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POPULAR Computing WEEKLY

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10-16 April 1986

Vol 5 No 15

THIS WEEK

REVIEWS

AMX mouse on Amstrad CAD 64 from Orpheus

NEWS

Confidence at Acorn as losses decrease Budget range for US Gold?

Sinclair sells out

All rights go to Amstrad for £5m.

- **Amstrad takes over all Sinclair's manufacturing and marketing.**
- **QL almost certainly to be dropped.**
- **Spectrum 128 to be re-packaged with tape deck.**
- **Research and development on the 'Pandora' portable will continue at Sinclair.**

Full details below and inside

AMSTRAD Consumer Electronics announced on Monday (April 7) that it has brought the manufacturing, marketing and brand-name rights to all Sinclair computer products worldwide.

It also has a 'first refusal' option on future Sinclair machines.

The deal, announced jointly by Sir Clive Sinclair and Alan Sugar, meeting between Sinclair and its creditors held over the Easter weekend to

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Win £2000 worth of prizes

- *One Commodore 128D with colour monitor*
- *Two Atari 520 STMs with disc drive*
- *Plus 25 Mirrorsoft titles to be won*

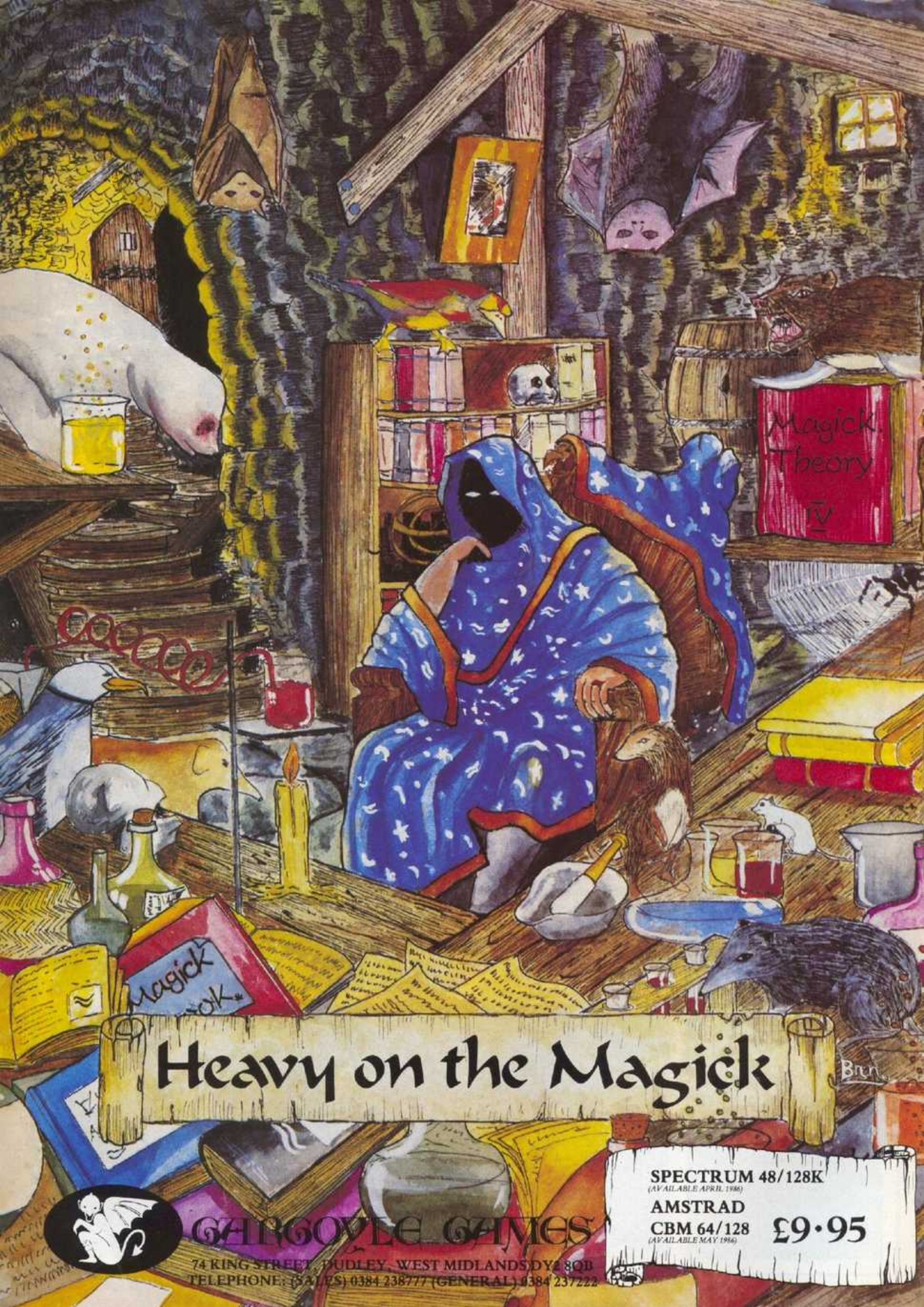
Word Wizards – turn to p12

Get Dexter and Doomsday Blues

Hot new titles from PSS

Colour feature see page 16

Get Dexter, licensed by PSS from French firm Ere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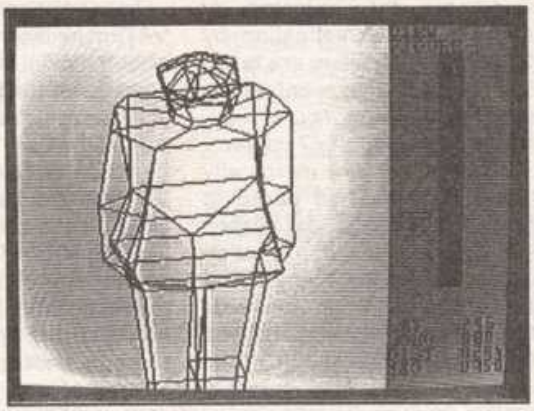

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Sinclair Research invented the home computer market in this country. It cut the price of the technology by inventiveness and audacious design. A market grew of hobbyists – devoted computer users quite happy to fiddle with leads and tape recorders and unconcerned by rubber keyboards.

Then the market grew even further, and despite graphics and sound shortcomings the Spectrum attracted an enormous software base.

Sinclair has not changed all that much in the years since its first success, but the market has, and that is why it has ended, as we know it – selling its cherished computers and name to Amstrad.

The past year or so has been a battle between research-led companies like Sinclair, making exciting technological leaps; and marketing operations like Amstrad, which positively prides itself on not taking dramatic steps, on using tried, tested even dull technology and treating computers like any other consumer item. The policy has worked, superbly.

However, Sir Clive has characteristically hung on to two of his favourite projects: the Pandora portable and research into wafer-scale integration. One hopes that the separate companies set up make a go of the research and find willing buyers.

It's hard to portray the out come of that battle as anything other than a total victory for Amstrad. As such it must be congratulated on its success. Now that Sir Clive has the telecommunication, wafer scale intergration and other, as yet unspecified, projects to fill his time and test his inventiveness, we wish him the best of luck.

Whatever happens now, an era has ended.

Amstrad's share of the home computer market is now well over 50% and it will be a strong test of Commodore and Atari's stamina, creativity and marketing to keep up.

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Published by Sunshine Publications Ltd, 12-13 Little Newport Street, London WC2H 7PP. Tel 01-437 4343 Telex 296275 **Typeset by** Publishers Reprographics Services Ltd, 4 Roger Street, London WC1. **Printed by** Greenaway Harrison, Sutton Road, Southend-on-sea, Essex. **Distributed by** S M Distribution, London SW9, Tel 01-274 8611, Telex 261643.
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ABC

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Acorn confident as losses decrease by £20 million

ACORN has announced that it expects to make a pre-tax loss of £2.94 million for the six months up to December 1985. This is a considerable improvement on its £22.2 million loss for the previous 12 months.

On a turnover of £20.12 million, the company reports an operating loss of £97,000. However, when exceptional items, such as covering the stock still left over from Acorn's disastrous forays into the US and German markets, tax credits (of £2.29 million) and provisions for the outcome of Acorn's VAT investigation by Customs and Excise, are taken into account, the eventual retained loss, after tax, is estimated at around £1.67 million.

"The figures are marginally better than we had dared to hope for," said an Acorn spokesman. "We don't anticipate a substantial change from these figures when the confirmed results appear. The VAT investigation should be resolved next month, and we feel we have been generous in our provision of £345,000 for that."

Acorn became subject to the VAT inspection six months ago after it did not provide accurate records for the previous year.

However, the company's turnover is still heavily dependent on one product series – the machines endorsed by the BBC. This is currently accounting for 90% of turnover, and income from Acorn's developments in RISC technology and the Communicator 16-bit machine has not yet materialised.

"The Master series will remain our bread and butter for a time," the spokesman continued. "RISC development will not be coming through until next year. The Communicator is not engendering any revenue now, and won't for the first six months of the year.

"However, we are negotiating various contracts; particularly encouraging is the interest shown in the Communicator by Olivetti UK, which sees it as a potential product in the financial market."

Original 520ST package dropped

ATARI has, after all, dropped the original configuration of the 520ST, launched here last September. The new 520STM and 1040STF, plus the promised 520STFM have superseded it.

Atari UK is out of stock of the 520ST cpu, minus TV modulator with external disc drive package, which retailed for £749 with a monochrome monitor. Its main stockist and distributor, Silica Shop, says it won't be buying any more such packages.

"It simply isn't necessary with the new machines," said John Arundel of Silica Shop. "We have two disc drives on sale – a 1M version for £199, and a ½M version at £149, so customers now have a choice."

Atari UK's marketing manager, Rob Harding, added, "If you buy the STM, disc drive and monitor, you'll find it comes to the same price."

The original 520ST package

Microprose move to UK

ONE of the major US software companies, Microprose, is planning to set up a division in the UK. Currently, Microprose's titles are handled by US Gold. A spokesman for US Gold said, "Microprose's main consideration is that in the US it is a household name, whereas in the UK, it's just part of US Gold, and it wants to see a bigger UK profile."

Two new titles from Talent

TALENT has announced two new packages which it will release in May.

The first, *Talisman*, is a database for the Atari ST range. Fully menu-driven and integrated with the Gem operating system, Talent prides itself on *Talisman's* ease of use. The system handles multi-line fields, class variables and many other features. *Talisman* will cost £89.95.

The second, *Techniql* (for the QL), is designed to complement Talent's earlier release, *Graphiql*. It is a two-dimensional CAD program which includes a zoom facility, rubberbanding on all drawing tools, and a facility to create a library of user-defined shapes which can be placed anywhere in any design.

It is also compatible with QL disc drives, and Ram expansions, *Talisman* will cost £49.95.

Gargoyle expands into new markets

GARGOYLE Games, acclaimed for titles such as *Sweevo's World*, will move both up- and down-market this year.

The company plans to launch a new arcade games label at the *Personal Computer World* Show in September. Four games will initially be released on the label, which will concentrate on sporting and martial arts simulations.

"That particular market may be full, but it's not full of high quality stuff," said Greg Follis of Gargoyle. "We also consider it an easier field to write for than adventures."

Gargoyle is also developing an integrated accounts system for the Amstrad PCW machines, also at the September show, under the label Carter-Follis Software.

Next year, Follis hopes to release business software for IBM compatible machines – the area where both he and fellow Gargoyle programmer Roy Carter worked before setting up the present company. "It was always our intention to produce business software," he said. "And although we're now fully committed to games, we shouldn't stand still."

Ocean reclaims Superbowl

SOME copies of Ocean's *Superbowl* for the Spectrum have been sold with a major bug in them – which will be exchanged by Ocean.

"The first lot of Spectrum versions we delivered had something wrong with them," said an Ocean spokeswoman "Anyone who wants to exchange their copy can do so."

The address to write to is Ocean Software, 6 Central Street, Manchester M2 5NS.

Sinclair sells out to Amstrad

◀ continued from page 1

discuss the £6-7 million still owed by Sinclair, following its cash crisis last summer.

"It's a very good deal for us," said Amstrad's chairman Alan Sugar. "Sinclair computers have dominated the entertainment market for some years. We see them adding substantially to our business."

Sir Clive added, "In computers, we see ourselves as pioneers in technology. We have now handed the business over – rather later than we should have done – to a proven marketing company."

As well as buying rights to the computers for £5 m, Amstrad has bought Sinclair's inventory of stock. This has wiped out Sinclair's £7 debt.

Alan Sugar spoke of enhancements Amstrad intended to make to the current Spectrum 128. It seems likely that a built-in tape recorder will be added to the Spectrum 128 in time for the Christmas market. It is possible a joystick port will be incorporated as well, and Sugar says he is aiming at £139 for the package.

But he is not so enamoured with the QL. "The QL has not attracted the best publicity." Sugar said. "There will be a destocking of that product; I don't see much future in it." However, he added that Amstrad's engineers had yet to look at the QL in detail, and it might be possible to offer it with a built-in disc drive.

Sinclair Research is to continue as a holding company. Its telecommunciations division, based in Winchester, is to be floated off, with Sinclair Research retaining a large minority holding in the new company. Its wafer-scale intergration project is also to be set up as a separate company, with initial backing from Barclays Bank. Sinclair will retain a majority shareholding and expects the first product from that project, a 40 megabit memory wafer, next year. Pandora, the portable, "will continue as a major project," Sir Clive said. "We have talked to Amstrad, which has expressed interest, about bringing it out."

There will be a large number of redundancies made at Sinclair Research, although Sir Clive would not say how many, nor specifically who would leave. Most of the layoffs will be in marketing and distribution departments.

Alan Sugar dismissed the idea that products such as the Spectrum 128 represented competition for Amstrad's CPC series. "We have always viewed our computers as a 'step-up' from entertainment," he said. "We offer more for serious use – of late, in the word processing market.

Sugar also discussed one plan for quality control on Sinclair machines – a quality control endorsed sticker, which would be attached to software packages that had been submitted to Amstrad and checked to make sure they used no illegal software calls, which affect compatibility between the alternative memory-sized machines. Amstrad would then promote packages with the sticker to the public.

Sugar also said he hoped the Spectrum 128 would continue to be manufactured by the three sub-contractors in the UK: Timex, AB Electronics and Thorn, rather than moving to Korea where Amstrad's computers are made.

Budget titles ready soon from US Gold

A BUDGET range from US Gold seems on the cards, comprising previously unreleased American titles from existing licensors to US Gold.

Current US Gold games all sell for £9.95. The budget range will probably sell for £2.99 rather than the rock-bottom figure of £1.99, because of the royalties that US Gold has to pay to the original publishers.

The company is also planning to expand into the 16-bit software market, with the release of titles for the Atari STs.

"We have some ST products coming along from our regular sources," said US Gold general manager Tim Chaney. "But as yet, we're not planning anything for the Amiga. There's no point in releasing Amiga software before the machine is released – we'll wait on that one.

Doomdark's Revenge on the phone

BEYOND Software has come up with some interesting ideas to accompany its newly launched Commodore version of *Doomdark's Revenge*.

Instead of a booklet setting the scenario for the game, the package contains an audio cassette telling the background story to *Doomdark*.

The company has also set up two telephone lines telling a different episode from the cassette each day, in 14 parts. After two weeks, the telephone recording will go back to the beginning of the tale.

The first telephone broadcast will be on April 14. Numbers to ring are 00771 1156 for a new extract each day, and 00771 57 for an update on previous episodes.

Doomdark's Revenge for the Commodore 64 costs £9.95.

New viewdata system set up

SCREEN View has recently set up an information database which its hopes will provide competition for the likes of Yellow Pages, Teledata and Prestel. The system, named Casper, can be accessed via modem (with 300/300, 1200/75, 1200/1200 and 2400/2400 options) or rung up and questioned via an operator. it provides an eighty column display with a built-in search facility, based around IBM hardware. At present the system has 20 lines, but has a capability for 960.

For a trial period, the system is free to use, but after this time, a charge of £5.00 for 500 minutes on-line will be made.

Phone 01-724 8000 (for modems), or 724 2100 (other enquires).

French without tears from Pear Tree

THE British have long been renowned for their refusal to learn foreign languages. Now, thanks to your BBC Micro, you don't have to.

A package called *Tick-Tack*, from Pear Tree Software, will automatically translate letters into French, German or Spanish. It works by substituting the foreign equivalents of English sentences selected by codes from the manual.

You write something like V21, X12, Y34 and so on, and out comes a lucid letter in the language of your choice. There are, however, two catches. The first is that it covers business requirements only, so writing to your pen-friends in France is out unless they like to hear things like "Re your inquiry of the 19th inst".

The second is that it costs £160 per language pack. An evening class would probably be cheaper but the bone-idle can get further details from Pear Tree on 0480-50595.

Compunet opens to CPC users?

IT seems likely that Amstrad owners may, in the near future, be able to access Compunet, the network currently only available to Commodore users.

Compunet always planned to eventually extend the database to accommodate owners of other micros, but apparently specific tests are now being carried out, and the Amstrad CPCs will be the next machines to join the network.

The Spectrum has been ruled out as a possibility because of its 32 column display.

Compunet's editor, Jane Firbank, said, "There is nothing definite to be said. We are thinking of other machines and always have done; in fact, we are evaluating a number of machines. We will not be going on to the Amstrad in the next two months."

She did, however, add that Compunet would have some announcements to make at the Commodore show in May.

Welsh processing on the BBC

GOOD news for language freaks. Clwyd Technics has launched a Welsh language version of *Edword*, its word processing package for the BBC educational market.

The new version supports on-screen menus and commands in Welsh, and is supported by full Welsh documentation. *Edword Cymraeg* costs £45.95 from Unit 4b, Antelope Industrial Estate, Rhydymwyn, nr Mold, Clwyd.

Pagemaker ready for Amstrads

DESKTOP publishing, the "in" activity of 1986, has reached the Amstrad micro range, courtesy of Advanced Memory Systems *Pagemaker* package for the 464, 664 and 6128.

Running in conjunction with the AMX Mouse (see this week's Hardware review, page 9), *Pagemaker* allows you to design A4 pages incorporating headlines, test and graphics – handy for newsletters and posters.

The twin-disc package costs £49.95 and requires the AMX Mouse package as well.

AMS has also announced the release of *AMX Utilities*, a support package for the mosue which includes enhanced graphics effects and a wider range of printer drivers. It will cost £14.95 on cassette and £19.95 on disc.

Miracle to expand WS range

HAVING established itself as one of Britain's top modem manufacturers, Miracle Technology shows no signs of resting on its laurels. Hot on the heels of an award for its WS3000 modem, Miracle has revealed that it will be extending the range shortly.

The award-winning WS3000

The WS3000 was named Peripheral of the Year in the recent British Microcomputing Awards. The bottom of the range model offers 300, 1200/75 and 75/1200 full duplex, and 600 and 1200 baud half duplex, as well as compatibility with the US Bell standard.

Details of the new modem are scarce, but Miracle did reveal that it would undercut the cheapest of the WS3000 models currently selling for £295.

ZX81 Superbasic?

THE ZX81 is alive and kicking: proof of this comes from Nick Godwin, who has just launched his extended Basic for the machine.

ZXEB is a supplementary Basic system which adds 44 instructions to the ZX81's built-in language. The new instructions deal with manipulation of graphics and text windows, handling of line data, keyboard input, translation of numbers to hex or binary code, Ramtop operation, memory manipulation and variables.

The £10 package also includes a manual, and is available from Nick Godwin at 4 Hurker Crescent, Eyemouth, Berwickshire, Scotland TD14 5AP.

Pocket Wordstar cut in price

MICRO-PRO has dropped the price of *Pocket Wordstar*, the cut-down version of the business package *Wordstar*.

Pocket Wordstar, available for the full Amstrad range, from 464 to 8512, now costs £49.95.

IBM portable

IBM has announced the latest stage in its plan for world domination – the long-awaited lap-held computer. Only a few months late, the IBM PC Convertible features a removable LCD screen, twin 3½ inch discs and a $2,000 price tag.

Scheduled for May release in the US, the newcomer is most interesting for its use of 3½ inch drives – a move certain to seal the fate of the ancient 5¼ inch and 3 inch versions.

No UK pricing or availability has been announced.

Shadow Ram

WATFORD Electronics has acquired the manufacturing rights to Aries Shadow Ram products.

Under the terms of the deal, Watford will be handling the Aries B20 and B32 Ram cards, the B12 Rom board and the B488 IEEE interface. Former managing director Peter Headland has been retained as a consultant by Watford.

Prospective customers can talk to Watford on 0923-40588.

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Letters

Clear view

Regarding the letter in issue no 11, from Mr Walker, might I suggest he tries playing *Movie* on a decent TV set. My copy is anything but jerky and the clear isometric view is, in my opinion, the best since *Knight Lore*.

There is nothing random about the way in which your character catches a bullet when entering a room, as all the characters except the heroine are always in the same locations.

Does Mr Walker not think that if the heroine was found in the same place every time, the game would become just a little too predictable?

Before finishing, could I make a plea to anyone who knows any of the less obvious passwords to send them in, especially the one to open the locked and unguarded room next to the one containing four TVs and a terminal.

Mark Rawson
Bolton
Lancs

Off-hand attitude

Although the PCW8256 continues to be marketed as a business machine, the question is whether it is suitable for the purpose?

How does a prospective user judge whether the Amstrad is suitable for his needs, other than by reading the commercially biased assessments published by the media, or by accepting the publicity material produced by Amstrad?

Having bought a machine, the user is almost entirely dependent upon the manuals supplied with the package. Are they good enough for the non-computer orientated newcomer?

When faced with malfunctions or the need for repairs, how does the newcomer deal with them in view of Amstrad's non-committal to long-term support?

Also consider some of the statements in Amstrad's sales brochure. "Each disc holds some 180,000 characters"; not true – the maximum capacity of a formatted CF2 disc is 173K. "The word processing software has been specifically written to provide all the features and facilities expected of a professional stand-alone word processing system". Yet features such as a spelling checker, word count, mailmerge and indexing – all commonly provided on professional wp software – are not included in *Locoscript*.

It's about time Amstrad matured and discarded its off-hand attitudes. If Amstrad is serious about its long term interest in the business computer market, it will need to drastically change its product support policy.

D A Snoad
Southampton

***Popular Computing Weekly* is not "commercially biased". But we do think the 8256 is a good machine representing excellent value for money. We'd certainly agree that the documentation leaves a lot to be desired, but Amstrad is far from unique in this respect.**

As to disc capacity, 173K is 177,152 characters, not a terrible shortfall. And as to "professional" software, *Wordstar* – the standard against which all others are judged – also fails to offer the features you list.

In short, if you want a full-featured, business micro with top-quality software and a service contract, there are a large number of manufacturers who'd love to talk to you. Simply wave a cheque for £5,000.
(This letter was edited for length)

Bonus points

I would like to add a few comments to your enthusiastic welcome (vol 5, no 10) of the QL *Scrabble*. First let me say that I also think it could be one of the best of the QL more serious games. But it has a few drawbacks which I feel could be overcome by the superior memory in comparison with the versions on other home computers.

1. The most annoying feature is the inability to challenge the computer when it puts down words that do not exist, and immediately adds the points. In my version, this happens at least half a dozen times in each game – a typical example would be the computer announcing, as its first move, the word "espuing", giving itself a bonus for a total of about 70 points! Surely the very nature of computers should lend itself ideally to having precise dictionaries, unless, of course, it is also programmed to be funny – but I feel the game is far too good for that.
2. The most desirable additional facility would be to let the player add and delete words from the dictionary, thus eliminating some of the anomalies. This would put it on a par with the original game.
3. The sound option does not work on my sample, and I wonder whether some of the loading difficulties I experience from time to time (my original copy failed to load altogether) may be caused by the over-enthusiastic application of the safety precautions necessitating use of two microdrives.

Finally, I must confess that I enjoy the game very much in spite of the few shortcomings and I think the sunny and joyful introductory screen is wonderful.

R B Vočadlo
The Uplands
Gerrards Cross
Bucks

"Could you give me an estimate for the computer, with an external disc drive, monitor, TV output – oh, and a disc drive built in . . ."

Hidden inside

I, like many other people, have waited for the launch of Sinclair's new 128K Spectrum and have read, with great interest, the various reviews of the pros and cons of this new machine.

However, one point that I have noticed and has not been mentioned before, concerns the General Instruments AY-3-8912 PSG. That is to say that locked away in that chip is an 8 bit parallel I/O port. Now, I have not seen inside the machine yet, but it must be possible to bring that I/O port to the outside world. The I/O lines from the chip are pins 7 to 14 while the data lines are pins 21 to 28 (D0 to D7).

It makes you wonder what else may be hidden inside . . !

D Hayward
Lane End
Whelford
Nr Fairford
Gloucester

New keyboards

While exploring the character set on my new Spectrum 128, I discovered where Sinclair has put the two new keywords in Basic. They have taken the place of two UDGs (T and U), replacing them with *Spectrum* and *Play*.

I have also discovered some editing facilities that are only usually obtainable using the extra keypad. If you go into Graphics mode, pressing the following keys will have the given results:

V – cursor to bottom of program.
W – cursor to top of program.
X – cursor to end of current line.
Y – cursor to beginning of current line.
Z – same function as choosing Screen after pressing *Edit*.

Stephen Ralph
High Wycombe
Bucks

Amstrad contracts

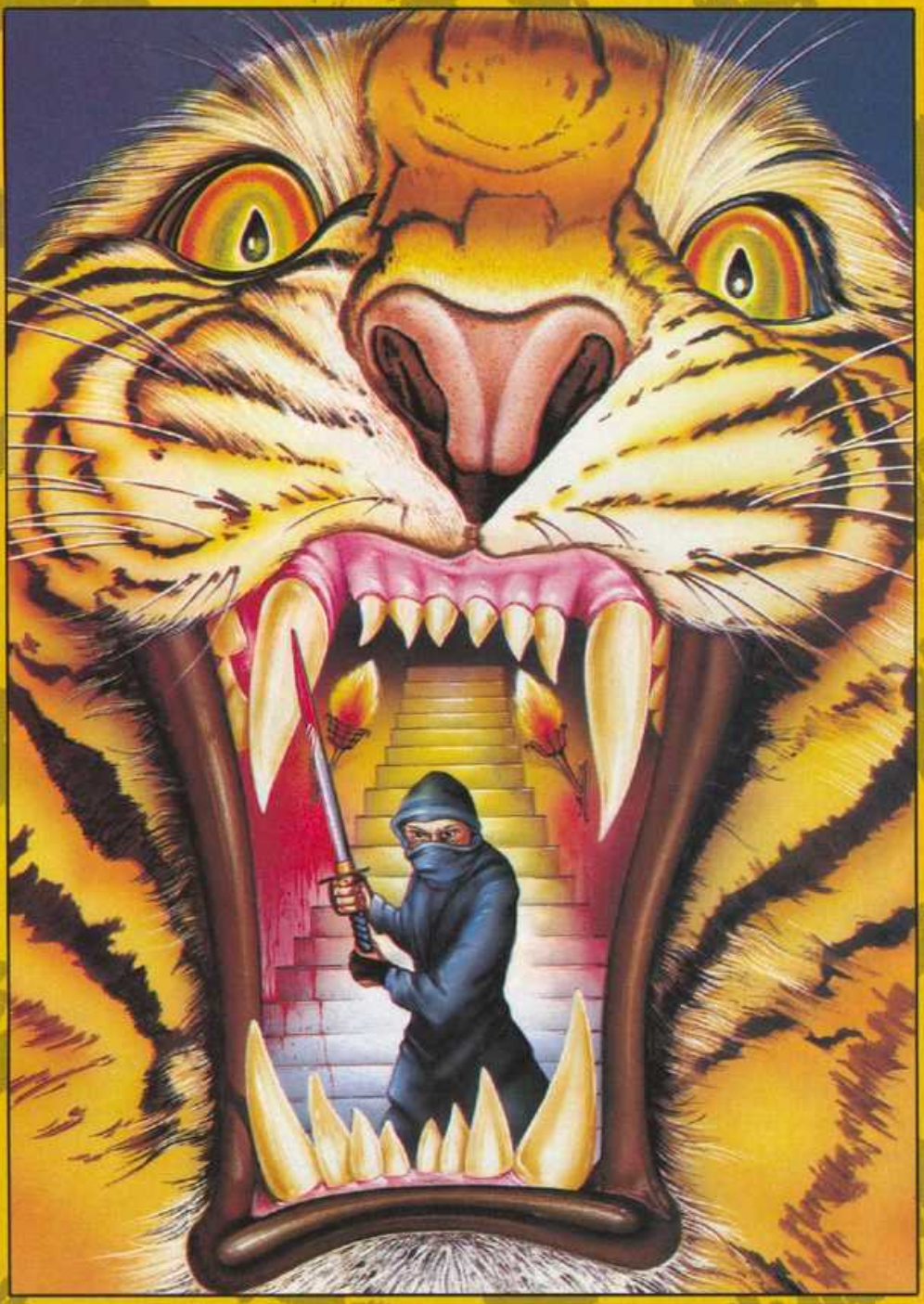
I am writing to inform your readers about Amulet, the international contact association for Amstrad users.

Amulet has been formed to promote Amstrad machines and to assist Amstrad users in whatever way possible. We will be offering contract with other users of similar systems, a comprehensive fault-finding service, personal reviews of hardware, software and books. We will also operate a newsletter.

Membership is open to anyone and details are available from the address below. We would also ask software and hardware suppliers to send us information on their products so we can compile a comprehensive directory.

Carl Stevenson
682 Wordsworth Avenue
Sheffield S5 9JJ

THE WAY OF THE TIGER



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Disc £14.95

MSX 64K Spectrum 48K Amstrad CBM 64/128

Gremlin Graphics Software Limited, Alpha House, 10 Carver Street, Sheffield S1 4FS. Tel: 0742-753423

TRIPLE-SCROLL

Screenshots from Spectrum 48K

EAST

SAI COMBAT

Set against a series of subtle backgrounds, Sai Combat has 8 skill levels and can be played by one or two players, with a choice of 16 moves. The combatant sprites are large and easy to control via keyboard or joystick.

Spectrum 48K £6.95

OR WEST

Spitfire 40

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Amstrad CPC £9.95
Commodore 64 £9.95 tape, £12.95 disk

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New expanded 128K Spectrum version with a full mission mode, improved sound, and more ground detail. Still only £9.95!

ONLY THE BEST

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MIRRORSOFT

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AMX MOUSE

It's been a couple of years since the mice started swarming in the micro market. Apple started it with the Lisa and Macintosh but was soon followed by IBM-compatible products from Digital Research and Microsoft, among others.

By far the most successful mouse breeder in the home computer sphere has been Advanced Memory Systems, which now caters for rodent operators on the BBC, Spectrum and Amstrad.

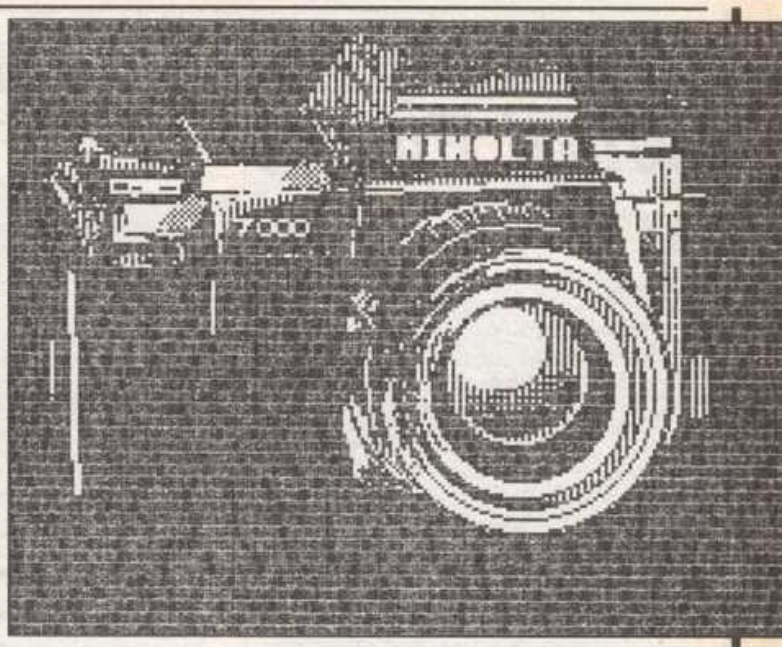
This new release is compatible with all Amstrad machines except the PCW 8256 and 8512. The package consists of the mouse and interface, and a collection of software utilities including the excellent *AMX Art* drawing program.

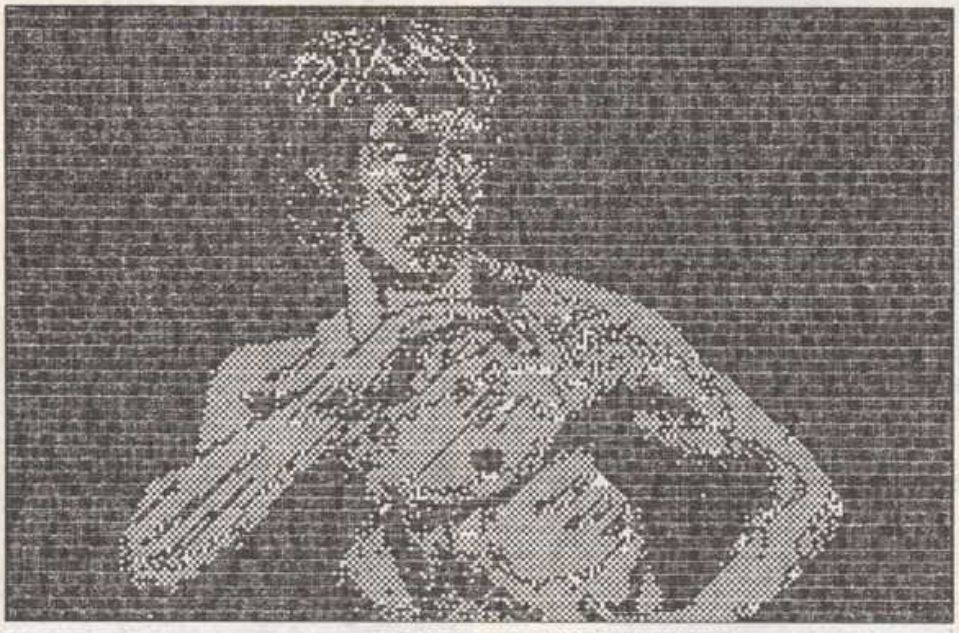
Hardware

Setting up the mouse is very simple. A two-way interface plugs into the Amstrad's joystick port, while the mouse itself connects to a 20-pin socket on the interface. Power is re-routed from the monitor, to the interface, and thence to the Amstrad itself. Switch on the power and away you go.

The mouse itself is perhaps the least satisfying part of the system, although that isn't a major criticism. It is a three-button model, which to the true mouse afficionado is two buttons too many. The idea of the mouse is to "point and click". It should be intuitive, but three buttons confuse the issue.

That said, the main source of irritation is the fact that the mouse tracks on a steel ball-bearing which makes it very noisy on hard surfaces, and badly prone to skidding. However, these are relatively minor criticisms. If you can find room on your desk for a rubber mat, the AMX mouse is reliable and accurate.





Software

The bundled software is undoubtedly the star of the show. The mouse is accompanied by four programs – *AMX Control, AMX Art*, an icon designer and a pattern designer.

AMX Art allows you to create four-colour drawings and diagrams using a variety of graphics tools. Operation is very simple: using the mouse, you control an on-screen pointer. Move the pointer to the required tool, click the *Execute* button on the mouse and the pointer changes shape appropriately. For example, if you select the pencil, the pointer becomes a pencil. You can then draw lines, or free-hand designs.

Other tools include an aerosol for spray-painting; boxes and circles – filled or unfilled; a paint bucket for selective fills, and a paint-roller. An enormous variety of fill-patterns is available but if the pre-set designs are not enough, you can use the pattern designer program to create your own.

Colour is easily selected, if somewhat limited. Of the four colours available, two must be black and white. The other two can be selected from "paint pots" in the upper corners of the screen.

A print-dump is provided within the package and this will drive Epson-compatible printers (which is just about every printer these days). A Citizen 120D was used to create the illustrations here. The major problem is that backgrounds appear to revert to black, which – apart from any artisitc merit – will use up your printer ribbons at a fearsome rate.

In addition to the expected functions such as saving and loading of picture files, *AMX Art* also allows you to print text in a variety of styles including bold and italics.

AMX Art is the kind of program that will appeal to anyone – doodling is a compulsive habit. But *AMX Control* will have programmers licking their lips. This is the software that reads and acts upon the signals generated by the mouse. What makes it so attractive is that it is programmable.

The program provides 14 new Basic commands, allowing you to create your own graphics-based programs incorporating windows and icons, all under mouse control. Although the 14 commands appear simple enough, they are extremely flexible, and hence powerful.

You can read and set the pointer position under mouse control, read button-clicks on the mouse, select and move icons, and so on. *AMX Control* allocates separate pointers for text and graphics cursors, so you can mix text and graphics quite easily too.

As if the Basic commands were not sufficient, hard-bitten programmers can use their machine-code programs since the documentation provides all entry points and parameters for the routines.

Conclusion

At £69.95 for the complete package, the AMX Mouse represents excellent value for money. The combination of hardware and software, together with AMS's plans for future support make it the obvious choice for anyone interested in graphics on the 464, 664 or 6128.

Apart from the possibility of writing your own software for the mouse, you can incorporate *AMX Art* pictures in your own programs too. What more could you want?

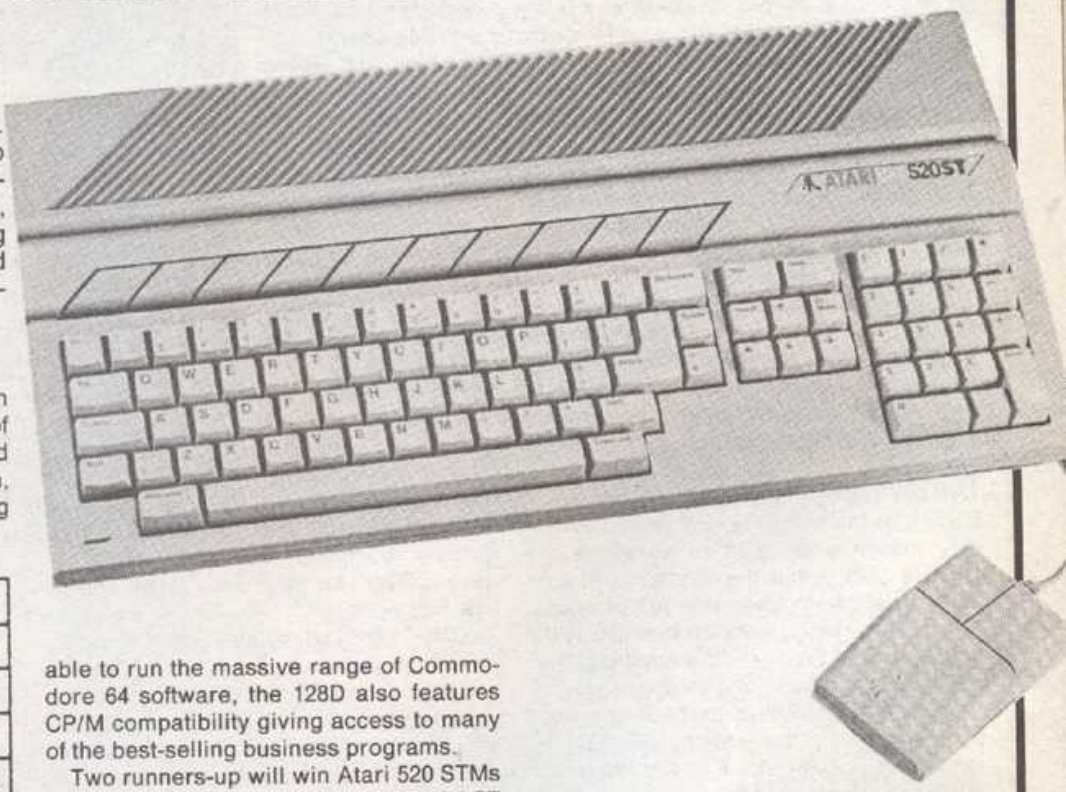
Peter Worlock

Hardware *AMX Mouse* **Micro** Amstrad 464, 664 and 6128 **Price** £69.95 **Supplier** Advanced Memory Systems, 166/170 Wilderspool Causeway, Warrington WA4 6QA (0925-413501).

Competition

Win a top machine with our Word Puzzle

You want prizes? We got prizes. Three great machines and 25 top games from Mirrorsoft to be given away in the next few weeks. Well, what else were you going to do during the summer while the rains pour and England's cricketing humiliation continues apace?



Prizes

First prize is a Commodore 128D with colour monitor. At a normal retail price of over £600, the 128D offers excellent sound and graphics, 128K of Ram and a built-in, double-sided disc drive. Besides being able to run the massive range of Commodore 64 software, the 128D also features CP/M compatibility giving access to many of the best-selling business programs.

Two runners-up will win Atari 520 STMs – the latest model in Atari's successful ST series. The STM can be used with a TV set, so the winners will not need to invest in a monitor immediately. Because all ST software comes on disc, we've decided to be really kind and throw in a dic drive with the machine.

And in a breathtaking display of generosity, we're also offering 25 Mirrorsoft games to the runners-up. Commodore 64, Spectrum and Amstrad owners will receive a copy of *Spitfire 40*, while BBC owners will get *Strike Force Harrier*.

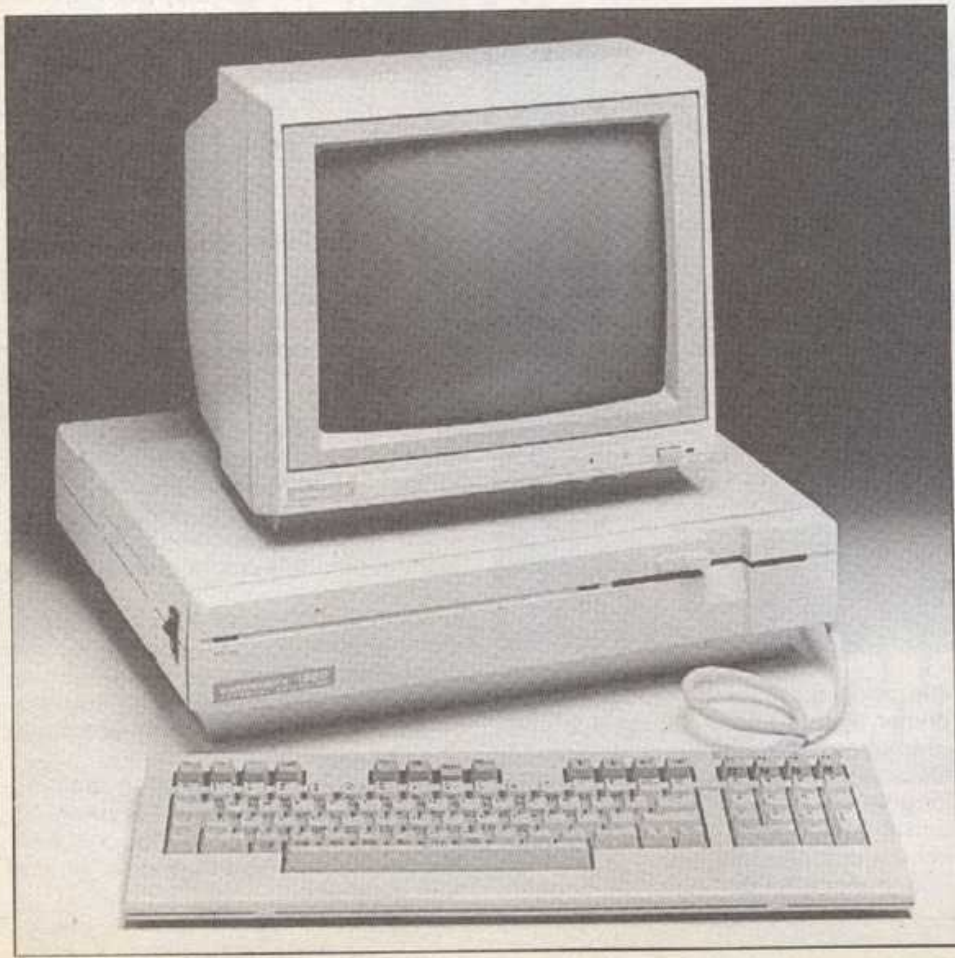
A	H	M	R	T	W	O	F	W
R	U	O	L	O	C	Z	O	H
O	Q	N	T	B	Q	U	D	A
B	O	I	R	A	T	A	W	R
T	O	T	F	M	D	Q	T	D
U	U	O	H	R	P	Q	Z	W
P	Q	R	E	B	M	U	N	A
N	H	Y	C	H	B	I	B	R
I	D	E	W	U	Q	C	D	E

How to enter

This week, and in the next two issues, we'll be printing a word grid. Each grid contains six words related to microcomputing (for example, if the word "elephant" crops up you can safely ignore it). The words may be written forwards or backwards, up or down (but not diagonally).

Once you've found the words each week, hang on to them – there will be a fourth part containing a twist in the tail, together with the entry form. Ah, the suspense.

Good hunting.



CAD-64

The sleek basketwork of a CAD-plotted jet superfighter/interplanetary craft has graced many a whole-wall computer display in sci-fi movies. *CAD-64* by Orpheus advertises 'hidden line' display as one of its options, as if the whole visual fascination of CAD were not that you can see through it.

Look into the nose and you can see the tail. Look into the Death Star and see the throbbing power pack at its heart. Hidden lines, phooey.

But I am not articulating a draftsmanlike point of view. Having CAD'd your superfighter, you have a right to know what it might look like as it rolls onto the launch pad. You want hidden line display, graduated shading, colour and sleek lines. *CAD-64* gives you all these things, excepting only the latter. And, to be fair, it only costs around £14.95.

CAD's purpose is to allow three-dimensional images (see-through or otherwise) to be built up from precisely specified cross sections, and subsequently rotated, stretched, shrunk, foreshortened, added to, modified, worked up into a sketch and even animated. Created on screen, the object (so the idea goes) can have many design problems examined and sorted out long before prototype stage. CAD is making inroads into all areas of technical drawing, but that's just the start. CAD originals can be subjected to stress analysis, for example.

It's unlikely that CAD-64 (for reasons which I'll go into) will be used for designing just fighters, at least so far as stress analysis goes, although it is certainly capable of drawing them, but it could be a great way of getting into the principle of building up three dimensional objects from two-dimensional planes (or 'slices', as they are called here), and examining forms and perspective.

3-D shading and the full C-64 colour palette is available according to the manual, though the program seems to default to shades of grey.

Entirely menu- and icon-driven, various sequences click you through the menus as part of the creation process. A tutorial sequence building up, rotating and animating a cube is in the handbook. Starting from a single coordinate, you can select the 'regular figure' icon from the *Create* menu, moving automatically to the *Amend* menu, from which 'add a slice' is selected for the *Add Slice* menu (the cube needing no actual amendments such as *Stretch*, *Shrink* or *Rubber Band*) in order to define the next cross-section. The slice being added puts us back at the *Amend* menu, from which the *View* icon is selected to display the completed figure.

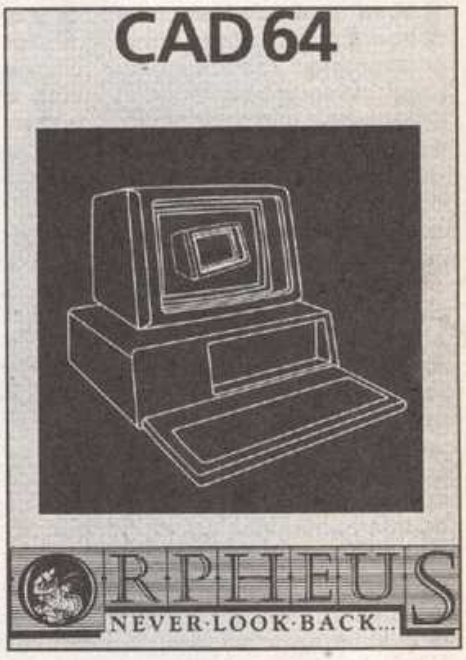
Crumpled

To be honest, it looks more like a British Rail sandwich than a cube. This inevitable consequence of the monitor's limited resolution improves or deteriorates according to the exact rotation of the figure. It doesn't detract from the fun, so long as you are aware of it. One of the handbook's strong points is that it uses exact printouts as illustrations, but it might have done itself a favour and included one or two more complex constructions in the book, to show what can be done.

It was a little daunting to see my carefully distanced, magnified and rotated cube looking like a crumpled biscuit packet at one point in its travels.

Figures can be animated simply by redefining their positions and then running the frames in sequence. *Time* and *Restart* options vary the speed and run the sequence indefinitely if desired.

I'm developing an allergy to icons, and my heart sank when I saw 12 separate icon menus, but they are actually easy to learn and use. The 'hunt' feature for the icon pointer (a moving finger) means time isn't



wasted skidding about homing in; counting values up or down gets faster the longer it's held, so that large parameter changes can be done quite quickly; a joystick is recommended, but keyboard commands are perfectly adequate.

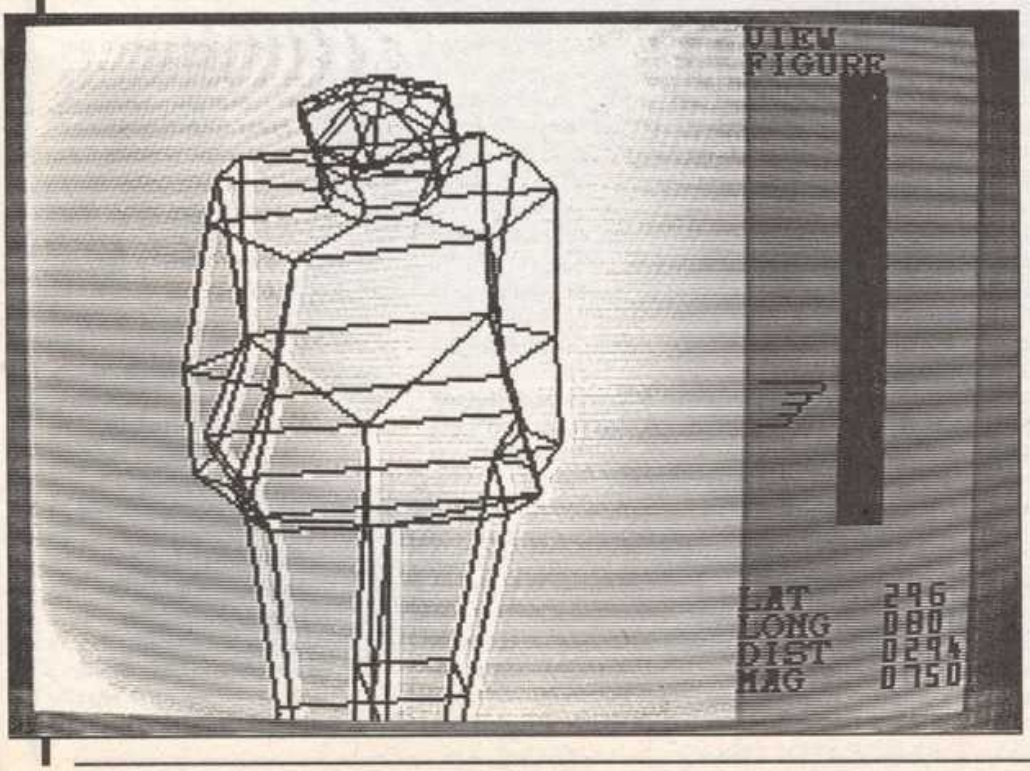
Once you have your figure, the *Edit* menu allows alterations such as adding or deleting bits, adding text, shading or filling parts of the image, or adding patterns. The 'doodle' icon allows the cursor to act as any one of 96 paintbrushes (one third each for draw, invert and erase); 'shade' will allow any proportion of pixels to be filled, giving a rough and ready graduated shading. Another menu allows axes or a grid to be drawn over the screen.

Either the finished design, or the full data file, can be saved. But for printers, the package bears the warning, "*CAD-64* prints to an Epson compatible printer connected via a standard Stack/Centronics type cable to the user port. If you have a different type . . . contact Orpheus in writing, who will try to assist you."

There are some silly mistakes in the handbook, but nothing lethal; there is also (very useful) a glossary which defines precisely the terms the handbook uses.

For disc users, there is a selection of preprogrammed figures saved for experimentation. I am told, by one who has tried, that his robot appeared very small, upside down and inverted. From the people whose co-ordinates can turn a cube into a British Rail sandwich this does not surprise me, but it doesn't worry me either, because this is a fun package.

Helen Armstrong



Program *CAD-64* **Price** £14.95 **Micro** Commodore 64, 128 in 64 mode **Supplier** Orphens, The Smithy, Church Farm Estate, Hatley St. George, Sandy, Beds.

Prospell

I've always looked on *The Word* spell checker from New Star as a Rolls-Royce of a program, very hard to equal, almost impossible to better on the advantage of random access disc files, available from CP/M but not from the cheesy Amsdos, to help speed up the dictionary reading process.

I, therefore, had some misgivings about *Prospell* from Arnor. I needn't have worried. Arnor has done it again with another excellent release. I wouldn't dare say that it was better than *The Word* but it is as fast, nearly as versatile and it has the distinct attraction to 464/664 owners that you don't need CP/M Plus to run it.

Prospell can be used as a stand alone utility – you don't have to have *Protext* to use it, although they superbly complement each other and if you do have *Protext* files can be handled whilst they are in memory on Rom – very useful for correcting errors that you were 'convinced' you knew the correct spelling for.

As well as *Protext* documents, *Prospell* will handle plain Ascii or also, very sensibly, *Wordstar* format documents which are so full of control codes and 'hidden eighth bits' that they normally throw other text editors into fits. You are supplied with over 40,000 words in the dictionary, (on the Rom version about 10,000 of the commonest words are apparently on the chip making it even faster and freeing more disc capacity). You can easily view, add and edit words, delete words you are unlikely to use or build an entirely new dictionary from scratch.

Unrecognised words can be corrected, ignored, added to the dictionary, viewed in context and *Prospell* will also try to look up the word it thinks you meant to spell.

An outstanding buy for anyone who uses a word processor – an essential buy for anyone with *Protext*.

Tony Kendle

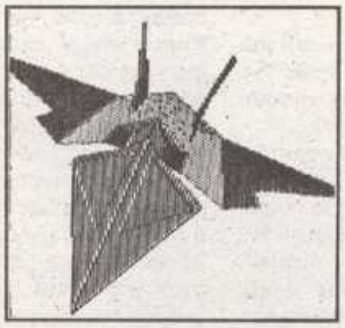
Program *Prospell* **Micro** Amstrad CPC range **Price** £24.95 disc £34.95 Rom plus disc **Supplier** Arnor Ltd, The Studio, Ledbury Place, Croydon CR0 1ET.

Super 3D Plotter

I have always found a good graphics utility fascinating to delve into, notably for the chance to actually be able to draw and design in a neat and presentable manner, unlike my pen and paper experiments which are usually lamentable.

This package for the Atari has a number of extremely useful options, a very user-friendly manner and a promise from the author that he has tried to allow the user almost limitless possibilities within the confines of 48K. One drawback of this 'wide open' design is the chance of an unexpected bug or two, but, the software has been error tested quite extensively and I found no problems.

The most attractive option is instant animation, and there are a number of examples on disc for experimentation. Once the image is on screen, you can rotate it through all three planes, zoom in and out, and use true perspective or magnification. In my example (having sat back and admired by handiwork) I had created a vector type 3D cup and by using Hidden Surface Elimination and colour filling, turned it into a solid shape with an open end that I could look into or even more inside of.



The manual states that whilst in animation, the screen updates at three to six screens per second which is quite fast. Obviously, the more complex a design you create the less likely you are to see a nice smooth movement.

If you have a joystick, you can use this program without touching the keyboard, in fact, I found using it a positive joy to behold – no messing about, just set simple X,Y,Z coordinates and away!

All three graphics modes can be used, but I found more colour and faster animation is available in low-res although obviously a much more detailed image can be created in hi-res, but these modes can be changed simply by pressing the Option key without effecting your screen masterpiece.

Thoughout, this package tries to be friendly and indeed the manual is written in a tutorial manner without assuming you have prior knowledge of plotting, and, at certain points, the author is quick to point out a few limitations in the program which is an honesty sadly lacking in other utilities. If you are looking for a comprehensive graphics package, you won't go far wrong here.

Andy Moss

Program *Super 3D Plotter II* **Micro** Atari plus disc **Price** £29.99 **Supplier** D+M Software, 292 London Road, Westcliff-on-Sea, Essex.

Flexi File

Flexi File is a powerful and cheap data base (cheap as data bases go). It runs under CP/M and so it is compatible with a wide range of micros. The version reviewed was installed for and used on an Amstrad PCW 8256. *Flexi File* has many powerful features, often only seen on data bases at two to three or even more times the cost.

One of its most powerful feature is two levels of access. There is supervisor access and user access. The supervisor can add, change or look at data whilst the user can only look at data. Both levels are accessed by passwords and the supervisor can change passwords.

There are a couple of very restricting things about *Flexi File*. Firstly I found the input data screen screen size very limited in area; only 80 columns X 17 rows, whereas some of the more expensive data bases have over 100 columns available using a scrolling screen. Although the input data screen size is relatively small, the report size (output screen) is fairly large (117 columns).

The next minor problem is that you can only have 20 fields, with a maximum length of 80 characters or if it is a key field – the one used for sorting, then the maximum length is only 20 characters.

The only other problem is the manual, which I would rate as worse than poor. It does not tell you nearly enough about using *Flexi File*, and although 52 pages may sound detailed it, in fact, lightly skips over or even totally misses out a number of the features of *Flexi File*. If you know a little bit about computers then you will find that *Flexi File* is simplicity itself to use, but if you aren't too sure about general computer use then the manual's instructions (or lack of them!) can be quite a problem.

It's not quite all bad, it does give a glossary section, explaining what all the jargon you may encounter means.

But I would hope that this is only a temporary manual and that many of the features will be explained better in a future edition.

Apart from these problems, I have found that *Flexi File* compares very well with *Cardbox* which costs £99. They both have basically the same features.

Flexi File allows you to have 4 input screens and 8 output (report) screens defined, you can also have 8 selections defined, at one time or search on any of 4 key fields. The program makes extensive use of cursor menus, making it easy to use even if yuou've no idea what you're doing.

Flexi Write (mentioned in the prices) is a word processor with mail merge facilities linked to *Flexi File*. It too uses cursor menus a lot. It costs £30 if bought on its own, but only £10 if purchased with *Flexi File* (if you have already bought *Flexi File* then *Flexi Write* is still only £10).

Although *Flexi Write* is generally not as good as *LocoScript*, as supplied with the 8256, mail merge is a powerful feature and worth £10.

David Wallin

Program *Flexi File* **Micro** Any with CP/M+ Installed versions for PCW 8256, CPC 6128 & Others **Price** £39.50 (£49.50 with *Flexi Write*) **Supplier** Saxon Computing, 3 St. Catherine's Drive, Leconfield, Beverley, North Humbershire HU17 7NT. Tel: 0401 50697.

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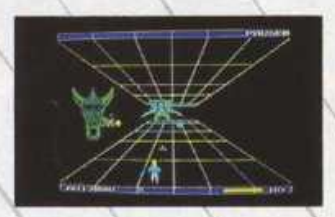
S Y S T E M 3



ACTUAL SPECTRUM SCREEN

Coming Soon: Commodore 64, Amstrad, Atari

The French collection

After the US software invasion, an assault is coming from the other direction. Graham Taylor investigates two hot games that have arrived from across the Channel.

There used to be a time when the arrival of software from foreign lands used to signal much hilarity in the office. It was sneeringly assumed that we Brits were the only ones capable of notching up the high scores in the multi-player arcade game of software credibility.

Not so now. With Alan Sugar filling the shelves of department stores across Europe with Amstrads of every description (sometimes called Schneiders), it was inevitable that the good stuff from other countries would start filtering back to Blighty.

Ere Infomatique began in late 1984, started by two French record company executives. It followed the pattern of most software houses, beginning with the ZX81,

Get Dexter: **Beware the blue pad**

moving through the Oric and Spectrum, and now devoting most of its attention to the Amstrad. With a flight simulator called *Delta* and a pinball game (released by PSS here) called *Macadam Bumper*, it has grown to become one of the top five companies in France.

PSS signed a licensing deal with Ere Infomatique and has just released two excellent new games from the company – *Crafton & Xunk* (now called *Get Dexter*) and *Eden Blues* (now called *Doomsday Blues*.

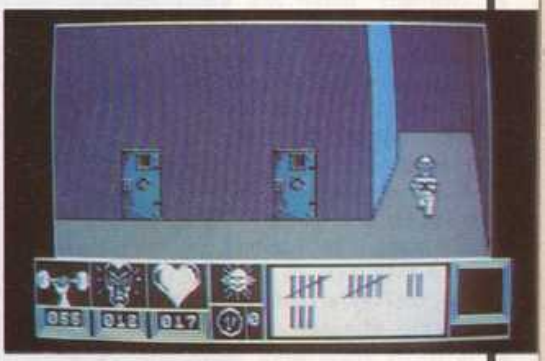
Get Dexter: **The professor has a clue**

Get Dexter

Almost certainly the best *Knight Lore* style game ever produced, *Get Dexter* takes the original Ultimate gameplay idea of 'do whatever you like with anything you can find' and adds very high-res multi-coloured graphics and a stylish graphic design derived from French comic books.

Dexter, possibly the only arcade game hero ever to wear what seems to be a bobble hat (probably a new kind of chic which has not yet reached the King's Road), moves around a curious world

Get Dexter: **How to get the bottle?**



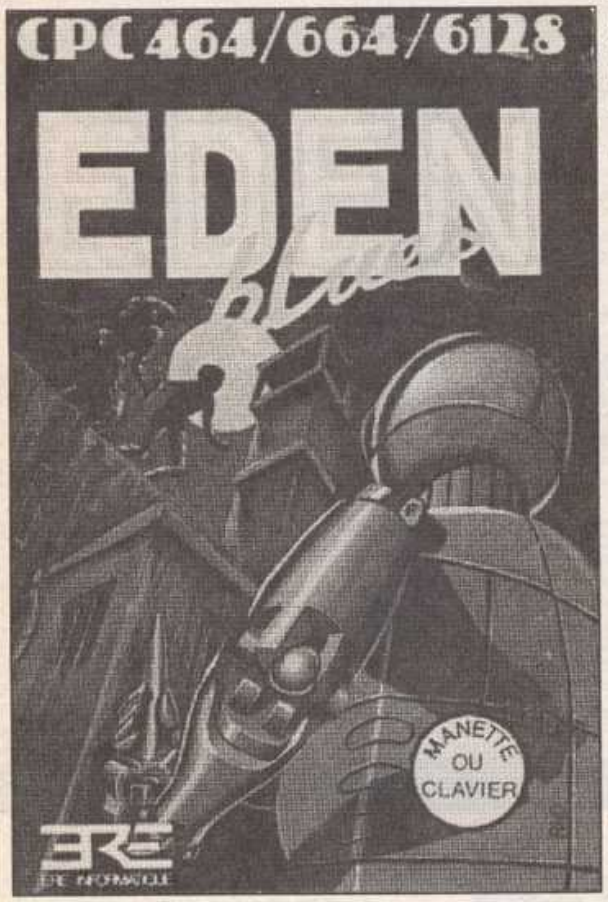
Doomsday Blues

which mixes scientific hi-tech – computers and consules – assorted hospital wards and assorted odd objects like bottles of wine and flowers. Each object is beautifully clear – you can almost read the labels on the bottles and count the blooms on the flowers. There is, however, much method in all this methodness. Things may seem irrelevant but as you play the game you realise everything has a function . . . even . . .

The Dog

Well, maybe it isn't a dog, it acts like a dog but looks like a sort of vacuum cleaner. It

foams around and follows you when you leave a room. You can call it to your side by pressing a key, but why would you want to? (See the clues printed below.)



Original French Inlay

Game objective

Disable a master computer which does all the usual things a master computer can do. To disable it you must discover a password, different parts of which are known by a series of much backed professors. To get the truth out of the professors, you need the syringes full of truth serum. To get those you need . . . well, you get the idea.

Playing the game

The first thing is to discover the uses for the various objects scattered about the rooms. Some of these affect the countless blue aliens that fill most of the locations. Other objects are specifically designed to inhibit the roving punk and the blond nurses. (Again see the clues printed below.)

Objects may be pushed and pulled, picked up and dropped. Combinations of these actions and a bit of imagination are needed to get to some of the objects which are located on shelves and ledges around the rooms. Some locations are hidden and may be discovered by judicious poking around.

Tips on playing

1) Doors are opened by the use of special coloured chips found scattered around the rooms. Match the chip colour to the door colour.
2) Blond nurses are attracted to flowers.
3) Punks like wine.
4) Blue aliens don't like bottles of acid dropped on them.
5) The frisbee-like objects stop all baddies in their tracks for a short while.
6) One of the hidden rooms is behind a wallchart.
7) The dog is useful – you can stand on him for extra height, use him as a block against aliens in a tight corner or call him so that he runs over pads you are uncertain about – his electronic bark indicates whether they are safe or not.
8) You can (slightly) control your jump when you run on to a circular jump pad – this facility can be useful.
9) The room with the vicious iron gates *is* crossable – with patience.

Doomsday Blues

A nicely animated and illustrated strategy game where planning is all. It looks like an arcade game, but the skills required to crack it are more refined than first appearances might suggest.

Set mostly in a walled prison, your objective is to discover the whereabouts of a woman held captive there. Getting her involves negotiating a series of robots, and drinking large amounts of coffee.

The fully animated central figure is garbed in authentic stripey prison uniform. Aside from walking and running, he can manage such sophisticated feats as kicking doors down and dying by means of a ritual dance.

Game Objective

To rescue the usual helpless lady prisoner, held captive in a prison run by robots. You, too, are a prisoner and must first figure out how to leave your cell. The game is played in real time – the colours change as night falls and days are recorded by marks on the prison wall.

Your status is represented by three icons, indicating current values for strength, courage and fitness. In order to survive in the game, all of them must be kept high.

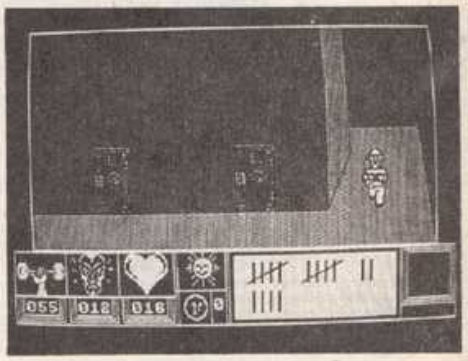
The means to do this must be discovered, but the coffee helps (for my money you need strength, courage and fitness in that order to drink French coffee in the first place but let that pass.)

Playing the Game

After escaping from the cell you'll need to map out the doors of the prison fairly carefully. Passing through some doors will simply leave you locked in another cell and more energy will have to be expended escaping again. Drink of one sort of another is vital, so finding some early in the game is essential.

Tips on Playing

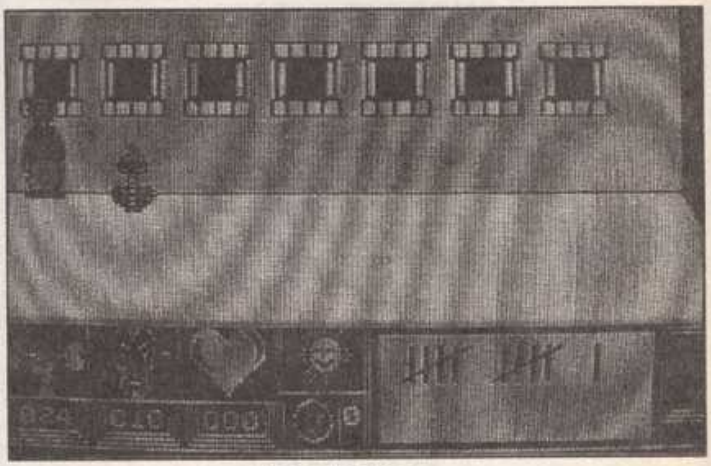
1) Pay very careful attention to the levels for strength, courage and fitness. You will notice that one of these runs out very quickly if you enter the vicinity of robots.



Doomsday Blues

2) Doors are opened by putting the boot in.
3) At night tip-toe quietly past robots and they won't wake.
4) Sources of wine and coffee are both found in the cellars which should be discovered early on.
5) At the beginning of the game it is probably better to allot more points to strength and courage for door kicking and robot confronting respectability.

Both *Get Dexter* and *Doomsday Blues*



Doomsday Blues

are available from PSS at £9.95. They are currently only released for the Amstrad, but a Commodore version is certain and a Spectrum version is planned. The next game released under the current Ere Informatique licensing deal will be *Contamination* – a arcade/strategy mix dealing with deadly diseases that break out globally. A follow-up to *Get Dexter* is also expected.

Evesham Micros

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Citadel

Citadel could be described as the ultimate arcade adventure for BBC & Electron owners.

Written by Michael Jakobsen using Scandinavian programming techniques, *Citadel* boasts impressive full colour graphics and perfectly smooth scrolling.

The adventure contains over 100 different screens, each of which have to be skilfully negotiated avoiding the deadly monks and other weird and wonderful creatures which inhabit the castle and its surrounding environs.

Extra energy points may be gained by solving the many puzzles encountered in the adventure and by collecting the special energy flasks.

The story line, as you'd expect in an adventure of this quality, is a complicated one. Each of the locations must be explored in your quest to find five crystals which must then be deposited at the Temple on the island. This activates a teleport system which transports you to the planet Codor. You must find a statue there, which when brought back to Earth activates a field of anti-matter, destroying the teleport and Marduk the Dictator's plans to teleport his invasion forces to Earth.

An interesting feature of this program allows you to play with either a male or female explorer. Your choice, however, makes no difference as far as the game play is concerned, but its a nice touch.

This is a well constructed adventure, featuring a host of special objects, such as trampolines and cannonballs, which can aid you in your quest.

The first adventurer to complete *Citadel* with the maximum 99 points will be rewarded not only with an amazing audio-visual display, but will also be presented with a personally engraved shield and a cheque for £200.

Well worth the investment, even if you don't win the prizes.

Stuart Low

Program *Citadel* **Micro** BBC/Electron **Price** £9.95 **Supplier** Superior Software, Dept. C, Regent House, Skinner Lane, Leeds LS7 1AX.

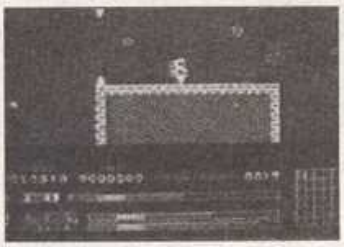
Phantom Asteroid

It's funny isn't it, how at one time any program that sold for under two quid was labelled as an essential purchase as long as it had some decent graphics and a few jolly tunes.

Enter Mastertronic, which has spoilt us with so many excellent releases, that anything so-so is now looked upon with disdain.

So it goes for this game, which really has some rather ordinary Rob Hubbard sound, (which is quite good by any other standards) a very thin plot, and colour which isn't really up to much.

The story concerns an asteroid which is hurtling towards Earth and has you as a sort of *Jet Man*-like character having to wander around its maze-like interior, in order to collect 36



uranium cubes which as usual are scattered somewhere around the place.

The usual motley crew of monsters abound, which are very nicely presented and can be bumped off with the standard issue zapp gun.

The sting in the tail in this game is that after collecting your cubes, you have five minutes to get off before the whole thing explodes and goes up in flames!

Although certainly not a classic Mastertronic release, there's enough action in here to keep you busy for a while, without burning a hole in your pocket.

Andy Moss

Program *The Phantom Asteroid* **Micro** Commodore 64 **Price** £1.99 **Supplier** Mastertronic, 8-10 Paul Street, London EC2.

Time of the End

Time of the End is the first text-only adventure from, so far as I know, a new company. If the quality is maintained as high on future games as found in this one, I doubt if they will remain unknown for long.

The theme of the game is not very original but, what makes this adventure rise above others is a cleverly woven plot which both amuses and baffles you from the first location.

Unfortunately Earth is in trouble again, this time from a bunch of very nasty, bored Aliens. It would appear that their form of enjoyment is to cause endless problems for our poor old planet, this comes in the form of earthquakes, tidal waves and other so-called 'freaks' of nature.

Out for an evening's stroll you are suddenly transported to the Aliens planet and learn what you must do to save the Earth. On your return, you discover you have been changed oddly enough into a bird, so your first task is to resume human form.

Various characters will help you throughout your mission and you will even meet the original Kilroy, of graffiti fame, it seems he's been trying to warn the earth about the Aliens for some time but nobody took any notice.

Keith Milner, who wrote the adventure, seems to have worked out all the different answers to your verb/noun input and very funny they are too. All in all an excellent adventure, not very difficult, but it should keep the ardent gamester busy for a fair while.

A sequel is promised and I for one look forward to it.

Roger Garrett

Program *Time Of The End* **Micro** Spectrum 48K **Price** £3.95 **Supplier** Mandarin Adventures, 14 Langton Close, Woking, Surrey GU21 3QJ.

Classroom chaos

Holy St. Trinians! Someone's nicked the schools Challenge Cup and the Head thinks it's you. Cripes, the only way out is to find the person who did the ugly deed and clear your name before Head catches you!.

No this is not another dubious epic from St. Brides but a school girl jape from pretenders to the Mastertronic throne – Atlantis.

This is a very witty and enjoyable romp set in a mad-cap school for girls. As this is a *Quill*ed Budget priced adventure it's an absolute must for anyone who likes their adventures less po-faced and pixie orientated but still enjoys solving complex puzzles – all for a couple of pounds.

The whole game is beautifully set out for you in the opening screens with crazy characters like Swotty Noall, Miss Hassle and Mr Potts introducing themselves to you and then going about their business and sometimes returning for a further chat.

There is a graphic a quarter screen in size for each location which is drawn instantly and below which the text scrolls. There are some neat touches like a small cup design instead of a cursor and the imaginative use of colour – very tasteful. An adventure which is easy to map, very user friendly and very funny!

Teachers almost always mean danger, though some may offer indirect clues. Be wary of Miss Birch who will grab you by the ear and ask a question – get it wrong and it's off to the adjustment room with you to cool off.

In fact if any of the teachers find you, you will be asked an on the spot question, usually based on General History – keep some reference books handy – you'll need them!

Although humour runs throughout this adventure, solving it is no easy feat and I fear it will take many save and loads before the truth will out. The key seems to be the playground – there you will find cryptic information about the whereabouts of the missing cup.

I thoroughly enjoyed the game and recommend it.

Andy Moss

Program *Classroom Chaos* **Micro** Spectrum **Price** £1.99 **Supplier** Central Solutions, 500 Chesham House, 150 Regent St., London W1.

Special release

We continue this week with Christopher Hester's tips for the excellent *Mercenary* from Novogen. You may remember that we left you last week with details of the types of ships available. Chris continues with tips on how to use one of the features of the game to your own advantage . . .

"Now for some advanced tricks . . . it says in the instructions that *Ctrl-Q* will place you near a city building and give you a new ship if you crash the old one far away from the city. It also says that the price of this is that any objects you are carrying will be scattered about. While this is true, and it is not too difficult to fly over the city and retrieve the scattered objects, the best idea is to drop every object *before* you press *Ctrl-Q* so you aren't carrying any and so none can be scattered. You just climb into your new ship after pressing *Ctrl-Q* and pick the objects up again.

"Now here's an amazing fact: you can *return* to Targ (the planet you wish to escape from) after you have escaped. Normally to finish the game, you either buy or steal the Intergalactic Craft and the view switches to all stars and then the author congratulates you on escaping. The game then says 'Game Over' in an infinite loop. You are stuck out in space now. Or are you? Remember what to do if you go too far from the city? Simply press *Ctrl-Q* again (even though you are out in space) and you will be back in the city. You can then play the game as much as you like, the only difference being that it keeps saying 'Game Over'. You could get more objects, explore or whatever.

"However, to make this effective you must again *drop* all objects before hitting *Ctrl-Q* and even though you are out in space you will hear them drop. They cannot be retaken, but that doesn't matter as you need to drop them to stop them being scattered randomly when you press *Ctrl-Q*. Also you need to press *'L'* first to leave the ship. Then press *Ctrl-Q* and you will see the city again. You will be in a new ship so press *'L'* again to leave this and you will find that all your objects will be there in front of you. If you climb back into the Intergalactic Craft, you go straight back into space and the procedure can be repeated indefinitely – flicking between space and the city. Consequently, there is never a 'Game Over' – you can continue to play. Here are the last few tricks.

"For an amazing set of messages, don't buy the ship at the start of the game and leave the game running – don't even move the joystick. These messages are quite funny but they stop when you see 'Where Are You' on screen. For more amusing messages move the joystick. 'Ah! You're back!' says the computer.

"Finally a trick with the lifts. When you are going up from the hangar, drop an object whilst you can still see the hangar walls. When you go back down in the lift you should see it hung from the ceiling and you can walk underneath it. Good for a laugh! I think that's all. There are actually still some objects that I have found no use for."

Many thanks for those very comprehensive tips, Chris, now we have to look forward to the promised *Mercenary 2* (with visits to several planets) and maybe conversions for some different computers.

I was recently having an interesting conversation with David Jones, the talented author of the Mastertronic *Finders Keepers*/*Spellbound* series – easily the best value games around, providing superb quality at a bargain price. Well, it looks like they are soon going to be even better.

David tells me that his next game, featuring the same Magic Knight character (but apparently set on a spaceship!), will be a 128K special – out first on the new Spectrum. 128K Amstrad, 128K Commodore and Atari versions should also appear. A cut down version will also appear later for the small memory models of those machines. David has also hinted that there may be a special release of 128K versions of *Spellbound*.

The latter game has prompted a string of letters asking for help, and as far as I can tell no one has finished the game yet. You will be pleased to hear that David has promised us some tips for the game very soon.

Anyway, for those that can't wait, you will be pleased to cast your eyes over this crop of pokes for the Spectrum from Paul Miller, starting with *Spellbound* of course. It won't help you solve the puzzles, but it will mean you survive long enough to try to find the answer.

Spellbound – Spectrum
Type in *Clear 26000* Then *Load "" Code*. Start the tape. When the game has loaded use the following: *Poke 27871,0* (stops strength loss walking), *Poke 36133,0* (stops strength loss in the odd ballroom). To run the game enter *Randomize Usr 26643* as a direct command.

Sir Fred
Make sure Sir Fred is sitting down, then press Symbol Shift D and P. At the same time you should hear a scream from your computer and then away you go with extra lives.

(Just a note here – you may have seen the Amstrad version of *Sir Fred* 'reviewed' in other magazines but in fact Mikro-Gen says that it isn't planning to release the game unless the Spanish authors can fix some bugs in the program).

Rocky Horror Show Spectrum
For unlimited time, use the following program:

```
10 CLEAR 65000
20 LOAD "" Code
30 Poke 65310,205: Poke
   65311,211: Poke 65312,
   255
40 FOR A=65491 TO 65498:
   READ B: Poke A,B:
   NEXT A
50 RANDOMIZE USR 65281
100 DATA 62,0,50,181,190,
    195,190,131
```

Saboteur – Spectrum
For unlimited energy and time, load the game with this program:

```
10 CLEAR 25200

20 LOAD "" Screen$

30 LOAD ""

40 Poke 29894,0: Poke 46998,0

50 RANDOMIZE USR 63972
```

Robin O' The Wood
Merge the leader, then enter the line **1035** *Poke 49911,00*. Now enter *Goto 1000* for infinite lives:

Rockman
Level E 1st Code ONYX
Level I 2nd Code GURU
Level L 3rd Code SAGE
Level F 4th Code CLAW

XCEL – Spectrum
This program gives 255 lives and you start from the place you die:

```
10 CLEAR 23999: LOAD ""
   Code
20 Poke 65031,205: Poke
   65032,192: Poke 65033,254
30 FOR A=65216 TO 65228:
   READ B: Poke A,B: NEXT A
40 RANDOMIZE USR 65000
100 DATA 62,255,50,148,
    155,62,0,50,157,180,
    195,160,154
```

That's all for this week – see you soon.

Tony Kendle

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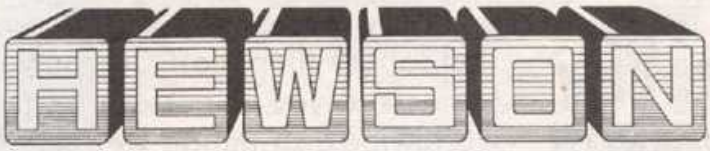

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Sudden death

First this week, a couple of addresses that I failed to mention: Automata, whose 10-pack I discussed in Volume 5, No 10, is to be found at PO Box 78, Southsea, Hants PO4 9SL. Camel Micros, whose Camel Adventure Club I looked at the following week, is at Wellpark, Willeys Avenue, Exeter EX2 8BE.

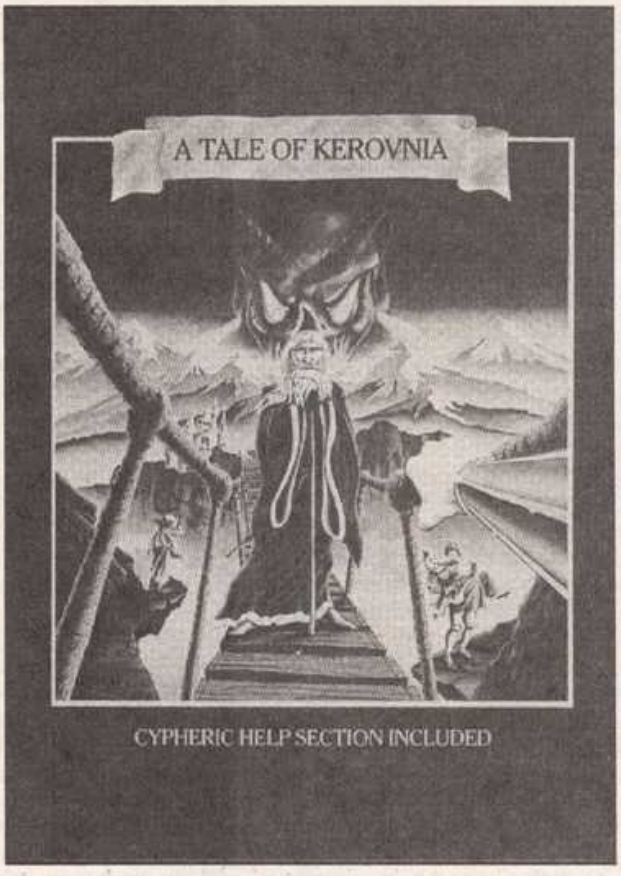
Nemesis "The Adventure Begins" comes from Alchemist, and is for the QL. There isn't a great deal of adventure software around for the QL, as you'll be aware, so each new game released comes in for quite a bit of scrutiny. The first thing to strike the attention here is the great loading screen, depicting a spaceship hurtling through space toward some epic confrontation.

The adventure comes on two cartridges, the main loading program being on Number One, and the game data and loading screen on Two. Surprisingly, in view of the commendably fast response time, *Nemesis* is written in Superbasic: but even typing in something deliberately confusing doesn't slow things down.

The screen layout stays the same throughout the proceedings, as far as I know: green text on black paper, with a pretty surrounding pattern. Location descriptions are long and contribute to the atmosphere. The first location, for example: "You sit at the helm of the small landing pod that transported you down to the planet's surface from your orbiting ship. You are dressed in leather trousers and jacket, leather boots and a light cotton shirt."

Input is depicted in white, with a flashing red cursor. You carry a blaster, a knife and a food pill. The punctuation and grammar are both a bit weird, although the spelling seems OK as far as I've gone, with just a couple of silly errors which have obviously been overlooked in play-testing. Why adventure authors can't give the program to a number of independent testers, I don't know, as it's only too easy for the writer to consistently miss errors. There is also the occasional wrong tense; the adventure takes place in the present ("You are in", "You have arrived" etc) then suddenly we get, for example, "Exclaimed the woodsman".

The program doesn't accept multiple commands, although there is full-sentence parsing (effectively, the old "Verb-Noun" construction is the best way to proceed). But the QL's type-ahead buffer means that, if the player knows the way around, several commands can be typed in while the computer is displaying the response to previous commands.



Right at the start, the player will find a nice suspenseful problem: standing on a bridge is a robot which summarily kills you if you attempt to cross. You can't scramble down the ravine (same result), and you need something that is over that bridge. Going off in another direction, you'll be able to explore a few locations, but unfortunately, among the ruins of the ancient city are bloodthirsty mutant somethings, only too willing to finish you off. There *is* a way to avoid them, of course, but as you might imagine, the necessary object is over that bridge!

This is the free clue for this week: near the bridge your feet crunch across gravel on the road, so *Throw gravel into ravine*, whereupon the robot will run off to investigate leaving you free to cross the bridge – however, the robot quickly realises your ploy and runs back to the bridge. Quick, how to stop the robot from blasting you? Wouldn't you like to know? I can't give it all away yet! The problems are quite often of the "Do this sequence of actions in precisely the right order and with exactly the right timing in order to escape the dreaded creatures with burning red eyes" and so on. A bit frustrating.

It's very rewarding when you finally work out how to get past a certain situation, but it can also be frustrating finding your way until the right sequence of commands can be worked out. A saving grace of the game is that there is at least plenty of other avenues to be explored, each of which, though, being a dead end with sudden death.

Save can be achieved, but only one position to each cartridge, and the booklet supplied doesn't tell you that saving will be carried out straight away on Drive No1. You'll need to save regularly, however, as there is possibly a bit too much sudden death, though there is usually ample warning of impending doom in the descriptions. Maybe a RamSave feature would be useful here.

Alchemist, otherwise Paul Brittain and John Lovett, tell me that the adventure took eight months and many liquid lunches to complete: certainly, there does seem to be a shortage of the usual adventure cliches (apart from the response to *Help* – "That was a song by the Beatles, wasn't it?") with a corresponding air of originality which makes *Nemesis* quite addictive.

I found *The Pawn*, from Magnetic Scrolls via Sinclair, quite entertaining, and its recent appearance on the Atari ST has had a quite stunning effect on better scribes than me (the exclamation mark key must be hot to the touch!): but in the end, I think I prefer the more prosaic charms of *Nemesis* and its like. One thing I cannot bear is entertainment that takes itself too seriously.

In short, Nemesis is excellent value at just £13.95, and an adventure that should be in every adventure-starved QL owner's collection. Alchemist, 5 Forster Street, Gainsborough, Lincs DN21 2LL.

Tony Bridge

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Games: New Releases

Graham Taylor looks through this week's new arrivals

Program *Green Beret* **Type** Arcade **Machine** Amstrad **Price** £8.95 **Supplier** Imagine Software, 6 Central St, Manchester M2 5NS.

Program *Starquake* **Type** Arcade **Machine** Amstrad **Price** £8.95 **Supplier** Bubble Bus, 87 High Street, Tonbridge, Kent TN19 1RX

Program *AMX Pagemaker* **Type** Utility **Machine** Amstrad **Price** £14.95 **Supplier** Advanced Memory Systems, Green Lane, Appleton, Warrington WA4 5NG

Program *Kikstart* **Type** Arcade **Machine** Atari **Price** £1.99 **Supplier** Mastertonic, 8-10 Paul Street, London W1R 7DB

Program *Vegas Jackpot* **Type** Strategy **Machine** Atari **Price** £1.99 **Supplier** Mastertronic, as above

Program *Which Compound?* **Type** Educational **Machine** BBC **Price** £10.50 **Supplier** Cloud 9, 4 Dolvin Road, Tavistock, Devon, PL19 9EA

Program *Tennis* **Type** Strategy **Machine** BBC **Price** £2.99 **Supplier** Bug Byte, Liberty House, 222 Regent Street, London W1R 7DE

Program *Bandits at Zero* **Type** Arcade **Machine** C16 **Price** £2.99 **Supplier** Mastertronic, as above

Program *Kikstart* **Type** Arcade Machine C16 **Price** £1.99 **Supplier** Mastertronic, as above

Program *Solo* **Type** Arcade **Machine** C16 **Price** £2.99 **Supplier** Bug Byte, as above

Program *Spellbound* **Type** Arcade **Machine** C64 **Price** £2.99 **Supplier** Mastertronic, as above

Program *Formula 1 Simulator* **Type** Strategy **Machine** C64 **Price** £1.99 **Supplier** Mastertronic, as above

Program *Green Beret* **Type** Arcade **Machine** C64 **Price** £8.95 **Supplier** Imagine, as above

Program *Turmoil* **Type** Arcade **Machine** MSX **Price** £2.99 **Supplier** Bug Byte, as above

Program *Starstrike II* **Type** Arcade **Machine** Spectrum **Price** £7.95 **Supplier** Real Time Software, Prospect House, 32 Sovereign Street, Leeds LS1 4BT

Program *Spy Trilogy* **Type** Adventure **Machine** Spectrum **Price** £2.50 **Supplier** Tartan Software, 61 Baillie Norrie Court, Montrose, Angus, DD10 9DT

Program *Max Headroom* **Type** Arcade **Micro** Spectrum **Price** £8.95 **Supplier** Quicksilva Liberty House, 222 Regent Street, London W1R 7DB.

Max Headroom, the only computer game ever to be based on a running gag, is a lot better than I expected. Obviously what everybody wants to see is Max Headroom on their very own computer. You don't or at least you don't until the very end when, as a reward for succeeding, Max pops up and congratulates you. The effect is fair to middling.

The game though is rather entertaining and is based around the plot of the original Max Headroom TV film rather than the video shows. Basically it's an icon driven (a few minus marks for that) strategy/arcade game where you have to find a series of codes in order to reach and steal a module that represents the very being of Max. The module is held on the top floor of the Zik Zak Corporation building.

The main play of the game is to hunt the various floors of the building searching for segments of codes. This in turn involves discovering codes to control the lift.

The screen is divided into the icons which represent the various commands available and a 3D view of each room. The graphics are fairly small, mostly single colour.

The rest of the game is down to vaguely 'Simon'-like puzzles – to find the code to unlock the doors you have to remember and repeat backwards a five or six note tune.

It's all quite entertaining, though I think some people will crack it in a few hours and it really won't set the computing world afire. Still, it's original enough whilst it lasts.

Pick of the week

The Pawn

Program *The Pawn* **Type** Adventure **Micro** Atari ST **Price** £24.95 **Supplier** Rainbird Software, Wellington House, Upper St Martin's Lane, London WC2H 9DL.

Pixies and I have never seen eye to eye or even eye to kneecap. Mostly when confronted with the option of undertaking even the simplest quest, like getting back the lost credit card of Barclay and returning it to Queen Deirdre, with or on behalf of anything mythological, furry, mystic or in any way anything other than completely real, I'll go for the default of staying at home with a cup of tea anytime.

Not so with *The Pawn*, however. A veritable tribe of mystic beings in the first few locations and here I am battling on, seeking keys, talking to gurus who merely laugh at me, dealing in foreign, indeed archaic, currencies (how many groats to the gold nugget?) and generally mixing it with the very peculiar inhabitants of Kerovnia.

What makes all this pixie stuff acceptable are the touches (well, dollops actually) of humour, deviousness of plot, cleverness of design, and beauty of presentation. Basic game options like save and load, display graphics, long/short/verbose text, etc, are presented as a series of pull down scrolls, manipulated by mouse.

It's these sort of touches that make *The Pawn* the pixie basher par excellence, that and a text parser that exceeds even Infocom in its sophistication.

The plot? Well, there is this 44 page story chock full of pixies, dwarves and princesses – then there are these sub quests offered to you on a freelance basis as you progress, but the ultimate point is to escape from Kerovnia.

But who knows? You may not want to . . .

Program *Green Beret* **Type** Arcade **Machine** Spectrum **Price** £7.95 **Supplier** Imagine, as above

Program *Paperround* **Type** Arcade **Machine** Spectrum **Price** £2.99 **Supplier** E Marchant, 21 barton Knowle, Belper, Derbyshire

Program *Sodov the Sorcerer* **Type** Arcade **Machine** Spectrum **Price** £2.99 **Supplier** Bug Byte, as above

Program *Ticket to Ride* **Type** Arcade **Machine** Spectrum **Price** £1.99 **Supplier** Mastertronic, as above

Program *Adventure Building System* **Type** Utility **Machine** Spectrum **Price** £4.50 **Supplier** Tartan Software, as above

Program *Samantha Fox Strip Poker* **Type** Strategy **Micro** Spectrum/Amstrad **Price** £8.95 **Supplier** Martech House, Bay Terrace, Pevensey Bay, East Sussex BN24 6EE.

Strip Poker programs sell surprisingly well. Ordinary poker programs sell quite badly. What does this tell us? People like naked pixels. *Samantha Fox Strip Poker* features not just any old naked pixels, but Samantha Fox's naked pixels as presented on a series of digitised pictures. Curiously enough, the Spectrum screen res on black and white digitised images produces an end result about as good as a smudged copy of

the *Sun*.

The poker game is, however, very good. On the Samantha side you play Seven Card Stud against her alone, on the B side you play against up to three other opponents each with their own playing/bluffing style. On both sides of the tape, clever artificial intelligence techniques are used to enable the computer to learn from your playing style.

The graphics are rather neat (the ones of the cards, idiot) with clear display and a colour system to show which of your cards the computer can actually 'see'. Seven Card Stud is a rather complicated game with devious rules about how much you may raise at any point, but the computer tells you what your options are – amounts you can raise are fixed.

When the excitement of seeing Samantha Fox with hardly any black pixels at all has worn off, you'll find you're left with an excellent poker game. For that, it's worth £8.95.

Program *Compaedia* **Type** Utility **Machine** Dr Studwick **Price** £5 **Supplier** Dr Studwick 5, Badlesmere Road, Eastbourne BN22 8TL

Program *Bounces* **Price** £9.95 **Micro** Spectrum/Commodore **Supplier** Beyond, Wellington House, Upper St Martin's Lane, London

Bounces is an odd game – a form of two player combat involving capturing and then shooting a bouncing ball into slots in the opponent's side of the screen.

Bizarre elements abound, the fact that players are not only dressed in what looks like a medieval battle regalia but also are attached to the wall of their side of the screen by what appears to be an elastic band, being good evidence of this.

The most astonishing part of all this is that *Bounces* is a very entertaining game. The game elements fit together very neatly – the ball bounces around the screen, you try to catch it, aim as best you can and fire it in one more or less continuous movement. To stand any hope of (deliberately) getting it in one of the slots in your opponent's side you have to pull against the rubber and stretch over to his side of the court – if you miss, the ball is likely to end up behind you and you find yourself sliding backwards as your tension against the rubber band is dissippated. Suffice to say, you spend a lot of time collapsed in a heap against the back wall.

The Spectrum version has nicely detailed single colour graphics for the central players but little else by way of graphic interest, while the Commodore edition has smaller, multi-coloured figures but the other details, like the scoreboard, are considerably improved. It has better sound as well, naturally.

This would have made an astounding budget title, but as it is, I'm not sure about that whopping £9.95 price tag. It isn't justified by the usual criteria of 'multi screen, icon controlled, wizz bang, everything including the kitchen sink'. It may be justified in terms of orginality and pure fun-to-playness – certainly the office was much taken with it. Definitely one to see and play first before you buy. Hang on a bit though – it isn't out officially until May.

Program *Taspro Three* **Type** Utility **Machine** Spectrum **Price** £5.95 **Supplier** Seven Stars Publishing, 34 Squirrel Rise, Marlow, Bucks SL7 3PN.

Program *gBase* **Price** £7.99 **Micro** Commodore 64 **Supplier** Bug Byte, Liberty House, 22 Regent Street, London W1R 7DB

Bug Byte is currently marketing a range of budget-priced disc software for the Commodore 64. The titles are all top US sellers and are marked not only for their cheapness, but also for the fact that they claim 'no manual required'. It's a significant claim because all the titles are utilities claim because all the titles are utilities, some of them quite sophisticated, like wordprocessors and databases.

A cheap database that doesn't need a manual? Could it be true? *gBase* (not a sneaky reference to *dBase* surely) allows 600 records on each file and the facility to search through your data with as many fields as you want.

A 600 record maximum (the whole thing has to be stored on a single disc) isn't very large by commercial standards (tiny in fact). Nevertheless, it should be enough for those people likely to buy this sort of package – the general home user.

The program is easy to use, that 'no manual' claim is slightly misleading since the 'manual' is actually on disc – called up where required by using a help key option. Nevertheless, the basic point is true; the program is very easy to use, partly because it is so simple.

This is a no frills database; it'll do just enough to be useful but no more. The £7.99 price tag in this country isn't quite as budget as the few dollars these packages cost in the US, but it is cheap nevertheless. Treat *gBase* as a sort of novice's introduction to databases and you won't be disappointed. It should do well.

Program *Doomdark's Revenge* **Type** Strategy **Machine** C64 **Price** £9.95 **Supplier** Beyond, Wellington House, Upper St Martins Lane, London WC2U 9DL

Doomdark's Revenge has, after many months delay, since the Spectrum version, been released for the Commodore 64. The Spectrum edition was regarded as a worthy successor to *Lords of Midnight*, offering a greater and more adventure orientated challenge. Indeed even creator Mike Singleton said recently in *Popular's* Codewords that he had not yet managed a barnstorming victory over the computerised forces of darkness.

The mark of an addictive adventure or strategy game is, amongst other things, a playing system sufficiently flexible to allow a wide variety of winning gambits. There is no one winning solution to Doomdark, although powerful strategies can and must be developed. Not only are there people, places and objects to be discovered as in conventional adventures, but forces must be mustered (mustering only ever seems to happen in fantasy games).

Doomdark's Revenge concerns the attempt by a group of assorted goodies under your command to rescue the unfortunate Morking (ex-hero), who is now prisoner of the unambiguously named Shareth Heartstealer, Empress of the Frozen Empire.

Even the concept of winning in the game is not fixed, a nominal win is achieved by getting Luxor the Moonprince (and possible household detergent) to Morkin before Shareth can top him. Then Luxor and Morkin must escape to freedom through the Gate of Varenon. There is, however, a more difficult choice – to destroy Shareth's power forever. That, of course, wins the big bucks.

The classic Singleton perspective true graphics for every location (of which there are thousands) are here in all their beauty, as are a few new features like interiors for some buildings.

All instructions are single keypress, while commands are extended beyond those in *Midnight*, particularly in terms of status checks.

Essentially the Commodore version of *Doomdark* replicates exactly the Spectrum original. There is, however, one new touch in the packaging. Instead of the tedious book you can now hear the background story of the game on a 90 minute audio cassette.

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1	(–)	Last V8	(Mastertronic)	£2.99
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Commodore 64

1	(–)	Superbowl	(Ocean)	£9.95
2	(1)	Uridium	(Hewson Consultants)	£8.95
3	(2)	Hardball	(US Gold)	£9.95
4	(3)	Ping Pong	(Imagine)	£8.95
5	(8)	Zapp Sizzlers	(Gremlin Graphics)	£9.95
6	(–)	F A Cup Football	(Virgin)	£8.95
7	(9)	Kane	(Mastertronic)	£1.99
8	(–)	Phantom Of The Asteroids	(Masteronic)	£1.99
9	(–)	Fairlight	(The Edge)	£9.95
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Spectrum

1	(–)	Green Beret	(Imagine)	£7.95
2	(–)	Superbowl	(Ocean)	£9.95
3	(1)	Way Of The Tiger	(Gremlin Graphics)	£9.95
4	(–)	Bomb Jack	(Elite)	£7.95
5	(3)	Ping Pong	(Imagine)	£7.95
6	(2)	Turbo Esprit	(Durell)	£8.95
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9	(5)	Movie	(Imagine)	£7.95
10	(–)	Barry McGuigan World Champions	(Activision)	£7.99

All figures compiled by Gallup/Microscope

Top Twenty

1	(–)	Superbowl *(Spectrum/ C64/ MSX)*	Ocean
2	(–)	Green Beret *(Spectrum)*	Imagine
3	(1)	Way of the Tiger *(Spectrum/ Amstrad/ MSX)*	Gremlin Graphics
4	(–)	Bomb Jack *(Spectrum)*	Elite
5	(2)	Ping Pong *(Various)*	Imagine
6	(–)	Last V8 *(C64/ Amstrad/ Atari)*	Mastertronic
7	(4)	Uridium *(C64)*	Hewson Consultants
8	(–)	Commando *(Spectrum/ C64/ C16)*	Elite
9	(12)	F A Cup Football *(Spectrum/ C64?Amstrad)*	Virgin
10	(11)	One Man And His Droid *(Various)*	Mastertronic
11	(3)	Yie Ar Kung Fu *(Various*	Imagine
12	(–)	Action Biker *(Various)*	Mastertronic
13	(13)	Rambo *(Spectrum/ Amstrad/ C64)*	Ocean
14	(7)	Computer Hits 10 (2) *(Various)*	Beau Jolly
15	(6)	Formula One Simulator *(Various)*	Mastertronic
16	(–)	Computer Hits 10 (1) *(Various)*	Beau Jolly
17	(9)	Turbo Esprit *(Spectrum)*	Durell
18	(16)	Hardball *(C64)*	US Gold
19	(–)	BMX Racers *(Spectrum/ C64/ C16/ Amstrad)*	Mastertronic
20	(15)	Winter Olympics *(BBC/ Electron/ C16)*	Tynesoft

Figures compiled by Gallup/Microscope

Readers' Chart No 69

1	(1)	Elite *(Spectrum/ C64/ Amstrad/ BBC)*	Acornsoft/Firebird
2	(5)	Uridium *(C64)*	Hewson
3	(2)	Movie *(Spectrum)*	Imagine
4	(3)	Lord of the Rings *(Spectrum/ C64/ Amstrad)*	Melbourne House
5	(7)	Commando *(Spectrum/ C64/ C16)*	Elite
6	(4)	Yie Ar Kung Fu *(Spectrum/ C64/ Amstrad/ BBC/ MSX)*	Imagine
7	(6)	Swords and Sorcery *(Spectrum/ Amstrad)*	PSS
8	(8)	Spellbound *(Spectrum/ Amstrad)*	Mastertronic
9	(9)	Winter Games *(Spectrum/ C64/ Amstrad)*	Epyx/US Gold
10	(–)	Hardball *(C64)*	US Gold

Winning Phrase No 69: "Fun to go,' cried Ken", from Colin Tham of Barkingside in Essex, who wins £25. Honourable mentions go to S. McCarthy, of Newark for "Amiga – money locked in future", and Philip Arkley, of Accrington, Lancs, for "Ocean game on time! Uur?"

Now voting on week 71 – £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 71 closes at 2pm on Wednesday April 16, 1986. 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.

Name .....

Address .....

.....

.....

My phrase is: .....

My top 3: Voting Week 71

1 .....

2 .....

3 .....

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Modem advice

This week I'll try to answer some of the many letters you have sent in. I have received many queries from people wanting advice as to which modem to purchase for their particular machine.

Firstly, Peter Pendergast of Bellahouston, Glasgow, wrote asking which is best for the Atari 130XE: the WS 2000 and Multiview Terminal software or the Voyager 11/Voyager 7 and software.

Well, Peter, both are great value, about the same price and offer the same features. For other readers in a similar positon, the Voyager 11 has 300/300, 1200/75, 75/1200 full duplex and 1200/1200 half duplex, autodial, autoanswer and has options for 1200/1200 full duplex, bell tones and auto baud rate scan.

The WS 2000 has 300/300, 1200/75, 75/1200 full duplex and 600/600, 1200/1200 half duplex and bell tones as standard; autodial/autoanswer are available as an extra for £30 each. I have never actually used a WS 2000, but from what I've heard it is very good.

The Voyager 11, on the other hand, I have used and I find it first rate. The 11 is simple to use and has only one dial to be seen.

The WS, though, has three and looks a little more complex to use. In the end it all depends on the software and since I've never used a 130XE for comms, I don't know much about its software.

No interface

On the hardware side, I would advise the Voyager 11, you get more features for a little less money. The Voyager is £99.95 excluding VAT, whereas the WS2000 is £108.95 excluding VAT. The Voyager 11 is manufactured by Modem House, 70 Longbrook Street, Exeter, Devon EX4 7AP tel: (0392) 213355.

The WS 200 is from Miracle Technology (UK) Ltd., St. Peters Street, Ipswich IP1 1XB, tel: (0473) 50304.

The next letter was from J Driscall of Middlesex, who owns a CBM 64. Mr Driscall was worried about whether he could use a Compunet modem for Micronet 800 and a Micronet modem on Compunet. You can! The best one for this is probably the Commodore modem, it costs only £79.99 and includes a free subscription to Compunet, worth £30. The modem also works on a CBM 128 and needs no interface for either micro.

For more information, contact Commodore Communications Modem, 1 Hunters Road, Weldon, Corby, Northamptonshire NN17 1QX.

Full duplex

The next letter is a lot more specific. It comes from John Narin in Glasgow, who is a freelance journalist and wants to be able to send telexes, use Telecom Gold and send things direct to newspapers. The requirements were that the modem must be small, portable and battery powered.

Two suitable modems are the 700B and the KN 300. Both are 300/300 full duplex only, acoustic and very small. Being acoustic, though, you need a phone with round ear/mouth pieces. The 700B, from Bencom, will run for 10 hours per charge and has a phone presence sensor to detect if the modem is connected to a phone, to prevent it being left on and draining the batteries.

It costs £199 and more expensive models with more features are available. The KN 300 costs a little less, at only £180. The KN 300 is made by K&N electronics, tel: (0628) 22447. The 700B is made by Bencom Sendata Communications, Drayton House, Gordon Street, London WC1H 0AW, tel: 01-387 7792.

John Narin was also interested in higher speed, mains, hardwired modems. You might try the WS 2000 and the Voyager 11. There is also the WS 3000 range and the Voyager 4000.

For a high quality modem try Tandata. The Tm512, which I have used, is not just a modem, it has its own microprocessor built in and you can 'program' it, which lets you autodial amongst other things from any micro.

It also has a memory of eight numbers. It works at 300/300, 1200/75, 75/1200 full duplex and 1200/1200 half duplex, has auto dial and answer, bell tones optional and also has an on/off switch which is one of the most useful things on a modem. It may sound expensive at £295 excluding VAT, but is worth it because of all its features. Look out for a review in *Popular Computing Weekly* in the near future.

Another modem from Tandata is the 602 which costs a cool £455, again it has loads of features including all the 512's speeds and 1200/1200 full duplex. Tandata Marketing are in Albert Road North, Malvern, Worcs WR14 2TL, tel: (06845) 68421. Apologies to Tandata for a minor mistake at the start of the series. The Tm 110 is autodial 1200/75 only.

Character set

The next letter wants to know not only what modem, but what micro to buy! Ted Schama from Wallingford wrote asking which of these two micros are best for comms, a Spectrum or an Amstrad. My choice is the Amstrad. My reasons include the fact that an 80 column screen is available and Prestel emulation is easier than on a Spectrum. Ideally, the BBC is even better as it has Mode 7 which is Prestel graphics.

For a BBC I advise the Le Modem from Watford Electronics. For the Amstrad (or Spectrum or BBC) then the Voyager is as good as any; in fact it's better than most.

One quick answer to Roger Bibby of Cheshire. I think your problem was dealt with the other week (27 March-2 april) when I explained about Viewdata format.

Now to totally change the subject, Mr Peter Holt of Glasgow is trying to start his own BB. Firstly, good luck, Peter, you'll need it! I know nothing about the QL's character set, I'm afraid and I know of no QL Bulletin Boards either. To get the relevant information I would try to find a QL sig on a BB and leave a message.

I will, as Peter suggested, in the future, devote a few weeks to starting a BB. For a list of the Prestel characters, though, look in the Spectrum Micronet Book.

Board access

The last letter for help was from Mr Smith of Nottingham, who has been having problems with his Commodore 64, modem, Maplin interface and software. The only answer I can give is to use the modem at 8 bit, no parity and 1½-2 stop bits.

You could also try changing line 260 to:

260 S$=CHR$(ASC(S$)+n):PRINT #200, etc . . .

and add 125;

125 A$+CHR$(ASC(A$)+n)

where n is any number you like (fairly low and may be negative).

I've also heard that the software supplied with the interface is only suitable for access to the Maplin Bulletin Board – this may be your problem. Check that the interface is OK.

If any others out there use a CBM 64 and Maplin's interface, then I would be most interested to hear from you.

Keyword search

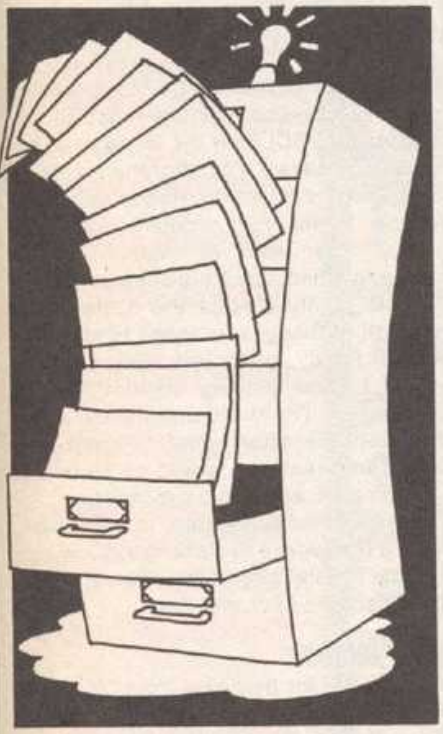
Lastly, a letter was sent in by G Worsley. He wanted me to bring your attention to Speltel Viewdata Bulletin Board. It has about 500 pages at the moment. It has the advantage over all other viewdata boards in that it has *keyword* searching! It has six main sections – Health, Education, Business, Leisure, Services and Travel. It has been undergoing tests, tests and more tests, recently so it should all work perfectly.

The number is Ashford (Middx) 44558, it's 24 hours a day and 1200/75 baud viewdata format. There are no passwords needed, so give it a try.

David Wallin

If you have any queries, tips or comments to make about any aspect of micro communications, David Wallin would love to hear from you.

Write to him at *Popular Computing Weekly* 12-13 Little Newport Street, London WC2H 7PP.



TOOLBOX

by Paul Murray

This week sees the first part of a vast suite of utility programs for your Spectrum. The suite is written in machine code and represents a number of utilities and facilities that can make life a great deal easier for the serious programmer using Sinclair Basic.

The most vital part of the process is the Basic loader program. This is Program One printed this week, but it will be required by all the other parts, so don't lose it!

The loader program prompts you to enter the start and finish address for each set of machine code bytes that you have to input. After this you have to enter five bytes per line so that the output on screen should exactly mirror that in the printed listing.

At the end of the addresses there is a checksum so that you can check your input against the correct value printed at the foot of the listing.

Each routine listing is complete within itself and is printed in columns of five bytes following an address. You only need to enter the first and last addresses into the loader program as the others will be printed to prompt you to input the bytes, five at a time.

Once you have loaded all the bytes and the checksum is correct you need to save the code using the *Save* bytes command.

This week – we are printing the routines for two utilities – Compact and Trace.

Compact

Reduces the amount of memory occupied by a program by arranging for program lines to contain as many statements as

Basic Loader

```
10 CLEAR 61900
20 INPUT "STARTING ADDRESS >";START
30 INPUT "FINISHING ADDRESS >";FINISH
40 LET TOTAL=0
50 FOR N=START TO FINISH
60 PRINT N;
70 FOR M=N TO N+4
80 INPUT BYTE
90 PRINT TAB ((M-N+1)*5+2);BYTE;
100 LET TOTAL=TOTAL+BYTE
110 POKE M,BYTE
120 NEXT M
130 PRINT
140 NEXT N
150 PRINT
160 PRINT "CHECKSUM=";TOTAL
170 STOP
```

Compact

```
62000   33    0    64    34    46
62005   242   17   1     64    1
62010   255   23   54    0     237
62015   176   42   83    92    17
62020   64    1    213   229   167
62025   205   136  25    56    122
62030   35    126  254   250   202
62035   96    243  254   234   202
62040   96    243  254   237   40
62045   17    254  236   40    13
62050   254   247  40    9     254
62055   229   40   5     225   209
62060   20    24   215   35    126
62065   254   14   40    22    254
62070   13    40   241   254   33
62075   56    242  254   45    40
62080   238   254  48    56    229
62085   254   58   48    225   24
62090   228   35   17    146   92
62095   1     5    0     237   176
62100   43    35   126   254   58
62105   40    8    254   33    48
62110   203   254  13    32    242
62115   239   224  56    205   162
62120   45    96   105   205   110
62125   25    237  91    75    92
62130   229   167  237   82    225
62135   40    177  70    35    78
62140   42    46   242   112   35
62145   113   35   34    46    242
62150   24    162  35    237   91
62155   75    92   229   167   237
62160   82    225  193   193   194
62165   67    242  42    83    92
62170   17    0    0     237   83
62175   44    242  229   237   91
62180   75    92   167   237   82
62185   225   200  35    35    229
62190   94    35   86    35    237
62195   83    44   242   25    237
62200   91    75   92    229   237
62205   82    225  32    2     225
62210   201   70   35    78    35
62215   205   63   243   56    13
62220   227   237  91    44    242
62225   115   35   114   225   43
62230   43    24   193   94    35
62235   86    43   43    43    229
62240   42    44   242   25    235
62245   225   43   54    58    237
```

possible, whilst in no way affecting the operation of the program.

Note that no Rem statements are removed, nor are any other changes made to the substance of the program. Typical memory saving is 10% to 15% after compaction.

No parameters are required in order to use *Compact*, and the routine is accessed by *Randomize Usr 62000*.

Routines in part one

NAME	CALL AT	PARAMETERS
Compact	62000	None
Trace	62331	Speed control: Poke 62335 (0=Single Step else 1 to 255=Fast to slow) O/P Medium: Poke 62387, (2=Screen, 3=Printer)

Trace

Permits the detailed examination of program flow under user control. Tracing can be either single step (ie, the program waits for user response before the execution of each statement), or the speed of execution may be altered to suit the user.

The speed value is entered by *Poke 62335, Speed*, where SPEED=0 (single step), or SPEED=1 to 255 (fast to slow).

In single step mode, advance between statements by pressing *Space*. Line and statement numbers may be sent to either the screen or the ZX printer. This is switchable using *Poke 62387, Output*, where *Output*=2 (screen) or *Output*=3 printer).

For *Output*=2, the top left hand corner of the screen is used, with the last three line and statement numbers being displayed. These scroll upwards as statements are executed.

For printer output, the values of successive line and statement numbers are separate from each other by a space. Note that the printer only operates when its buffer is full, so that printing does not happen after the execution of each statement but only when enough have occurred to fill one line of output.

Trace is called by *Randomize Usr 62331* and commences program execution as though a *Goto 0* had been entered.

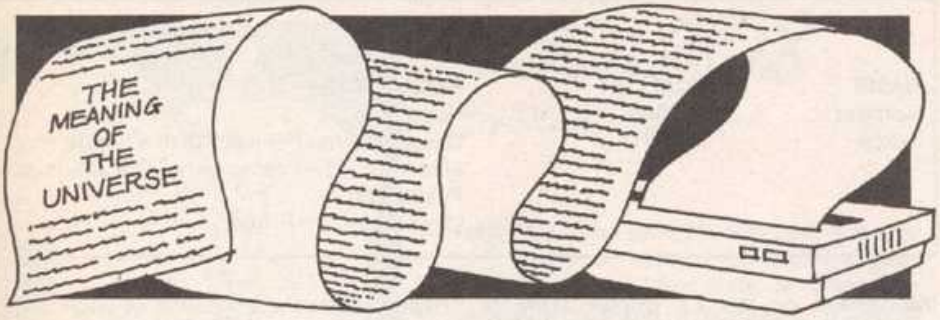
Next week, we'll be printing the listings for Renumber and Auto facilities – meanwhile, if you're not too keen on all that typing, a cassette containing all the routines can be obtained direct from Paul Murray, at a cost of £3.00. Write to him at 5 Hanham Mills, Hanham, Bristol, B15 3NU.

```
62250  83   44   242  35   1
62255  4    0    205  232  25
62260  225  237  91   44   242
62265  115  35   114  43   24
62270  174  229  33   0    64
62275  126  35   167  40   14
62280  184  40   3    35   24
62285  245  126  35   185  32
62290  240  225  167  201  126
62295  43   167  126  35   32
62300  235  225  55   201  225
62305  229  86   35   94   235
62310  35   195  171  242  0
CHECKSUM=37621
```

Trace

```
62331  1    0    0    62   0
62336  50   122  243  237  123
62341  61   92   33   75   244
62346  229  195  106  30   231
62351  205  191  22   253  52
62356  13   250  138  28   17
62361  106  243  33   110  243
62366  1    8    0    237  176
62371  42   69   92   253  78
62376  13   6    0    34   114
62381  243  237  67   116  243
62386  62   2    245  205  1
62391  22   241  42   132  92
62396  229  42   136  92   229
62401  254  3    32   22   237
62406  75   114  243  205  27
62411  26   62   58   215  237
62416  75   116  243  205  27
62421  26   62   32   215  24
62426  65   62   22   215  175
62431  215  175  215  6    3
62436  197  6    8    197  62
62441  32   215  193  16   249
62446  62   13   215  193  16
62451  240  62   22   215  175
62456  215  175  215  6    3
62461  33   106  243  197  78
62466  35   70   35   205  27
62471  26   229  62   58   215
62476  225  78   35   70   35
62481  205  27   26   229  62
62486  13   215  225  193  16
62491  228  225  34   136  92
62496  225  34   132  92   223
62501  6    0    254  13   40
```

Programming: BBC & Electron



RAINBOW

by Cy Noble

Last week contained the whole of the listing – so this week we conclude with the remainder of the instructions.

Once a *Fill* colour has been selected, it remains available until you clear the screen or change the way it fills. Filling blank areas can be done in five ways.

1) Hit <Return> – this fills the area with colour as shown.

2) Hit <S><Return> and the fill colour pattern is <S>pread.

3) Hit <B><Return> and the fill is done in vertical <B>ars.

4) & 5) Hit <O> and the above fills are done in stripes.

You can fill <O>pen colours (ie, the in between lines) with some other colour. This is best done by switching to the cursor key (hit <J>) and holding down <Return> while moving the screen cursor up or down the area concerned. Be careful, as the colour can run out the other side if it is blank or filled with another <O>pen colour. Other keys perform their own individual functions.

<@> – This key returns your fill colour to its basic form after you alter it to <S>pread <O>pen or <B>ars. (Mnemonic; where the colour was AT).

<*Keys 0 to 7*> select drawing colours zero to seven.

<*Function Keys 0 to 4*> select the GCOL x,colour options (x = 0 to 4). Some amazing effects are possible with judicious use of these options.

<*Delete*> clears the screen but leaves your colour choice display and current fill colour intact.

<*Copy*> asks if you want to *Save, Load* or *Quit*. Hit <Q> to take you back to where you were at before you hit <Copy> by mistake. <S>ave or <L>oad will ask for a filename (only the first seven letters are used) and will ask for confirmation before Saving or Loading a picture from/to tape/disc. You will be returned to the option you were in. You can actually load a picture without the program. Type *MODE2:*LOAD 'filename'* and there it is, though you can't do any more to it without the program.

<*D & M keys*> – These will keep spraying <D>ots in random positions near the cursor as long as you hold them down. In the current colour with <D> or <M>ulti-coloured with <M>

<Shift> – When using the cursor keys, the cursor will move faster.

<J> toggles between <J>oystick and cursor keys and the top line will tell you which one is current. While cursor keys are being used the X,Y coordinates are displayed on the second line.

<P> – The pallette clear key. The pallette is a small area in the lower right corner of the screen. In this area you can try out the effects of filling <O>pen colours with other colours, without contaminating the main picture area. It is side by side with the area displaying your current colour fill choice. They are separated by a green vertical line and <P> clears only this 'paint mixing pallette'.

<Escape> – Use with caution as it can clear the screen. It will put you back in 'Free Draw' mode and you should only use it if the program hangs up for any reason. Its main purpose is to clear errors such as bad filename when saving and loading pictures.

To conclude, the program is a lot easier to use than to describe and what can be done is only limited by your imagination.

I can supply the program on various formats, for anyone adverse to typing. Write to me at 323 North Circular Road, London N13 5JH, enclosing the appropriate amount – cassette (£10) 5¼" disc (£11.50) or 3½" disc (£15).

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PD922

PUZZLE

by Colin Ashworth

The object of the game is to complete the puzzle in the least amount of moves and the least amount of time possible.

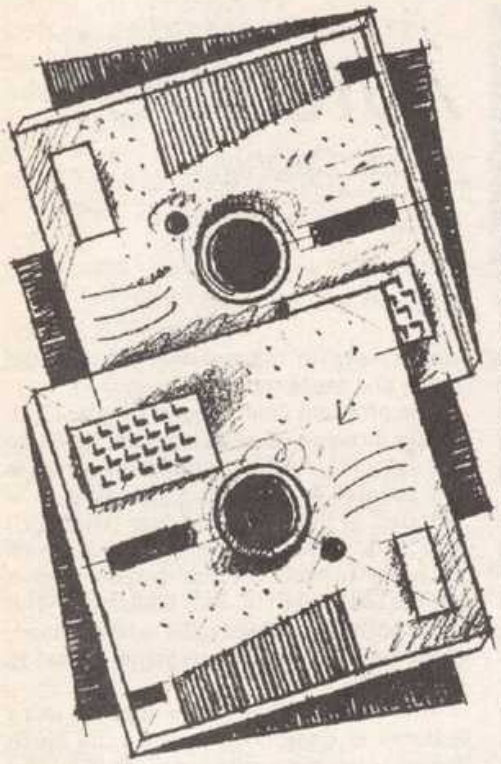
Instructions are printed at the beginning of the game. The next screen shows you the completed puzzle; when you are ready to begin press any key to randomise puzzle. Your number of moves and time taken are displayed on the screen.

At any time during the game if you press 'C; your percentage of incorrect squares will be shown on the screen, if all are correct it will go into the winning routine. Press 'E' if you wish to break out of the game. Best of luck!

Anagram Notes

10-320	Sets up main variables and defines characters.
330-470	Drawing of the completed puzzle.
490-570	Main routine.
580-620	'If C is pressed' routine.
630-830	Move number in direction.
840-900	Randomise puzzle.
910-1070	Winning routine.
1080-1130	Instructions.

```
10 besttime=29.567:besmoves=1500:ENT 1,5,1,1,10,-1,1,10,
1,1,5,-1,1
20 RANDOMIZE TIME:DIM rgri(48),grid(20,25),pgrid(20,25)
30 CALL &BC02:CALL &BB03:INK 0,26:BORDER 26:MODE 1:GOSU
B 1060
40 SYMBOL AFTER 128
50 CALL &BC02:MODE 0:
60 RESTORE 80:FOR i=128 TO 147:READ a$,b$,c$,d$,e$,f$,g
$,h$:SYMBOL i,VAL("&"+a$),VAL("&"+b$),VAL("&"+c$),VAL("
&"+d$),VAL("&"+e$),VAL("&"+f$),VAL("&"+g$),VAL("&"+h$):
NEXT i
70 GOTO 320
80 DATA 0,F,1F,3F,7F,F,F,F
90  DATA F,F,F,7F,7F,7F,7F,0
100  DATA 0,F0,F0,F0,F0,F0,F0,F0
110  DATA F0,F0,F0,FE,FE,FE,FE,0
120  DATA 0,7F,7F,7F,0,0,3F,7F
130  DATA 7F,7F,7F,7F,7F,7F,3F,0
140  DATA 0,FC,FE,FE,1E,1E,FE,FE
150  DATA FE,FC,C,0,FE,FE,FE,0
160  DATA 0,7F,7F,7F,0,0,7F,7F
170  DATA 7F,7F,0,0,7F,7F,7F,0
180  DATA 0,FC,FE,FE,1E,1E,FE,FC
190  DATA FC,FE,1E,1E,FE,FE,FC,0
200  DATA 0,7F,7F,7F,7F,7F,7F,7F
210  DATA 7F,7F,1,1,1,1,1,0
220  DATA 0,0,0,0,E0,E0,FE,FE
230  DATA FE,FE,E0,E0,E0,E0,E0,0
240 DATA 0,7F,7F,7F,7F,7F,7F,7F
250 DATA 7F,7F,0,0,7F,7F,7F,0
260 DATA 0,fe,fe,fe,0,0,fe,fe
270 DATA fe,fe,1e,1e,fe,fe,fe,0
280 DATA 0,3F,7F,7F,7F,7F,7F,7F
290  DATA 7F,7F,7F,7F,7F,7F,3F,0
300  DATA 0,FC,FE,FE,1E,0,FC,FE
310  DATA FE,FE,1E,1E,FE,FE,FC,0
320 FOR i=1 TO 48:rgri(i)=0:NEXT i
330 SPEED INK 50,50:INK 0,26:BORDER 26:INK 15,15:INK 14
,13:INK 13,7:INK 11,0,1:WINDOW #7,7,20,1,15:PAPER #7,5:
CLS #7:PAPER #1,4:WINDOW #1,1,6,2,15:PEN #1,13:PRINT #1
, "PINK          ";:PEN #1,15:PRINT #1,"ORANGE      ";
340 PEN #1,10:PRINT #1,"BLUE        ";:PEN #1,2:PRINT #
1,"CYAN          ";:PEN #1,12:PRINT #1,"GREEN       ";:PE
N #1,14:PRINT #1,"GREY        ";:PEN #1,11:PRINT #1,"YEL
LOW       ";:PEN #1,9:PRINT #1,"BROWN       ";
350 PEN 12:LOCATE 1,24:PRINT "How finished puzzle ";:PE
N 11:PRINT "    SHOULD look!";number *1:number=1:FOR y
=2 TO 16 STEP 2:FOR i=0 TO 19 STEP 2:WINDOW #1,i,i+1,y,
y+1:GOSUB 360:GOTO 400
360 IF number<7 THEN papery=12:peny=13 ELSE IF number<
13 THEN papery=14:peny=15 ELSE IF number<19 THEN pape
ry=1:peny=10 ELSE IF number<25 THEN papery=0:peny=2 EL
SE IF number<31 THEN papery=13:peny=12
370 IF number>30 THEN papery=15:peny=14
380 IF number>36 AND NUMBER<43 THEN papery=10:peny=1:
ELSE IF number>42 AND number<48 THEN papery=2:peny=9
ELSE IF number>47 THEN papery=4:peny=4
390 ON number GOSUB 420,430,440,450,460,470:RETURN
400 PAPER #1,papery:PEN #1,peny:PRINT #1,t$;:pgrid(i,y)
=number:number=number+1:number=number+1:IF number =7
 THEN number=1
410 NEXT i:NEXT y:CALL &BB03:WHILE INKEY$="":WEND:CLS #
7:WINDOW #7,18,19,16,17:PAPER #7,4:CLS #7:LOCATE 1,24:P
RINT "                              ";:GOTO 840
420 t$=CHR$(124)+CHR$(126)+CHR$(125)+CHR$(127):RETURN
430 t$=CHR$(128)+CHR$(130)+CHR$(129)+CHR$(131):RETURN
440 t$=CHR$(132)+CHR$(134)+CHR$(133)+CHR$(135):RETURN
450 t$=CHR$(136)+CHR$(138)+CHR$(137)+CHR$(139):RETURN
460 t$=CHR$(140)+CHR$(142)+CHR$(141)+CHR$(143):RETURN
470 t$=CHR$(144)+CHR$(146)+CHR$(145)+CHR$(147):RETURN
480 CALL &BB03:dat=TIME/300:miny=0:sec=0:moves=0
490 IF INKEY(2)=0 THEN 630
500 IF INKEY(0)=0 THEN 640
510 IF INKEY(1)=0 THEN 650
520 IF INKEY(8)=0 THEN 660
530 IF INKEY(62)=0 THEN 580
540 IF INKEY(58)=0 THEN CALL &BC02:CALL &BB03:MODE 1:EN
D
550 sec=TIME/300-dat:IF sec>60 THEN miny=miny+1:dat=T
IME/300:sec=0
560 PEN 9:LOCATE 12,23:PRINT USING "###.###";miny+(sec/
100)
570 GOTO 490
580 neg=0:negl=0:LOCATE 5,24:PEN 2:PRINT "JUST MAKING S
URE!";
590 FOR Y=2 TO 16 STEP 2:FOR I=0 TO 19 STEP 2:IF pgrid(
I,y)=grid(I,y) THEN 600 ELSE neg=1:negl=negl+1
600 NEXT I:NEXT y:IF neg=0 THEN FOR i=1 TO 500:NEXT i:L
OCATE 3,24:PRINT "PUZZLE COMPLETED!";:FOR i=1 TO 2000:NE
XT i:GOTO 910
610 FOR i=1 TO 500:NEXT i:neg2=CINT((100/(470/negl))+10
):IF neg2>99 THEN neg2=99
620 LOCATE 2,24:PEN 3:PRINT neg2;"% OUT OF ORDER";:FOR
i=1 TO 2000:NEXT i:LOCATE 2,24:PRINT "    TRY AGAIN!
 ";:FOR i=1 TO 2000:NEXT i:LOCATE 2,24:PRINT "
          ";:GOTO 550
630 IF oaty<3 THEN GOTO 550 ELSE oaty=oaty-2:pkey=1:GOT
O 670
640 IF oaty>14 THEN GOTO 550 ELSE oaty=oaty+2:pkey=2:GO
TO 670
650 IF dog<2 THEN GOTO 550 ELSE dog=dog-2:pkey=2:GOTO 6
70
660 IF dog>18 THEN GOTO 550 ELSE dog=dog+2:pkey=4:GOTO
670
670 number1=grid(dog,oaty)
680 GOSUB 880:GOTO 780
690 IF number1<7 THEN number=number1
700 IF number1>6 THEN number=number1-6
710 IF number1>12 THEN number=number1-12
720 IF number1>18 THEN number=number1-18
730 IF number1>24 THEN number=number1-24
740 IF number1>30 THEN number=number1-30
750 IF number1>36 THEN number=number1-36
760 IF number1>42 THEN number=number1-42
770 RETURN
780 ON pkey GOTO 790,800,810,820
790 WINDOW #1,dog,dog+1,oaty,oaty+1:PAPER #1,4:CLS #1:G
OSUB 380:PAPER #1,papery:PEN #1,peny:WINDOW #1,dog,dog+
1,oaty+2,oaty+3:PRINT #1,t$;:grid(dog,oaty+2)=number1:G
OTO 830
800 WINDOW #1,dog,dog+1,oaty,oaty+1:PAPER #1,4:CLS #1:G
OSUB 380:PAPER #1,papery:PEN #1,peny:WINDOW #1,dog,dog+
1,oaty-2,oaty-1:PRINT #1,t$;:grid(dog,oaty-2)=number1:G
OTO 830
810 WINDOW #1,dog,dog+1,oaty,oaty+1:PAPER #1,4:CLS #1:G
OSUB 380:PAPER #1,papery:PEN #1,peny:WINDOW #1,dog+2,do
g+3,oaty,oaty+1:PRINT #1,t$;:grid(dog+2,oaty)=number1:G
OTO 830
820 WINDOW #1,dog,dog+1,oaty,oaty+1:PAPER #1,4:CLS #1:G
OSUB 380:PAPER #1,papery:PEN #1,peny:WINDOW #1,dog-2,do
g-1,oaty,oaty+1:PRINT #1,t$;:grid(dog-2,oaty)=number1
830 grid(dog,oaty)=40:MOVE=MOVE+1:LOCATE 3,23:PEN 14:
PRINT MOVE;:GOTO 550
840 INK 11,15,16:DRAW 638,0,11:DRAW 638,98,11:DRAW 0,98
,11:DRAW 0,0,11:PEN 10:LOCATE 4 ,21:PRINT "MOVES";:LOCA
TE 14,21:PEN 12:PRINT "TIME";:LOCATE 4,23:PEN 14:PRINT
"0";:LOCATE 14,23:PEN 9:PRINT"0.000";:pellet=1:FOR y=2
TO 16 STEP 2:FOR i=0 TO 19 STEP 2
850 WINDOW #1,i,i+1,y,y+1
860 number1=CINT(RND(1)*70):IF number1<1 OR number1>47
THEN 850
870 IF rgri(number1)=1 THEN 860
880 GOSUB 690:GOSUB 360:grid(i,y)=number1:rgri(number1)
=1:PAPER #1,papery:PEN #1,peny:PRINT #1,t$;:pellet=pell
et+1:IF pellet=48 THEN 900 ELSE 890
890 NEXT i:NEXT y
900 dog=18:oaty=16:LOCATE dog,oaty:PEN 1:INK 3,6,1:GOTO
 460
910 MODE 0:FOR i=0 TO 12:INK i,26:NEXT i:yq=3:FOR y=1 T
O 2:FOR i=1 TO 11:LOCATE 3,yq:PEN i:PRINT "CONGRATULATI
ONS!":YQ=YQ+1:NEXT i:NEXT Y:PRINT CHR$(23);CHR$(3);
920 PEN 15:FOR i=400 TO 0 STEP -1:PLOT 0,i:DRAW 640,i,1
2:NEXT i
930 RESTORE 940:FOR i=1 TO 53:READ note,dur:SOUND 1,not
e,dur/6,5,0,1:NEXT i:GOTO 960
940 DATA 379,100,426,100,478,100,426,100,379,100,379,10
0,379,200,426,100,426,100,426,200,379,100,319,100,319,2
00,379,100,426,100,478,100,426,100,379,100,379,100,379,
200,426,100,426,100,379,100,426,100,478,400
950 DATA 379,100,426,100,478,100,426,100,379,100,379,10
0,379,200,426,100,426,100,426,200,379,100,319,100,319,2
00,379,100,426,100,478,100,426,100,379,100,379,100,379,
200,426,105,426,110,379,115,428,120,478,200,478,200,478
,100,478,200
960 PRINT CHR$(23);CHR$(0);:FOR i=1 TO 2000:NEXT i:MODE
 0:CALL &BC02:BORDER 26:INK 0,26:PEN 12:LOCATE 2,1:PRIN
T "YOUR TIME =";USING "###.###";miny+(sec/100);:PEN 10:
LOCATE 2,3:PRINT "YOUR MOVES=  ";USING "#####";moves
970 IF miny+(sec/100)<besttime THEN besttime =miny+(sec/1
00):
980 IF moves<besmoves THEN besmoves=moves
990 SPEED INK 50,50:PEN 9:LOCATE 2,22:PRINT "BEST TIME
=";USING"###.###";besttime;:INK 15,13:INK 3,6,1:PEN 15:L
OCATE 2,25:PRINT "BEST MOVES=  ";USING"#####";besmoves;
1000 IF moves>0 THEN a$="  **VERY GOOD!**"
1010 IF moves>2500 THEN a$="  **AVERAGE!**"
1020 IF moves>5000 THEN a$=" **DEPLORABLE**"
1030 PEN 1:LOCATE 8,15:PRINT "RATING":LOCATE 3,16:PEN 1
1:PRINT a$
1040 LOCATE 5,10:PEN 3:PRINT "PRESS 'Y' TO";:PRINT "
  PLAY AGAIN";:CALL &BB03
1050 IF INKEY(43)=0 THEN GOTO 40
1060 IF INKEY(48)=0 THEN CALL &BC02:CALL &BB03:MODE 1:P
EN 1:END
1070 GOTO 1050
1080 LOCATE 1,1:PEN 3:PRINT "******** N U M B E R  S W
 O P ********";:INK 2,2:PEN 2:PRINT "INSTRUCTIONS":PEN
 3:FOR I=1 TO 12:PRINT CHR$(209);:NEXT I:PEN 2:LOCATE 1
,4:PRINT "The object of the game is to, just ";
1090 PEN 3:PRINT "SIMPLY";:PEN 2:PRINT "complete the pu
zzle in the least amount of moves and the least amount
of time expossible.";:PEN 3:PRINT "Sounds easy doesn't
it!";PRINT:PEN 2:PRINT "KEYS USED"
1100 FOR I=1 TO 9:PEN 3:PRINT CHR$(209);:NEXT I:PRINT:P
RINT "'ANY KEY'-";:PEN 2:PRINT " to randomize the puzzl
e.":PRINT:PEN 3:PRINT "   'E'   -";:PEN 2:PRINT " to ab
ort (escape) from game."
1110 PRINT:PEN 3:PRINT "   'C'   -";:PEN 2:PRINT " pres
e when completed puzzle.":PEN 3:PRINT:PRINT "   "+CHR$
(240)+"'   -";:PEN 2:PRINT " to slide number (up) into"
:PRINT "                blank space.":PEN 3:PRINT "   '"+CHR
$(24)+"'   -";
1120 PEN 2:PRINT " to slide number (down) into":PRINT "
                blank space.":PEN 3:PRINT "   '"+CHR$(242)+"
'   -";:PEN 2:PRINT " to slide number (left) into":PRIN
T "                blank space.":PEN 3:PRINT "   '"+CHR$(243
)+"'   -";:PEN 2
1130 PRINT " to slide number (right) into":PRINT "
      blank space.":INK 1,16:PEN 1:PRINT "*************
PRESS ANY KEY!*************";:WHILE INKEY$="":WEND:RETU
RN
```



ENLARGE

by Dilwyn Jones

The QL is blessed with the ability to print text in up to four character widths and two character heights. I decided to take this a step further and create a routine to enable the printing of character in any size required.

The routine is a procedure called *Enlarge* which allows any character in the QL's two in-built character sets to be printed. The routine works with a standard unexpanded QL and has been tested on a QL with memory expansion and disc drives attached. This was important, because the channel definition blocks may not remain static with expansion devices fitted.

To find the Rom character set, three steps are necessary:

Step 1 – find the base of the channel table using the system variable SV.CHBAS at 163960 decimal (hex 28078). This contains a long word pointer.

Step 2 – find the appropriate entry for the channel number in which you are interested. There are four bytes for each entry.

Step 3 – for a screen channel, the character font addresses are located at 42 (hex 2A) into the block and at 46 (hex 2E) into the block. Both are long word addresses.

Study the listing to see how to write the Peek expressions. On an unexpanded QL, the Channel One fonts pointers (these are the ones we'll be using) tend to remain at fixed locations, so you could get away with the expressions *Peek-L (167722)* and *Peek L (167726)*, but you'll need the more complicated expressions used in the procedure for discs, I'm afraid.

This routine was written on a version JM QL and has not been tested for compatibility with other issues of Rom. The procedure uses *Block* to fill in the pixels of the character, so the system used is the pixel co-ordinate system with 0,0 (across, down) at the top left of window #1. The arguments for the procedure call are:

Enlarge 'A String', gap, wider, taller, x,y, colour.

where 'A String' is any string expression (or numeric as permitted by string Coercion). Don't allow the string to go past the edge of the screen as the routine will not be able to cope! *Gap* is the number of pixels to leave between the characters.

Wider and *Taller* – the QL uses a nine by five character dot matrix, so *Wider* specifies the number of pixels for each dot. *Wider=2* means ten pixels wide. Similarly, *Taller* means a multiple of the normal nine pixels up.

X and *Y* are the co-ordinates of the top left of the character. So *X=0* and *Y=0* means that the character would be printed at the top left of the screen.

Colour can be any of the normal colours 0-7 or a stipple colour 0-255. Watch out for odd values of *X* and *Wider* causing funny effects in Mode 8 due to the 256 x 256 resolution.

The routine is very useful for producing large characters for subsequent copying to a printer for artwork or poster purposes. By printing twice on top of each other slightly offset and in different colours, a 3D or shadow printing effect can be produced. This is great if you use a screen dump such as the one used in *Easel*. This routine can also be used to create title screens which are to be saved on disc or microdrive.

```
100 REMark character enlarger for #1
110 REMark    (C) Dilwyn Jones, 1985
120 MODE 4:WINDOW 512,206,0,0:PAPER 0
:INK 7:CLS:CLS#0
130 ENLARGE 'HELLO',2,12,8,50,20,63
140 ENLARGE ' I AM A CLEVER COMPUTER!
',2,3,3,1,116,7
150 ENLARGE ' I AM A CLEVER COMPUTER!
',2,3,3,0,115,2
160 ENLARGE CHR$(141)&CHR$(145)&CHR$(
182)&CHR$(184)&CHR$(185)&CHR$(188)&CH
R$(189)&CHR$(190)&CHR$(191),5,5,3,40,
170,4
170 STOP
180 DEFine PROCedure ENLARGE (string$
,gap,wide,height,x,y,colour)
190 LOCal base1,base2,byte,bit,peeked
,address,char,across,cde
200 base1=PEEK_L(42+(PEEK_L(PEEK_L(16
3960)+4)))-277
210 base2=PEEK_L(46+(PEEK_L(PEEK_L(16
3960)+4)))-1141
220 FOR char=1 TO LEN(string$)
230  cde=CODE(string$(char))
240  SELect ON cde
250   =32 TO 127:address=base1+9*cde
260   =128 TO 191:address=base2+9*cde
270   =REMAINDER :address=base2+1143
280  END SELect
290  FOR byte=0 TO 8
300   peeked=PEEK(address+byte)
310   IF peeked>0 THEN
320    across=x+(wide*(5+gap)*(char-1
))
330    FOR bit=64,32,16,8,4
340     IF (peeked && bit)>0 THEN BLO
CK wide,height,across,y+byte*height,c
olour
350      across=across+wide
360    END FOR bit
370   END IF
380  END FOR byte
390 END FOR char
400 END DEFine ENLARGE
```

Programming: Commodore 64

AUTOBOOT

by Eric Deghaye

If you own a Commodore 128 with disc drive, or a 128D like myself, you will find the little program below of some interest. The C128 is a great improvement on the ageing 64, and has a few features on top of an excellent Basic which can be turned to good use.

One of these is that the 128 can autoboot programs by just turning on the machine or resetting it. This feature is not documented in the manuals supplied by Commodore, but can be implemented quite easily.

When turned on, the computer reads track one sector zero of the disc, and looks for a particular code. The mechanism of this method is similar to the way cartridges autostart. If the first three bytes of track 1 sector contain the Ascii for CBM then an autoboot procedure is activated.

The example below is in two parts. The first program will create the necessary bytes on track 1 sector 0 of the disc so that when turned on, reset or after typing *Boot* the machine will automatically load and run a program called *Menu*, (Program Two).

To prepare a disc, just run Program One on a newly formatted disc; you do not necessarily need to save it on that particular disc. Care should be exercised about which discs you prepare this way. Crowded discs or discs with large programs might end up being corrupted, so it is safer to use this program on blank discs and copy the files across onto it later.

The second program *has* to be saved on the disc. This is the program which will be loaded automatically. All it does is to read the directory of the disc, strip it to the filenames only and create a menu. To load a program, move the pointer with the cursor keys in front of the required file name and press return.

The program itself is quite simple. Firstly, the directory is read from the disc into the array di$. As the content of the array is not suitable for use as a filename, it is stripped of the unwanted bits (such as ' and PRG '). Next, the content of the new array is printed on the screen and a pointer set next to the filenames. The program now waits for a CR to be pressed, then loads the file whose name is next to the pointer.

You will notice that I have used the extra features of Basic V7.0 to make life much easier. Also the various colons (:) at the beginning of the lines are there only to enable indentation and separation of the lines, they can be removed without any problems. Don't forget to type '£' signs in the listings as '#' signs.

```
100 REM DISK HEADER MAKER PROGRAM
110 OPEN15,8,15
120 OPEN8,8,8,"£"
124 :
125 REM FREE BLOCK 0, TRACK 1
130 PRINT£15,"B-F 0 1 0"
134 :
135 REM ALLOCATE BUFFER TO CHANNEL 8
140 PRINT£15,"B-P 8 0"
145 :
150 DO
160 :   READ A
170 :   IF A=-1 THEN EXIT
180 :   PRINT£8,CHR$(A);
190 LOOP
194 :
195 REM WRITE THE CONTENT OF THE
    BUFFER TO BLOCK 0 TRACK 1
200 PRINT£15,"U2:8 0 1 0"
204 :
205 REM ALLOCATE  BLOCK 0 TRACK 1
210 PRINT£15,"B-A 0 1 0"
220 CLOSE8:CLOSE15
230 :
240 :
250 :
260 DATA 67,66,77,0,0,0,0,77,69
270 DATA 78,85,0,0,162,19,160,11
280 DATA 76,165,175,82,85,78,34
290 DATA 77,69,78,85,0,13,-1
```

```
10 REM ********************************
30 REM ** AUTOBOOT MENU PROGRAM
40 REM **BY E DEGHAYE COPYRIGHT 1986
45 REM ** SAVE THIS WITH DSAVE"MENU"
50 REM ********************************
100 :
110 SCNCLR:COLOR0,1:COLOR4,1:COLOR5,4
120 FAST
125 :
130 REM **** GET DIRECTORY ******
140 DIM DI$(150),FI$(150)
150 GOSUB 470
155 :
160 REM **** STRIP DIRECTORY OF
    UNWANTED BITS
170 L= DP-1
180 FOR I= 1 TO L
190 :  X$="":X= 0
200 :     DO
210 :        X=X+1
220 :        X$=X$+MID$(DI$(I),X,1)
230 :    LOOP UNTIL ASC(MID$(DI$(I),
         X+1,1))=34
240 : FI$(I)=X$
241 NEXT I
242 :
244 REM ***** THE MENU SECTION
246 :
250 SCNCLR:PRINT"■■          LOAD
    WHICH ONE??"
260 PRINT"■(USE THE CURSOR KEYS AND
    RETURN TO SELECT)■"
270 PRINT
275 :
```

```
280 FOR I=0TOL+1
290 : PRINTTAB(5);FI$(I)
300 NEXTI
305 :
310 SLOW
320 N=0
330 GOSUB 610 : REM INITIALISE CURSOR
    POSITION
335 :
340 REM *** THIS LOOP WAITS UNTIL C
    CHOICE HAS BEEN MADE
350 :DO
360 REM *** AND THIS ONE CONTROLS THE
    CURSOR KEYS SCAN
370 ::    DO
380 ::      GETKEY A$
390 ::    LOOP UNTIL ASC(A$)=17 OR ASC
    (A$)=145 OR ASC(A$)=13
400 :   IF ASC(A$)=17 AND N<=(L-2)
    THEN GOSUB660:N=N+1:GOSUB610
410 :   IF ASC(A$)=145 AND N>=1
    THEN GOSUB660:N=N-1:GOSUB610
420 :LOOP UNTIL ASC(A$)=13
425 :
430 A$=FI$(N+1)
440 REM *** ON 'RUN' THE OLD PROGRAM
    AND VARIABLES ARE ERASED
450 RUN (A$)
455 :
460 END
465 :
470 REM *** THIS SUBROUTINE READS THE
    DIRECTORY IN AN ARRAY
480 DP=0
490 OPEN8,8,0,"$"
500 GET£8,T$:GET£8,T$
510 GET£8,T$:GET£8,T$:IFT$=""THEN
    CLOSE8:RETURN
520 GET£8,T$:GET£8,T$
530 GET£8,T$
540 IF T$<>CHR$(34)ANDT$<>""THEN 530
550 IFT$=""THEN 510
560 T1$=""
570 GET£8,T$
580 IFT$<>""THEN T1$ =T1$+T$:GOTO570
590 DI$(DP)=T1$:DP=DP+1
600 GOTO510
605 :
610 REM **** SETS THE NEW CURSOR
    POSITION
620 POKE 1024+((6+N)*40),64
630 POKE 1024+((6+N)*40)+1,64
640 POKE 1024+((6+N)*40)+2,62
650 RETURN
655 :
660 REM **** CLEARS THE PRESENT CURSOR
670 POKE 1024+((6+N)*40),96
680 POKE 1024+((6+N)*40)+1,96
690 POKE 1024+((6+N)*40)+2,96
700 RETURN
```

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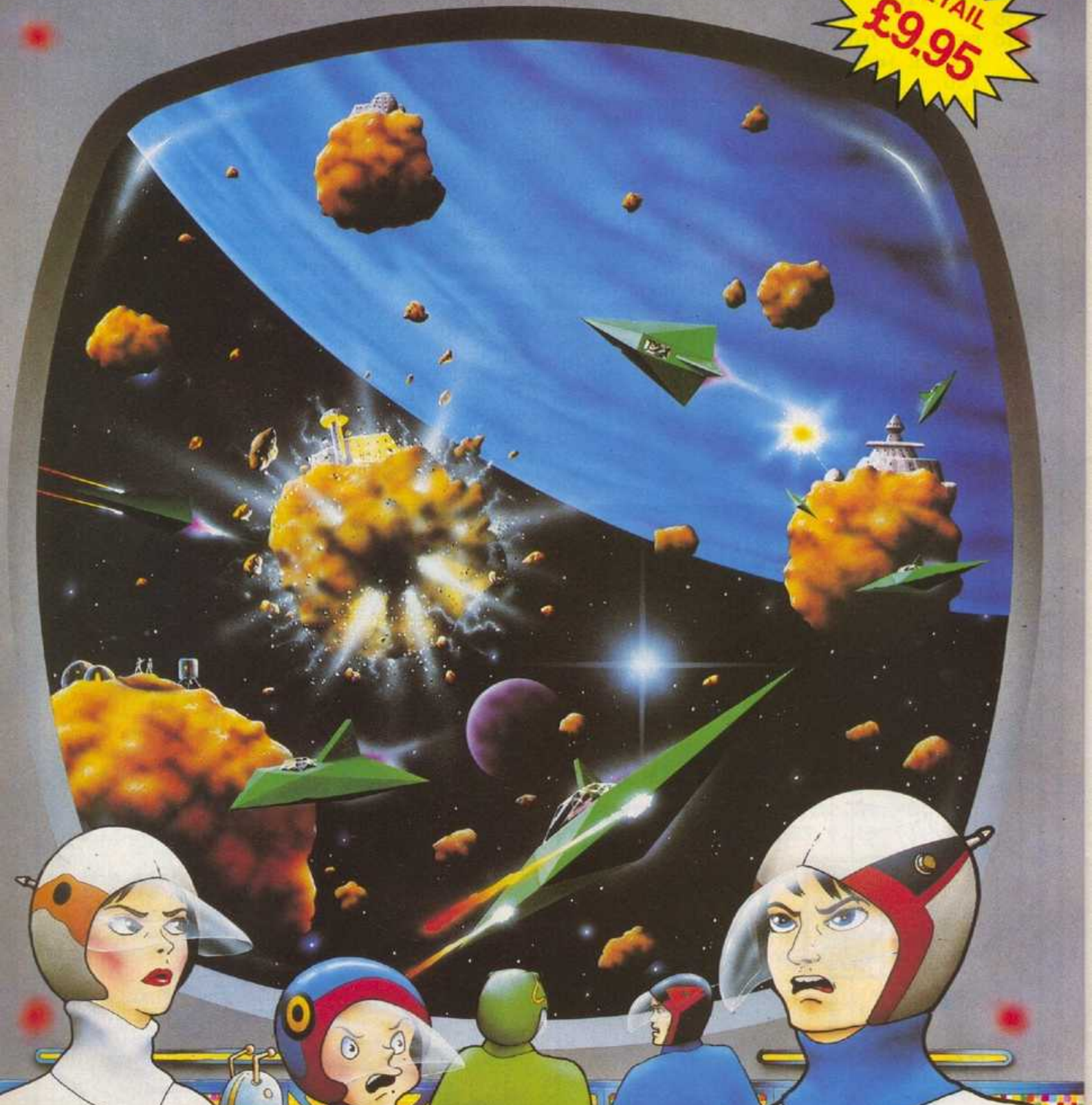

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Hidden message

I. Stokes, of Rhyl, in Clwyd, writes:

Q Can you please tell me how to eliminate *Program Name* or *Bytes Name* on the screen? I have assembled programs with a *Screen$* picture only to find when the next part is loading I get these across the screen. I have tried to fill the whole screen with *Print* statements but it then scrolls the whole screen up to print the message below. If it cannot be removed is it possible to change its colour? I own a Spectrum.

A Try this: leave the top line of your picture blank (but set to a reasonable background colour). Set the ink colour to be the same as the background on your screen picture. Use *Print At 0,0*; in order to position the loading message at the start of the line 0.

As long as you use the *Print* statement before each *Load*, the message will appear not to appear (if you see what I mean).

Problem edit

Edward Ogilvie of Bristol, writes:

Q I have entered into my Spectrum Plus the program 'Music' from Laurie Moore's book *Mastering the Spectrum*, and this is saved on microdrive cartridge. The program worked very well but in some way a fault has developed within the cartridge, so that although I can load back the program, one line in the middle of the program is all question marks. All other lines are readable. Needless to say the program cannot be run. Can you suggest a way of deleting the question marks (it took me several evenings to enter the program)?

A You obviously know the offending line number, which may or may not be corrupted as well. If it is, the first step is to change it to its correct value. The second step is then to set the line length of the offending line to its correct value, so that the line may be edited. If you load your program, and using line numbers below the corrupt one, enter the following code:

```
LET z=PEEK 23635+ 256*PEEK 3636:
FOR i=z TO 65535:
LET a=256*PEEK i:
LET b=PEEK (i+1):
LET c=PEEK (i+3)*256:
PRINT i,a+b:
LET i=i+3+c+d:
NEXT i
```

This will give you a list showing you (in two columns) the address in memory of a line in your program, and its line number.

When you get to the line number that is wrong, you will need to *Poke* the correct line number into the address shown. This is done using:

```
POKE address,INT(statement no./256):
POKE address+1,statement no.-256*INT
(statement no./256)
```

The line length now needs to be corrected. For this you will need to count the number of characters stored in the original line. You will then need to *Poke* this value into the next two bytes:

```
POKE address+2,length-256*INT
(length/256):
POKE address+3,INT (length/256)
```

When this has been done you should be able to edit the line, and correct your fault.

If you still have problems, check the line length that you *Poked* in. This must be accurate.

Copyright wrong

Paul Corboy, of Stroud, in Gloucs, writes:

Q I am 14 and I won a Commodore 16. I have recently written a game based on a very popular BBC TV programme. I wish to market the game and I wondered what I should do about copyright, etc. Can you help?

A This will depend on how closely your game follows the original.

Whilst even using an idea would normally be good enough reason for asking permission at least before marketing, you would generally be okay unless it uses another copyrighted item.

For instance, if you use the same name as the TV programme you would have to seek the BBC's consent before marketing, as well as probably paying a royalty.

If, however, your game is only loosely based on the programme and there are no specific references to it within the game, then you would have no need to seek consent from any third party, although it's not a bad idea to do so.

Unlimited lives

John Lawson of Fife, in Scotland, writes:

Q Please could you tell me how to find out the pokes for unlimited lives, etc, for software on the Spectrum.

With the pokes found in the *Arcade Addicts Handbook* and other pokes found in Arcade Action, I've been trying to find some sort of relationship with The *Clear* statement and the *Randomise Usr* statement, with the poke I've been using but with no success. Please help!

A The *Clear* statement sets Ramtop to the address specified. This leaves the memory between this address and the top of Ram free for use for machine code, in other words unavailable to Basic. The *Randomise Usr* statement is used to 'call' a machine code program or subroutine which starts at the address specified in the *Randomise Usr* statement.

A *Poke* statement merely places a value in a memory location, eg, *Poke* 377423,152 will place 152 (decimal) into memory location 37742.

If this location was used by a machine code program to hold the number of lives that you have at the start of a game, then you can see that you will start with 152 lives.

Troubled tape

Mark Groom of Hastings in East Sussex, writes:

Q I am having trouble with the built-in cassette recorder on my CPC 464, which is now out of guarantee.

Despite checking the cassette heads with cleaner, and adjusting the azimuth alignments, the motor on the recorder seems to slow down and speed up when running – you can hear it do so.

I cannot load some of my software, although I can load my own programs. What can I do?

A Almost certainly, the motor on your cassette recorder is broken. I'm afraid this is going to mean sending your Amstrad away for repair.

Try contacting the Chiltern Computer Service, 90/100 High Town Road, Luton, Beds (0582 455684), which will repair Amstrads, to check its terms and conditions.

Reserved space

Laurence Scotford, of Eastbourne, East Sussex, writes:

Q Is there a 'soft' method for temporarily disabling the Interface 1 on a Spectrum, thus making it effectively 'invisible' to other hardware and software?

The reason for doing this would be to enable incompatible software to be used, without the inconvenience of having to remove the interface first.

A Afraid not, Laurence. This and problems like it have plagued the home computer user since the dawn of civilisation as we know it!

Unfortunately it is a fact that much software that exists for the Spectrum and indeed other machines, uses memory that is really meant to be reserved or peripheral devices, such as printers.

Apart form relocating the machine code so as not to use the offending memory locations, possibly a lifetime's work, there is not much else you can do except disconnect the interface.

Distinct Rems on CBM 64
by Mike Hart

This routine takes all the *Rem* statements in a program and inserts the Reverse code symbol before the statement of the text in the *Rem* statement thus making it appear in reverse.

In this way, listings can be made a lot clearer because important *Rems* that demarcate particular sections of the program are highlighted.

To change back to normal, type *Poke 856, 32: Sys 828: List.* To restore the effect, *Poke 856, 18: Sys 828: List.*

```
5 FORJ=828 TO 882:READ X
6 T=T+X:POKE J,X:NEXT
7 READ C:IF T<>C THEN PRINT"ERROR":END
8 REM SYS 828 TO ACTIVATE
9 :
10 ::DATA 165,44:REM C64/VIC BY DEFAULT
11 ::REM  FOR PETS CHANGE TO 165,41
12 DATA 133,89,169,5,133,88
13 DATA 160,0,177,88,240,19,201,143
14 DATA 240,8,230,88,208,242,230,89
15 DATA 208,238,200,169,18,145,88,208
16 DATA 241,200,177,88,200,17,88,240
17 DATA 13,24,169,5,101,88,133,88
18 DATA 144,214,230,89,176,210,96
19 DATA 7494:REM CHECKSUM
```

Basic Renumber on Spectrum
by F W White

To use, *Merge* the program to be renumbered with this, or vice versa. Type *Goto 9990* (Enter) then enter the step you want between lines.

You will have to renumber all the *Goto's, Gosub's*, etc, yourself.

Be safe and *Save* the prog before running it, in case it crashes.

It's interesting to enter stupid increment values (ie, 0, 0.1 etc) but you may eventually crash the machine.

```
9990 LET S=PEEK 23635+PEEK 23636
*256
9991 INPUT "Increment?";I
9992 LET n=1
9993 BEEP .01,50
9994 LET New=I*n
9995 IF PEEK S*256+PEEK (S+1)>99
89 THEN  STOP
9996 POKE S,INT (New/256): POKE
S+1,256*(New/256-INT (New/256))
9997 LET S=PEEK (S+2)+PEEK (S+3)
*256+4+S
9998 LET n=n+1
9999 GO TO 9993
```

Program Eraser on Amstrad
by G A Bobker

This short routine simplifies erasing of programs from Discs. *Run* it then press *R* to start, *C* to *Cat* or *D* to *Delete* itself.

When run, program requests program title then type. Enter the type as BAS, etc, as usual.

This program will assemble the title and type inserts the full stop between then.

After each erase action, the program automatically does a *Cat.*

(Due to the *Inkey$* function being below standard on the Amstrad, it is necessary to put *Inkey$* value into a string before checking or else response time would be very slow . . . hence reason for lines 80 and 180).

Note that the *Chr$* (24) in print lines produces inverse characters. Note also that the comma in Input statements suppress the '?' from being printed.

For optimum presentation, your screen listing should be identical to this printed listing.

```
60 CLS: GOSUB 260
70 PRINT: LOCATE 9,24:PRINT CHR$(24);"R=
RUN  C=CAT  D=DELETE;CHR$(24)
80 K$=INKEY$
90 IF K$="r" OR K$="R" THEN LOCATE 3,24:
GOTO 130
100 IF K$="c" OR K$="C" THEN LOCATE 3,24
:GOTO 240
110 IF K$="d" OR K$="D" THEN CALL 0
120 GOTO 80
130 CLS:GOSUB 260
140 LOCATE 14,5:INPUT"TITLE      ",A$
150 LOCATE 14,8:INPUT"TYPE       ",B$
160 LOCATE 14,16:PRINT"ERASE ";A$;".";B$
170 LOCATE 16,22:PRINT"Y=YES  N=NO"
180 K$=INKEY$
190 IF K$="y" OR K$="Y" THEN LOCATE 16,2
1:PRINT "*************** ERASING *******
*********":GOTO 220
200 IF K$="n" OR K$="N" THEN RUN
210 GOTO 180
220 A$=A$+"."+B$
230 |ERA,@A$
240 CAT
250 GOTO 70
260 LOCATE 15,1:PRINT CHR$(24);"ERASE FI
LES";CHR$(24):RETURN
```

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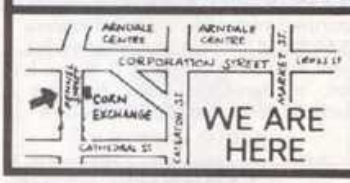

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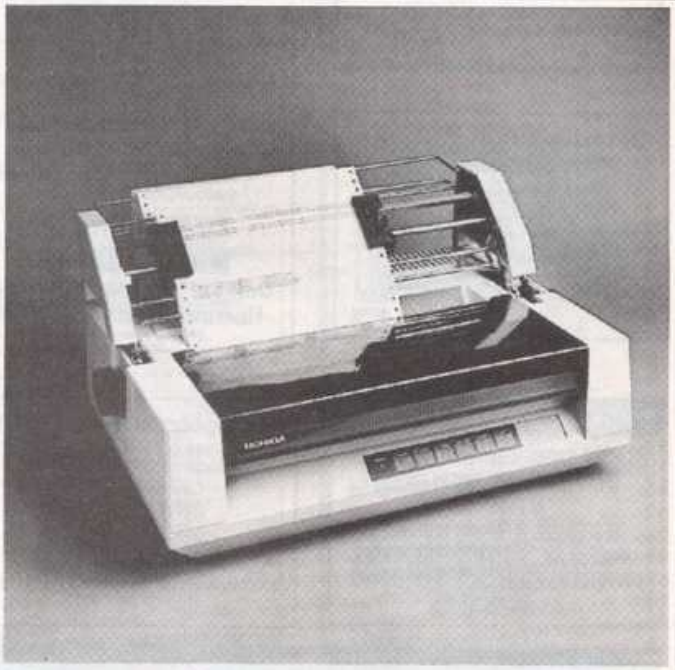

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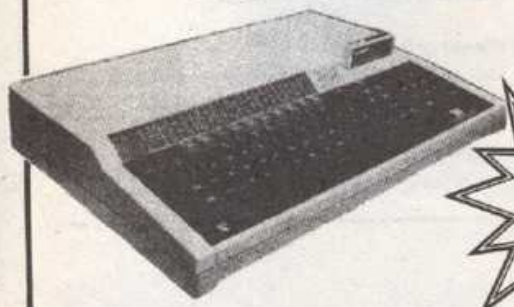

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Innovation Blues

Over the past few months most of the major micro manufacturers have announced newer versions of their older, established machines. Compatibility has been paramount, while innovation and extra features have taken a back seat.

Take, for example, Apple, with its new Mac Plus. The 128k Mac has been around for over two years, so it's a safe bet that development on its successor has been going on for over two and a half years. So what has Apple done in all that time?

Well, it increased the Ram to 1M, made the discs double sided, and extended the keyboard. That couldn't have taken long – double sided 3.5" drives have been around for years, and 4 Megabyte Ram upgrades have been available (though not from Apple) for about six months. The major difference between the Mac Plus and the Mac is that discs can now have subdirectories, though this has caused incompatibility problems, with around 20% of software not running on the Plus's 128k Rom.

The Mac Plus didn't have colour, it didn't have a bigger screen, and no multi-tasking either. Given the time Apple had, it's disappointing.

Sinclair has also launched its successor to the Spectrum, the 128k. It has extra Ram, a few extra sockets and more Rom, none of which are exactly innovative or technically difficult. It doesn't have a joystick socket, disc or microdrive, or even a real keyboard, and to top it all it doesn't run all the 48k games because Sinclair changed the Rom.

Blaming software houses isn't the answer – with the old Rom so well documented, changing any of it was a dangerous business.

In fact, I believe that without Dr Ian Logon's best selling disassembly, the Spectrum may not have been half the success it has been. Sinclair does have a reasonable excuse for the lack of interesting features on the 128k, though – it had no money to spend on its development because of a cash-flow crisis.

Amstrad has an easier time than Sinclair when it comes to compatibility between machines – thanks to very well documented entry points to the Rom, the contents have changed quite drastically on the CPC machines without affecting compatibility with 'legal' programs.

Quite what Amstrad can do with the CPC design in the future is difficult to say, as it has disc drives, a monitor, a good Basic, and runs CP/M.

Even Alan Sugar may be hard pushed to think of any more features to add for the money, except the easy option of more Ram and higher capacity drives, as done with the PCW 8512.

Atari has announced the 1040ST, which is simply a 520ST with 512k more Ram and the disc drive built in.

Software should be completely compatible as the Roms are the same, though whether the promised 'blitter' will appear, and its effect on existing programs, remains to be seen.

Atari has hinted that AmigaDOS, developed by Metacomco, may appear on the ST, allowing it to run Amiga programs. Even if it's true, nothing will actually work, as Amiga programs require more than merely the DOS; they need graphics and IO libraries at least, which are written by Commodore-Amiga themselves, plus, of course, the Amiga's unique custom chips.

The Amiga itself, still not available in the UK, was designed from the start to be the base model in a range of compatible machines, and in the US there are already boards available that replace the 68000 with a 68020 and 68881 maths processor, running incredibly quickly.

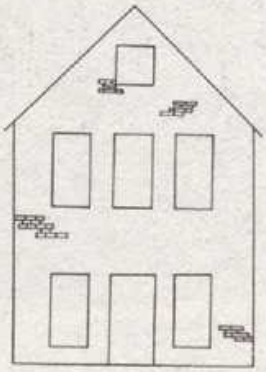
The amazing thing is that no changes are required – the new processor runs with the existing operating system and hardware, although a few programs may have to be twigged to run because of incompatibilities in the processor itself.

Why have most of the major manufacturers seemingly missed an opportunity to introduce compatible machines that are much more than their predecessors, instead of just bolting on a few easy features?

Andy Pennell

Puzzle No 203

This is the side wall of Jamie's house. During a project on mensuration Jamie came up with the following facts:



a) The wall is an exact number of inches wide and measures the same height to the eaves, which are less than 25 ft. from the ground.

b) The roof slopes at 45 degrees to the horizontal.

c) The six windows are wider than 12 inches, and are all of identical width (an exact number of inches).

d) The five rectangular windows are twice as high as they are wide, and the attic window is exactly square.

e) The doorway measures 6ft 8 inches high and 2ft 10 inches wide.

f) The total area covered by the windows is just one seventh of the area of the remaining brickwork (excluding the door).

How wide are the windows, and what is the height of the wall to the eaves?

Solution to Puzzle 198

A total of 39 sales were made during the third week. From the information given it is not possible to determine the exact figures for the first two weeks, but this was not asked for!

In each case, the difference between week one and week two, multiplied by the difference between week two and week three comes to the total for week one. However, in each case the total for week three is identical.

Winner of Puzzle No 198

The winner is Alastair F. D. Hunter Esq, of Levine, Glasgow, who will receive £10.

Rules

The closing date for Puzzle 203 is May 6.

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