Digital Integration) | £9.95  |
| 7  | (10) | Saboteur                  | (Durell)              | £9.95  |
| 8  | (-)  | Winter Sports             | (Electric Dreams)     | £9.95  |
| 9  | (-)  | Way of the Exploding Fist | (Melbourne House)     | £9.95  |
| 10 | (8)  | International Karate      | (System 3)            | £9.95  |

All figures compiled by Gallup/Microscope

## Top Twenty

|    |      |  |                     |
|----|------|--|---------------------|
| 1  | (1)  | Commando (Spectrum/C64)                    | Elite               |
| 2  | (-)  | Yie Ar Kung Fu (Spectrum/Amstrad/BBC/MSX)  | Imagine             |
| 3  | (9)  | Way Of The Exploding Fist (Various)        | Melbourne House     |
| 4  | (4)  | Elite (Spectrum/C64/BBC)                   | Firebird/Acornsoft  |
| 5  | (3)  | They Sold A Million (Spectrum/C64/Amstrad) | Hit Squad           |
| 6  | (-)  | Mercenary (C64/Atari)                      | Novagen             |
| 7  | (7)  | Little Computer People (Various)           | Activision          |
| 8  | (5)  | Rambo (Spectrum/C64)                       | Ocean               |
| 9  | (-)  | Lords Of The Rings (Spectrum)              | Melbourne House     |
| 10 | (8)  | Computer Hits 10 (Spectrum)                | Beau Jolly          |
| 11 | (10) | Back To Skool (Spectrum)                   | Microsphere         |
| 12 | (12) | Winter Games (C64)                         | Epyx/US Gold        |
| 13 | (6)  | Formula One Simulator (Various)            | Mastertronic        |
| 14 | (14) | Tomahawk (Spectrum)                        | Digital Integration |
| 15 | (11) | Finders Keepers (Spectrum/C64/Amstrad)     | Mastertronic        |
| 16 | (16) | Beach Head 2 (Spectrum, C64, Amstrad)      | Access/US Gold      |
| 17 | (-)  | Transformers (C64)                         | Ocean               |
| 18 | (19) | BMX Racers (Spectrum/C64/C16)              | Mastertronic        |
| 19 | (18) | Gyroscope (Spectrum/C64/Amstrad)           | Melbourne House     |
| 20 | (-)  | Arcade Hall of Fame (Various)              | Various             |

Figures compiled by Gallup/Microscope

## Readers' Chart No 55

|    |      |  |                    |
|----|------|--|--------------------|
| 1  | (8)  | Commando (Spectrum/C64)                          | Elite              |
| 2  | (1)  | Elite (Spectrum/C64/BBC)                         | Firebird/Acornsoft |
| 3  | (5)  | Winter Games (C64)                               | Epyx/US Gold       |
| 4  | (2)  | Way of the Exploding Fist (Spectrum/C64/Amstrad) | Melbourne House    |
| 5  | (4)  | Fairlight (Spectrum)                             | The Edge           |
| 6  | (7)  | Red Moon (Spectrum/C64/Amstrad/BBC/Electron)     | Level 9            |
| 7  | (3)  | Monty on the Run (Spectrum/C64)                  | Gremlin Graphics   |
| 8  | (-)  | Non Terraqueous (Spectrum/Amstrad)               | Mastertronic       |
| 9  | (10) | Bored of the Rings (Spectrum/Amstrad)            | Delta 4/Silversoft |
| 10 | (-)  | Back to Skool (Spectrum)                         | Microsphere        |

Winning Phrase No 55: "It's a fright when fairy lights explode or pop" from Terry Flood of Kidbrooke, London SE3. Honourable mentions to J Burnett of Camberley, Surrey with "Flying sleigh spotted at Heathrow" and Neil Brownlee of Galashiels with "So Lord of the Rings here at last."

## Now voting on week 57 - £25 to win

Each week *Popular* is compiling its own special software top ten chart - compiled by YOU.

And each week we will send £25 to the person who sends in, with their chart votes, the most original (witty, neat or clever - but never rude) phrase or sentence made up from the letters (you don't have to use them all) in the titles of the top three programs in this week's Readers' Chart, published above.

You can still vote in the chart without making up a slogan - but you won't be in with a chance of winning the prize.

All you have to do is fill in the form below (or copy it out if you don't want to damage your magazine) and send it off to: Top 10, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7PP.

Voting for Week 57 closes at 2pm on Wednesday December 18 1985. Entries received after that time will not be eligible for inclusion in that week's voting. The judges decision is final. Only one entry per individual per week will be allowed.

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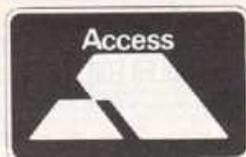
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# The Rogue Program



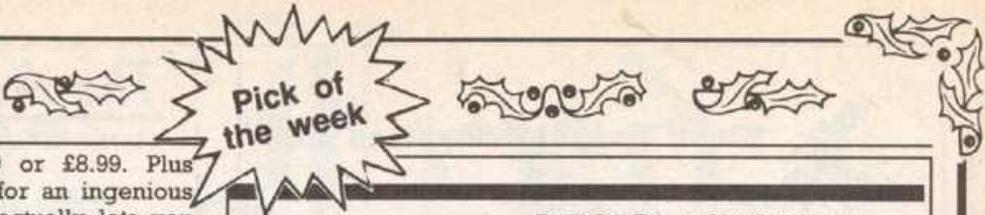
There be some strange going s on this evening, an if I aint far wrong you be having some-thing to do with it. We don't take kindly to poachers and the likes in these parts.



Created entirely using a BBC and an AMX mouse

continued next week

# New Releases



## ROLLER

*Wild Ride* is quite an entertaining game, which though lacking any great innovation or programming brilliance is nevertheless worth a quick mention.

It has you racing around a fairground rollercoaster seeking to harmlessly detonate bombs left there by a crazed bomber before they explode into a million pieces, leaving the roller coaster a mass of tangled wreckage.

Obviously there are obstacles; these are variously titled Boppers, Flappers and Shox. Boppers are rover-like balloons that bounce around and get in the way, Flappers are birds that swoop down and try to peck you, Shox are electricity bolts that zip down the roller coaster tracks. All over the place empty cars speed around, making life even more difficult.

It's very fast and quite entertaining, but credit should go to *Interceptor* for putting it out at £6.95, thereby proving that games don't have to be



either £1.99 or £8.99. Plus points also for an ingenious loader that actually lets you play a simple little *Lunar Lander* game whilst the program is loading.

**Program** *Wild Ride*  
**Price** £6.95  
**Micro** Commodore 64  
**Supplier** *Interceptor Micros*  
*Lindon House*  
*The Green*  
*Tadley*  
*Hampshire*

## SOPHISTICATED

*WD Joss* for the QL is a sort of instant Icon control device which lets you control basic QL functions via a joystick or keyboard cursor keys.

Once loaded, it presets basic QL functions in the form of menus which you can move up and down with a cursor and select with the fire button. Thus, instead of typing a *Copy* command in full (a lot of key presses) you simply select the option on the menu to copy and then select the filename of the file to be copied.

The system is actually very sophisticated and includes features like a real time clock and a toolbox file that gives you a number of facilities for use when developing SuperBasic programs - basically a number of options to do with line numbering and saving your program.

**Program** *WD Joss*  
**Price** £15.00  
**Micro** QL  
**Supplier** *WD Software*  
*Hilltop*  
*St Mary*  
*Jersey CI*

## DESIGN SYSTEM

*The Oxford Computing Art Studio* is without doubt the best graphics for the Spectrum ever. Not only does it have hundreds of features, it even manages to effectively remove those dreaded attribute problems. It does this by the intelligent expedient of providing options to have shapes you have constructed automatically shifted to the nearest attribute square.

Although icons have a slightly dubious image, particularly on home computers, as covering up with superficial slickness otherwise lacklustre programs, in this case they are an intrinsic as well as attractive feature.

You can customise the program to work with either keyboard, joystick, or mouse in the same way that you might customise a Spectrum wordprocessor to work with a particular printer.

Instructions are expressed through icons, menus and windows - pointing a cursor at the appropriate choice. How to summarise the facilities? You get all the usual stuff, circles, ellipses, squares, rectangles, all drawn using the 'rubber band' system.

The 'pen' may be of almost any width down to one pixel or may be used like an airbrush, 'spraying' pixels with the chosen ink colour. There are a vast number of text fonts which can be integrated with the



design. Not only that, but you may use a simple user graphic system and define your own.

So far so clever, but seen before. However, anything you design you can manipulate. Using a window to mark off an area of the screen the window area can be inverted, shrunk, enlarged and placed or replaced on any other area of the screen. In fact the screen itself can be 'enlarged' so that you can very precisely tidy lines, etc.

*Art Studio* really is a doddle to use and you don't have to be an artist to produce professional looking results. Definitive.

**Program** *Art Studio*  
**Price** £14.95  
**Micro** Spectrum  
**Supplier** *Rainbird*  
*Upper St Martin's*  
*Lane*  
*London*

# This Week

| Program             | Type | Micro        | Price  | Supplier    | Outlaws            | Arc | Commodore 64 | £9.95  | Ultimate    |
|---------------------|------|--------------|--------|-------------|--------------------|-----|--------------|--------|-------------|
| Introducing Percent | Ed   | Amstrad      | £8.    | Mentor Edu. | Wild Ride          | Arc | Commodore 64 | £6.95  | Interceptor |
| Introducing the Rec | Ed   | Amstrad      | £8     | Mentor Edu. | Yabba Dabba Doo!   | Arc | Commodore 64 | £7.95  | Quicksilva  |
| Spy Hunter          | Arc  | Atari 48K    | £9.95  | US Gold     | Micky's Space Ad   | Ad  | Commodore 64 | £12.95 | US Gold     |
| Dr Who and Mines    | Arc  | BBC B        | £19.95 | Micro Power | Buster Block       | Arc | MSX          | £6.95  | Kuma        |
| Spider Speller      | Ed   | BBC B        | £5.00  | Vannin      | Bridge             | S   | MSX          | £8.95  | Kuma        |
| Speech!             | Ut   | BBC B        | £9.95  | Superior    | QL Pawn            | Ad  | QL           | £19.95 | Sinclair    |
| Souls of Darkon     | Arc  | Commodore 64 | £8.90  | Task Set    | QL Fictionary      | Ed  | QL           | £12.95 | Sinclair    |
| The Odyssey         | Ad   | Commodore 64 | £9.95  | Duckworth   | QL Macro Assembler | Ut  | QL           | £59.95 | Sinclair    |
| Ballblazer          | Arc  | Commodore 64 | £9.95  | Activision  | WD Joss            | Ut  | QL           | £15.00 | WD Software |
| Diagon              | Arc  | Commodore 64 | £2.95  | Bug Byte    | The Ludoid Quartet | Ad  | Spectrum     | £2.95  | Bug Byte    |
| Mercenary           | Arc  | Commodore 64 | £9.95  | Novagen     | Arena              | Arc | Spectrum     | £9.99  | Argus Press |
| Moebius             | Arc  | Commodore 64 | £9.95  | Infinite    | Bomber Bob         | Arc | Spectrum     | £2.95  | Bug Byte    |
|                     |      |              |        |             | Death Wake         | Arc | Spectrum     | £7.95  | Quicksilva  |

## REPETITIVE

*Outlaws* from Ultimate is a fairly entertaining game for the Commodore 64. I prefer it to *Imhotep* but to describe any Ultimate game as 'fairly entertaining' seems to me a pretty serious criticism.

The Brownie points the game deserves are that, to my knowledge, it isn't something that's been done to death before on micros (although I seem to have seen something similar in the arcades) and the animated graphics are rather well done. It is, however, a fairly repetitive bang bang bang, kill kill kill affair with little long term attraction.

You, complete with white horse denoting goodness and purity, aim to rid a variety of

horses are black and less well animated.

The joystick controls horse and rider movements, left, right, jump, ducking when the odd bullet gets in your way and gun angle; in some cases they zoom towards you guns (as they do) blazing. This becomes a little like a joust as you duck to dodge them whilst similarly returning fire.

Later screens move to the town where innocent citizens wander unhelpfully about getting in the way; killing them only loses you a few bonus points, so I'd advise shooting them if they stroll into the line of fire.

The game is quite entertaining, addictive for around an hour and quite well programmed. Personally I don't think that's enough for £9.99, free tape cleaner or not.

**Program** *Outlaws*

**Price** £9.95

**Micro** Commodore 64

**Supplier** *Ultimate*

*The Green*

*Ashby de la Zouch*

*Leicestershire*

*LE6 5JU*

## DALEK-SPEAK

Superior Software's *Speech!* is a quite remarkable piece of programming. It gives you, without hardware, a speech utility more or less as good as Acorn's official speech chip, but has greater range.

The program takes up 7½K of program space and is incredibly easy to use. It merely requires a new command word which is *Say* preceded by a Star. You then type in your text between quotes in



conventional English (although the program is fussy about mistakes like double spaces). The end result is as good as anything I've heard this side of the Amiga and it'll make a stab at even the most ludicrous words constructed without vowels and at great length; EWWEGRETHEM-HOHOOTEP particularly pleased me.

It is possible to add words to the computer dictionary where they are not said exactly as they would be, using phoneme analysis and also to vary the pitch of the spoken voice. You can also use the speech within a Basic program, using the *Say* command preceded by *OSCLI*.

The only problem with the program is the fact that it takes up quite a lot of memory should you wish to use it with your own, lengthy listings. But it is possible to load the program at a different address should it be incompatible with your own machine code.

A really superb release that allows everyone to play around with the wonders of

Dalek-speak for relatively little outlay. Why pay more?

**Program** *Speech*

**Price** £9.95

**Micro** BBC

**Supplier** *Superior Software*

*Skinner Lane*

*Leeds 7*

## CORRUPTED

*M Doc* is a useful facility for Spectrum microdrive owners. It lets you, with a fair wind and bit of luck, recover corrupted microdrive files and repair them. It will even work with things like *Tasword Two* files and has a 'filter data' option to remove corrupted characters so that the file can be edited.

Assuming a program does appear using the *Cat* command, it can be analysed sector by sector using the program and a built-in monitor allows for the editing of hex, decimal or ASCII strings. If you can repair your data you can then rewrite to another, undamaged section of cartridge.

An extra utility called *B Doc* lets you edit basic programs in the same way. The program is fully compatible with all three versions of the *Interface 1* Rom, and for people who bought an earlier version of the program called *C-Doc*, there is a cheap (£2.50) upgrade option.

**Program** *M Doc*

**Price** £6.95

**Micro** Spectrum

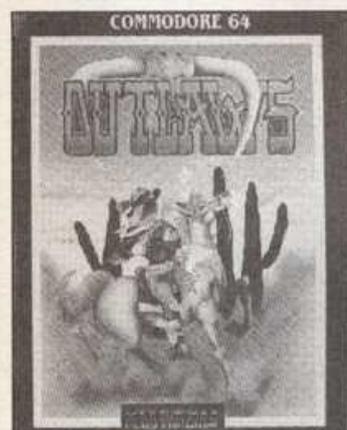
**Supplier** *Seven Stars*

*34 Squirrel Rise*

*Marlow*

*Bucks*

*SL7 3PN*



towns, barns, homesteads and deserts of a bunch of outlaws who are doing the usual things outlaws do to the usual innocent citizens such things usually get done to. You can tell who the baddies are, not only because they tend to be rough-looking types, but also because their

## This Week

|                          |     |          |        |                 |
|--------------------------|-----|----------|--------|-----------------|
| <b>Dogsbody</b>          | Arc | Spectrum | £2.95  | Bug Byte        |
| <b>Gladiator</b>         | Arc | Spectrum | £8.95  | Domark          |
| <b>Myia Di'Kaich</b>     | Arc | Spectrum | £2.95  | Global Software |
| <b>Zoot</b>              | Arc | Spectrum | £2.95  | Bug Byte        |
| <b>M-Doc</b>             | Ut  | Spectrum | £6.95  | Sven Stars      |
| <b>Oxford Art Studio</b> | Ut  | Spectrum | £14.95 | Rainbird        |
| <b>Q Warrior</b>         | Arc | Vic20    | £2.95  | Bug Byte        |

**Activision**, 15 Harley House, Marylebone Road, London NW1, 01-486 7588. **Argus Press**, Liberty House, 222 Regent Street, London W1R 7DB, 01-439 0666. **Bug Byte**, Mulberry House, Canning Place, Liverpool, L1 8JB, 051-709 7071. **Domark**, 204 Worple Road, London SW20 8PN, 01-947 5624. **Duckworth**, The Old Piano Factory, 43 Gloucester Crescent, London NW1 7DY. **Global Software**, PO Box 67, London SW11 1BS, 01-228 1360. **Infinite**,

73 Alcester Road, Moseley, Birmingham 13. **Interceptor**, Interceptor Micro's, Lindon House, The Green, Tadley, Hampshire, 07356 71. **Kuma**, Kuma Computers, 12 Horseshoe Park, Pangbourne, RG8 7JW, 07357 4335. **Mentor Educat.**, Trim, Co. Meath, Ireland, 046 31268. **Micro Power**, Northwood House, North Street, Leeds LS7 2AA, 0532 434006. **Novagen**, Freeport 142 Alcester Road, Birmingham B13 8HS. **Quicksilver**, Palmerston Park House, 13 Palmerston Road, Southampton, Hampshire SO1 1LL, 0703 20169. **Rainbird**, Wellington House, Upper St. Martin's Lane, London. **Seven stars**, 15 Gloucester Avenue, London NW1 7AU, 01-485 7775. **Sinclair**, Stanhope Road, Camberley, Surrey, GU15 3PS, 0276 686100. **Superior**, Regent House, Skinner Lane, Leeds, LS7 1AX, 0532 459453. **Task Set**, 13 High Street, Bridlington, YO16 4PR, 0262 673798. **US Gold**, Unit 10 The Parkway Industrial Centre, Heneage Street, Birmingham B7 4LY, 021-359 3020. **Ultimate**, Ultimate Play the Game, Ashby de la Zouch, Leicestershire, LE6 5JV, 0530 411485. **Vannin**, 133 Boroughbridge Road, York, YO2 6AA. **Wd Software**, Hilltop, St. Mary, Jersey, Channel Islands, 0534 81392.

# NINETEEN EIGHTY-FOUR GEORGE ORWELL

## Language barrier

Orwellian hysteria having lately calmed down after passing through the dreaded 1984, popular opinion would have it that we have escaped most of Orwell's dire predictions. Popular opinion, of course, chose in the main to ignore the fact that Orwell was not setting down a cast-iron prognostication for a particular year.

However, those who laughingly pointed out the absence of all-seeing tele-screens and the Thought Police could well be ignoring some grave and justifiable misgivings about Orwell's prediction about the gross misuse and distortion of language.

NewSpeak, as Orwell described it, alters the meaning of words. Some are employed which actually convey the reverse of that which is intended, and are expressed to be interpreted as polar opposites. Others are deliberately misleading, ambiguous and trap-laden from the unwary. We have to learn to understand the unsaid and interpret the actual messages being sent. It is a modern minefield, with euphemisms and acronyms abounding.

All professionals generate their own jargon. The initiated can bask within a wall of special speech which effectively keeps out the unwashed masses of the ignorant. Prospective joiners of the inner circles are also deterred by what is, effectively, a language barrier. Not only is the mystery of the craft to be learned, but the special accompanying language assimilated. For most, the sheer effort becomes too great. Within the confines there is ease and leisurely discourse but nobody else can join in. Watch that

group of computer enthusiasts and monitor their speech patterns. We are forever finding ways of non-communication with one another.

We can use these new words and phrases to obscure the severity of action or the depth of the occurrence. Thus, the policeman going to a riot where there are stone flying, bottles hurled and sheer pandemonium will describe his appearance as attending a disturbance, President Reagan talks about his 'misspeaks,' and the fire officer fighting a blazing inferno will record what happened as a 'four-appliance stop'. These perhaps are fairly innocuous but they mislead, as also does the estate agent who describes a piece of scrub land as 'lightly wooded', a bit of grass as 'laid to lawn' and a hovel as 'a bijou property'.

People in the computer world are real offenders. One does not switch on the apparatus but 'power up' and the instructions are never in action at once but are 'booted'. The machine is not easy to use but becomes 'user friendly'. Even the inert mass of junk called the hardware does not occupy a defined space upon the desk but must have a 'foot-print'. We employ words like 'return', 'deliver' and 'debug' in strained usage and do so recursively. We talk glibly, uncaring about the listener, on Rom, Ram, ULA and Ascii. Using numbers, we confuse ourselves. Who knows the value of the prefix mega- or giga- and which is bigger? Who has not overheard the heated arguments on the relative merits of the Z80A over the 6502? Whatever became of the 6809 and how can there possibly be an intelligent conversation concerning the superiority of the 8086 over the 8088.

Recognise the dynamism of language and do not expect it to fossilise. In doing so, try always to be understood. Speak English wherever possible. Notice that common agreement is enhanced by the effort at sharing our thoughts. It is diminished by shutting out the vast majority of people who cannot, or decline to, keep up with the jargon. Remember what happens to people fed with NewSpeak.

Rod Dawson

## Puzzle No 188

Ever since history came to be recorded in the mid-European state of Pandemonia there have been two major disasters to befall the country. The first of these was the invasion by renegades in 1306, and, more recently the Great Plague.

A curious connection was discovered linking the dates of these two disasters. For example, it was found that in each case the date was also equal to the sum of the first digit raised to the first power, the second digit to the second power, the third digit to the third power, and the fourth digit to the fourth power:

$$1^1 + 3^2 + 0^3 + 6^4 = 1306$$

Likewise, the date of the Great Plague also exhibits this strange property, and consequently such dates are regarded in Pandemonia as having special significance.

Can you determine the date of the Great Plague, and also advise the Pandemonians when next they should expect a major disaster?

## Solution to Puzzle No 183

The field had sides of 24, 45 and 51 yards.

The problem requires us to find the sides of a right triangle having a perimeter of 120 yards, in which each of the three sides measures an exact number of yards in length.

```
10 FOR A=1 TO 36
20 LET B=1
30 LET C=120-(A+B)
40 IF A*A+B*B=C*C THEN PRINTA;
   " ";B;" ";C
50 LET B=B+1
60 IF B<C THEN GOTO 30
70 NEXT A
```

The program uses two FOR/NEXT loops A and B to generate the legs of a triangle with integral sides. The hypotenuse (C) is found by subtracting the sum of A and B from 120 (the perimeter). If the square of C is also equal to the sum of the squares of A and B (ie, the triangle contains a right-angle), the resulting values are printed.

## Winner of Puzzle 183

The winner is the Rev Allan Buik of Kingstanding, Birmingham, who will be receiving £10.

## Rules

The closing date for Puzzle 188 is Jan 15.

## The Hackers



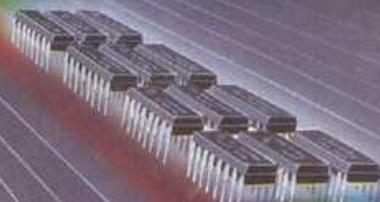
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