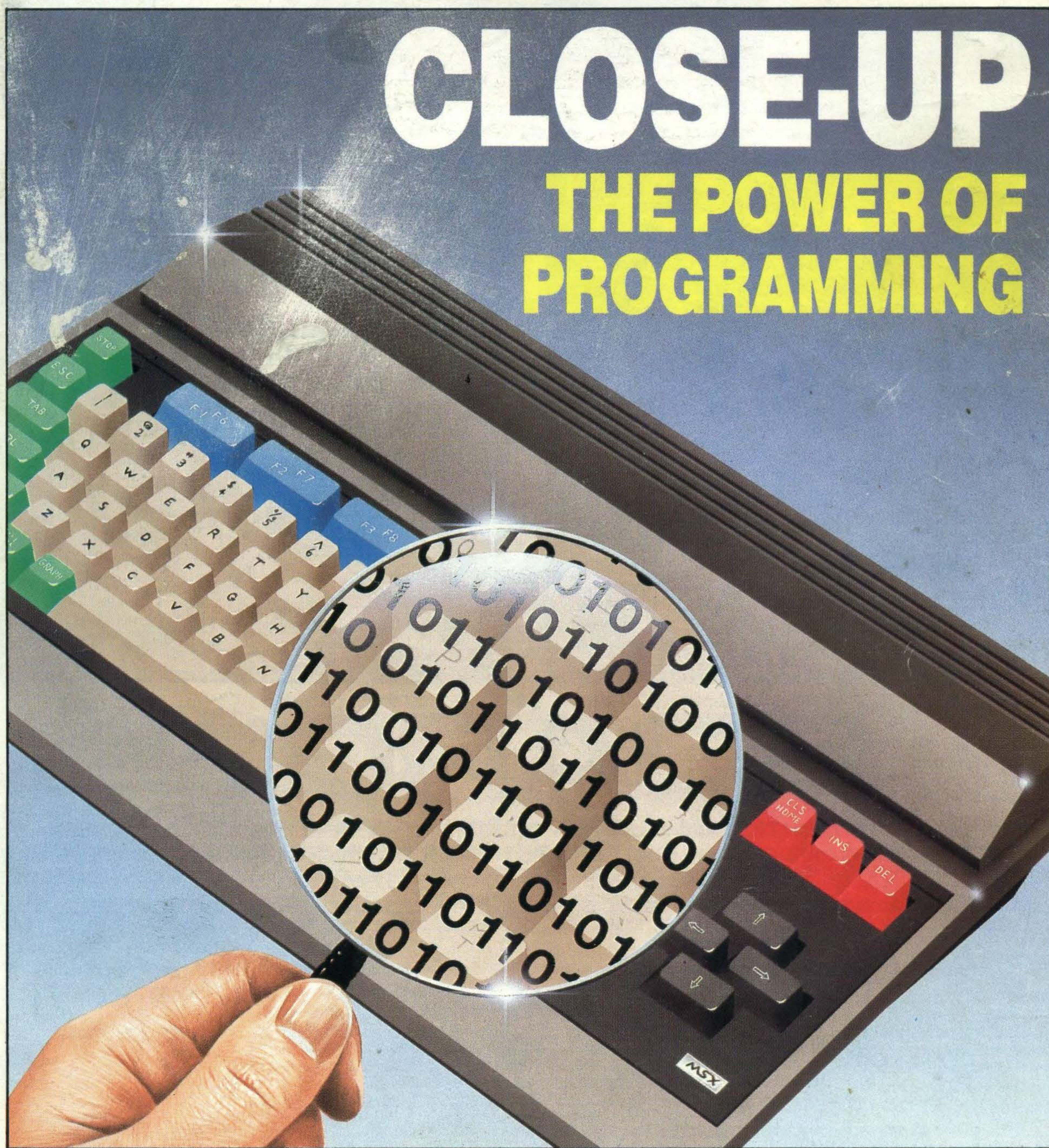


# MSX

## COMPUTING

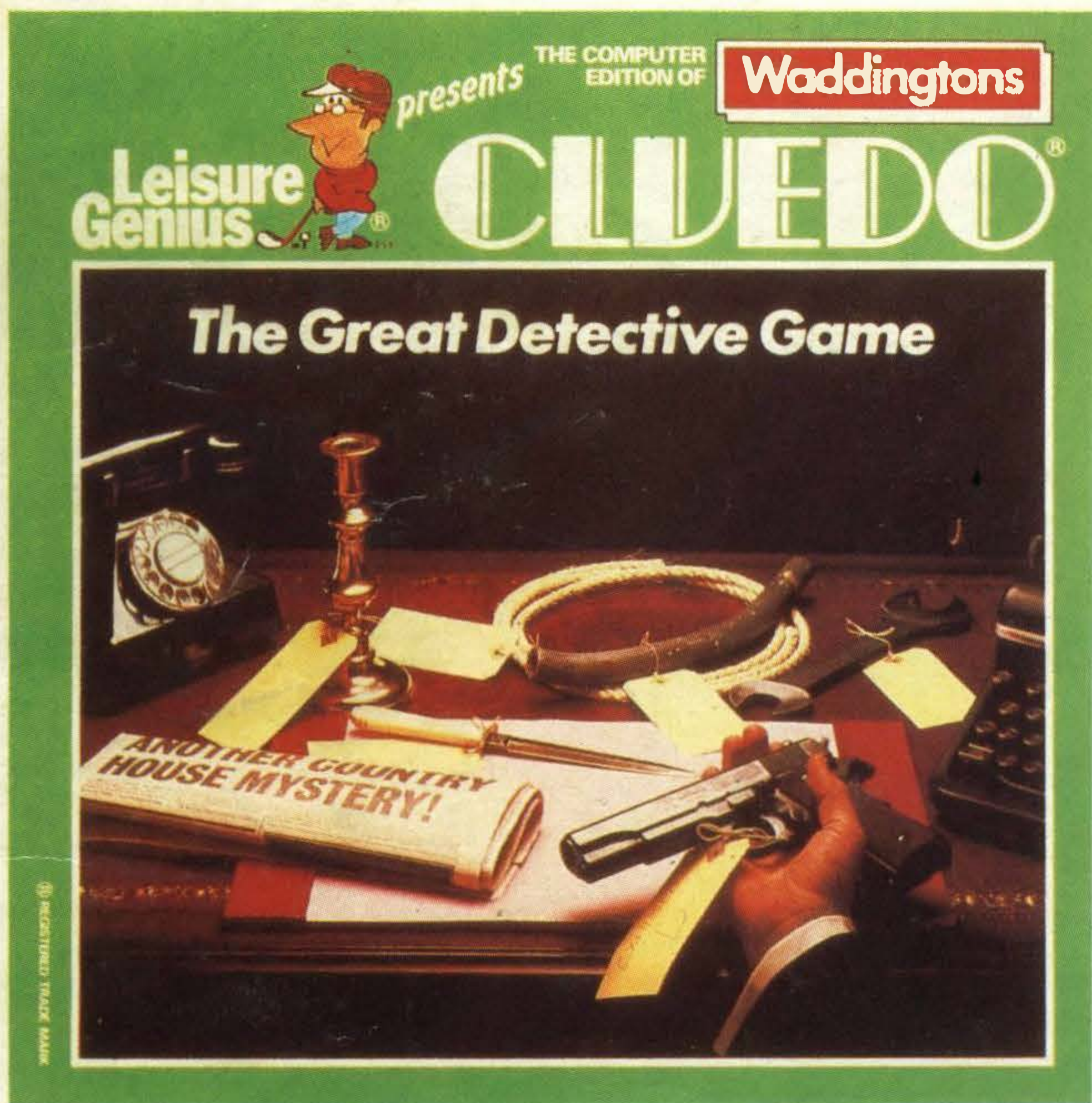
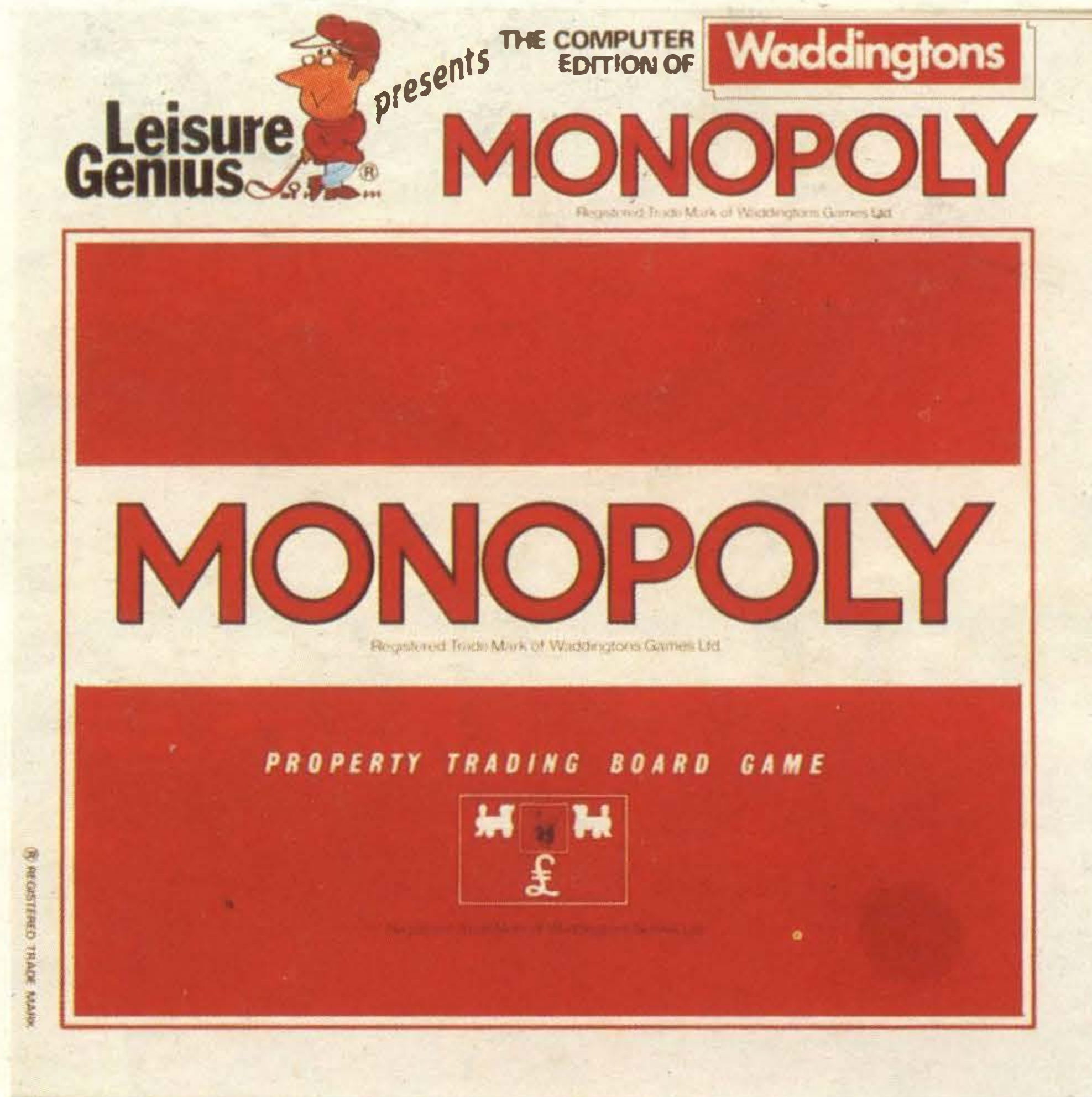


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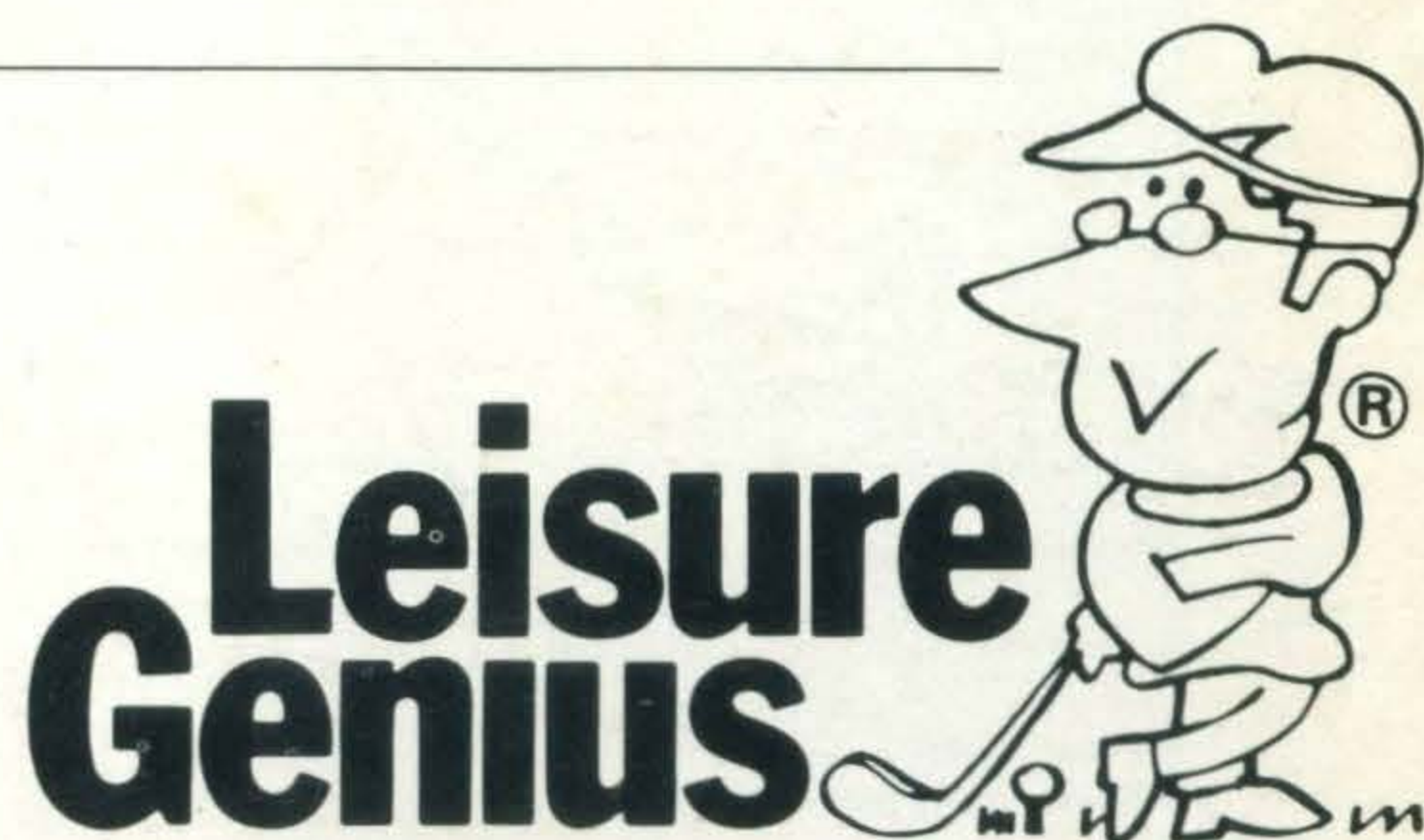
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# MSX COMPUTING

JUNE/JULY 1986

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# AT WHAT COST?

It is often hard to understand the marketing decisions of the MSX manufacturers. When MSX 1 was introduced the machines were overpriced and sales suffered as a result. Then, just before last Christmas, prices collapsed to below £100 and demand grew explosively, taking everyone by surprise. Often even heavily-discounted home computers do not sell. Usually they are obsolescent, or have no software available. The way MSX machines sold over Christmas proves that the launch price was the only thing wrong with the hardware. That mistake cost the MSX concept a lot of friends.

The current launch plans for MSX 2 in this country indicates that the manufacturers have not learnt from their mistake. Elsewhere in this issue you will find details of JVC's MSX 2 computer, one of the machines which will be on sale well before Christmas. Its specifications make it more than competitive with the main rivals. Sadly, its projected price — £900, near enough — gives it virtually no chance of success. Remember that this is not the price of a complete system: you will have to fork out a couple of hundred pounds more for a printer and at least the same again for a monitor capable of doing justice to the 80 column text display and the advanced graphics on offer.

On a brighter note, while working on this issue we found that there *are* people in the UK who take MSX very seriously indeed. They show their commitment by supporting the machines with high quality serious software. Hisoft has a growing reputation as *the* source for sensibly priced languages and utilities for all kinds of computers. If the people at Hisoft haven't written it themselves — such as a Cobol compiler for a Spectravideo Xpress running CP/M2.2 — their Software Toolshop associate company will probably be able to source one and supply it to you, no matter how unlikely it sounds.

Computermates is another British company making determined inroads into export markets against opposition from local companies. Its deal with Philips is highly encouraging.

The editor welcomes any corrections or additions. Prices quoted in editorial and advertisements are correct at the time of going to press but may be subject to variation.

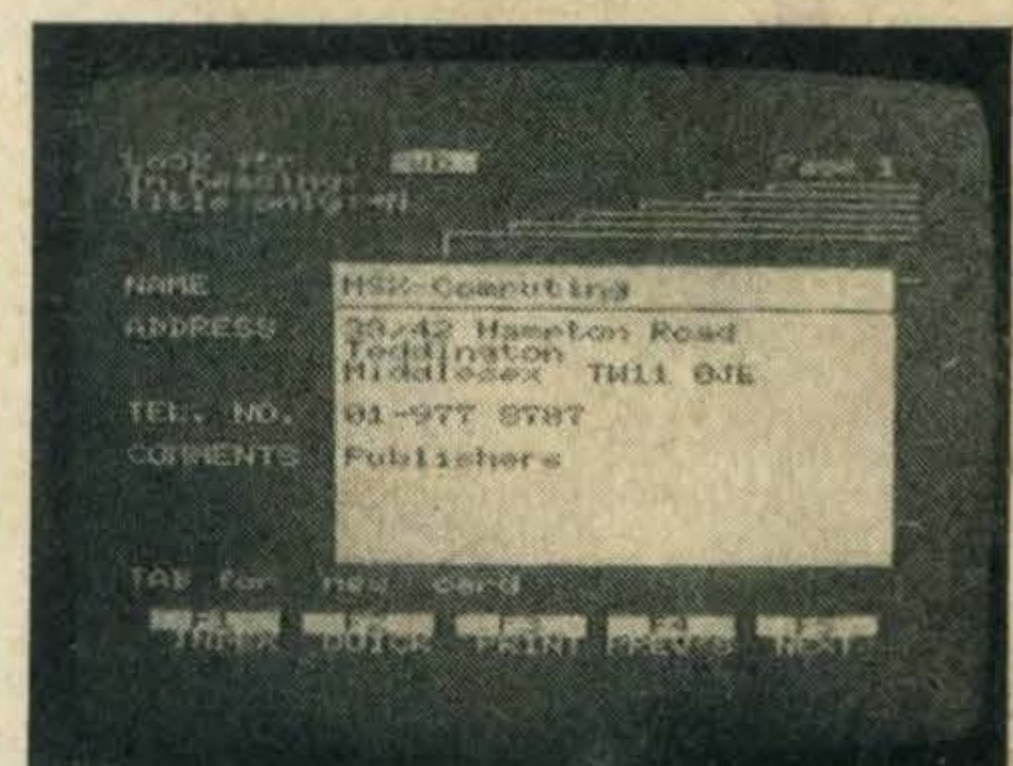
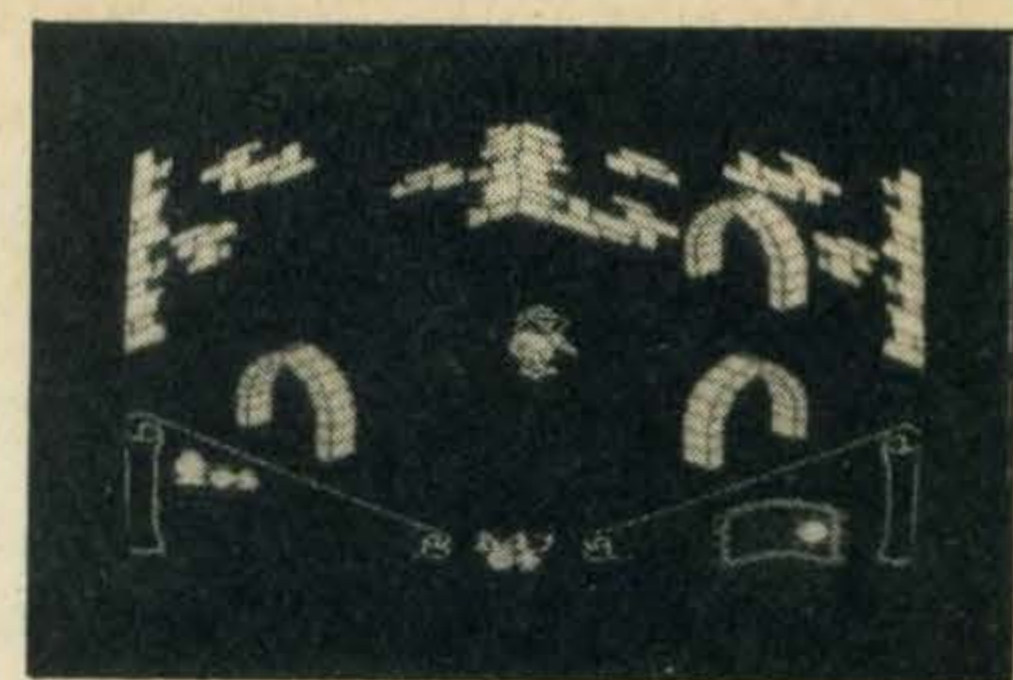
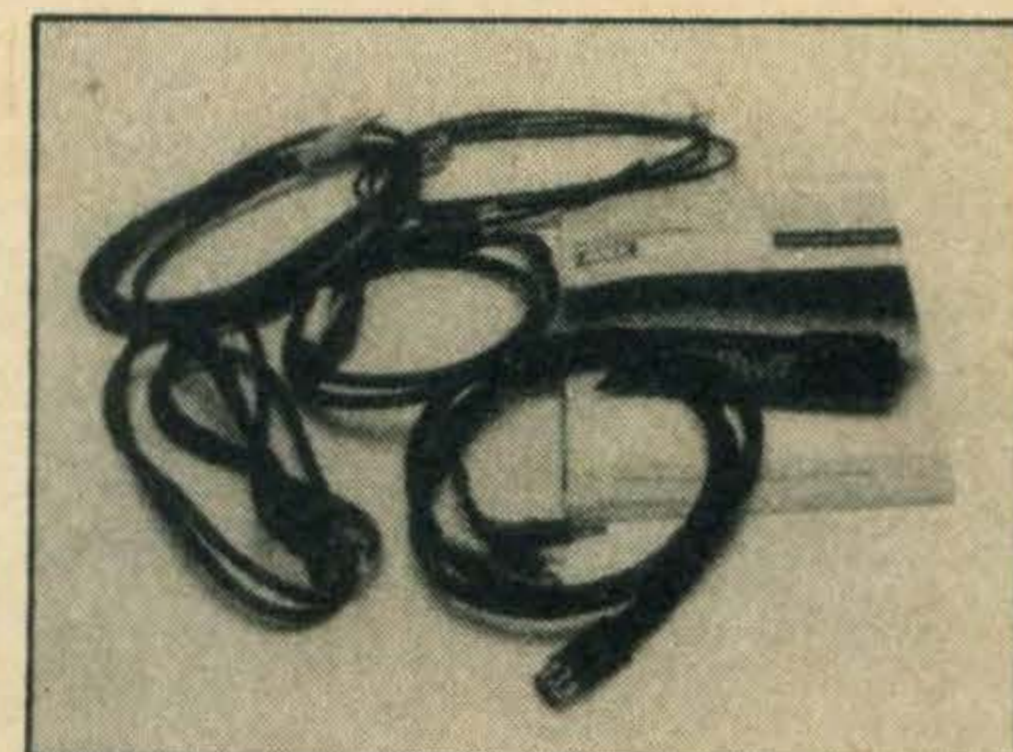
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Europe.....£20  
Overseas.....£20  
Airmail/Middle East.....£35  
Airmail/USA, Can, Afr, Ind.....£42  
Airmail/Aust, NZ, Japan.....£45

## Multi-player mystery of Mandragore

There's great news for adventure fans, a new graphic adventure is on the way from Infogrames.

Called *Mandragore* it is an adventure of epic proportions as it contains over 260K of program and costs £14.95.

*Mandragore* is packaged as a twin cassette pack and comes with a detailed manual and a ten chapter book that outlines the plot and supplies hints and techniques to play the game.

A novel feature is that up to four players can take part, although one person can control all four characters if you can't find three other chums.

Each character plays a vital role in the solving of the mystery of the King of Jorian and the mystery surrounding the nine chateaux's that can be found in the land of Mandragore.

Infogrames is one of France's leading software houses and *Mandragore* is the company's first title for MSX. Keep your eyes peeled for a review in our next issue.

## MSX versions for Arab market

MSX seems to be a big hit in the Middle East so much so that Alalamiah Software is extending its range of software.

The company has just released four educational titles: *Magnetism* and *Energy*, and are scientific programs, and *Head and Tail* and *Around the Clock* which cover different aspects of the English lan-

guage including verbs, prefixes and suffixes.

Alalamiah has also released an arabized version of *Very BASICBASIC*, from Melbourne House.

There are also plans to arabize further titles including Tom Sato's popular *MSX Programmer's Guide — A Complete Technical Manual for*

*Programmer's on MSX-BASIC.*

Alalamiah has also agreed with the Algerian government to supply them with bi-lingual MSX micros.

Alalamiah first introduced MSX micros to the Middle East in February of last year when the company developed the AX-100 MSX with Yamaha.



The Yamaha AX-100 is the first completely bi-lingual MSX computer to go on sale.

## Spring-clean your machine for an Authentic sheen

Is your micro like ours, coated in dust and grime from constant use and in dire need of a Spring clean?

If the answer is yes then maybe you could make use of a neat little gadget called Mini-Vac.

As the name suggests Mini-

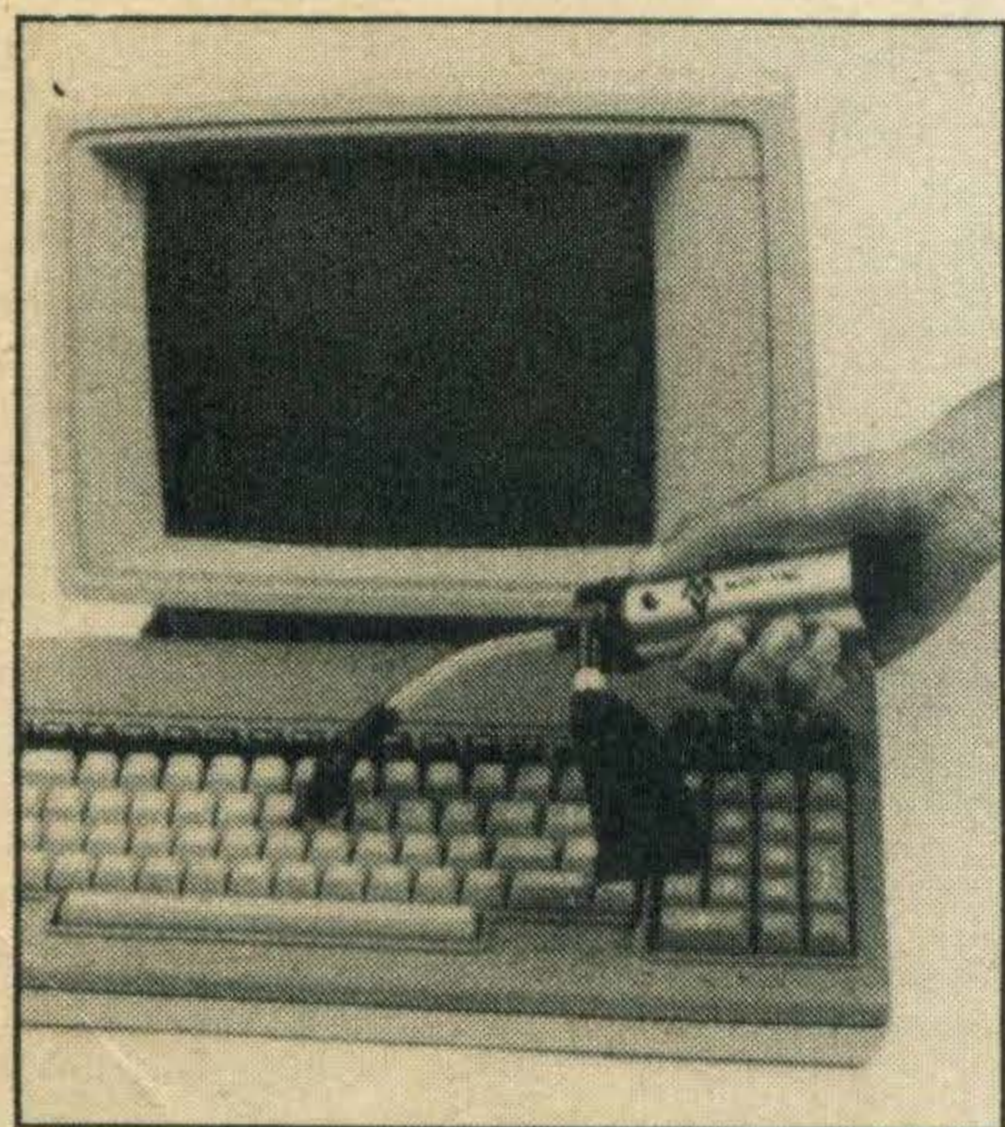
Vac is a miniature version of your mum's vacuum cleaner and ideal for reaching the parts that other cleaners can't reach.

The Mini-Vac which costs £11.95 is battery operated and is roughly the same size as a standard hair dryer and comes with a small dustbag, two pipes and some brushes.

Authenticity who manufacture the cleaner tells us that it can also be used for sprucing up your hi-fi, and photographic equipment.

Watch out when you're putting the batteries in though because if they are inserted the wrong way round the cleaner will blow instead of suck!

Mini-Vac is available throughout the UK from normal high street retail outlets or you can purchase it direct from Authenticity, PO Box 34E, Worcester Park, Surrey.



It sucks, it blows, it sounds like a dentist's drill



Kenji Hiraoka moves back to Japan in Konami's reshuffle

## Konami Kraze Continues

Cartridge fans will be delighted to hear that cartridge king Konami is planning to launch a host of new titles for MSX throughout 1986.

The company's MSX and consumer sales manager Luther De Gale tells us that there are at least 16 more titles in the pipeline. And that there are further plans to convert some of Konami's popular arcade titles for MSX too.

One of the first games to be released is *Nightmare* an arcade adventure game which you'll find reviewed within our Software Scene pages.

The company has also recently acquired a new managing director. Kenji Hiraoka who originally set up Konami UK Ltd has returned to Japan to head the parent company's foreign trade division. His replacement is Hiro Maru.

## Keeping a straight head on cassette

Plagued by loading errors and at your wits end, then fear no more Global Software may have just the answer.

The company has just launched Operation Alignment a follow-up to its popular tape cleaning package Operation Caretaker.

Operation Alignment contains an alignment tape program and screwdriver for adjusting the tape heads in your data recorder which after constant use can fall out of synch and can cause misloading and bad saves.

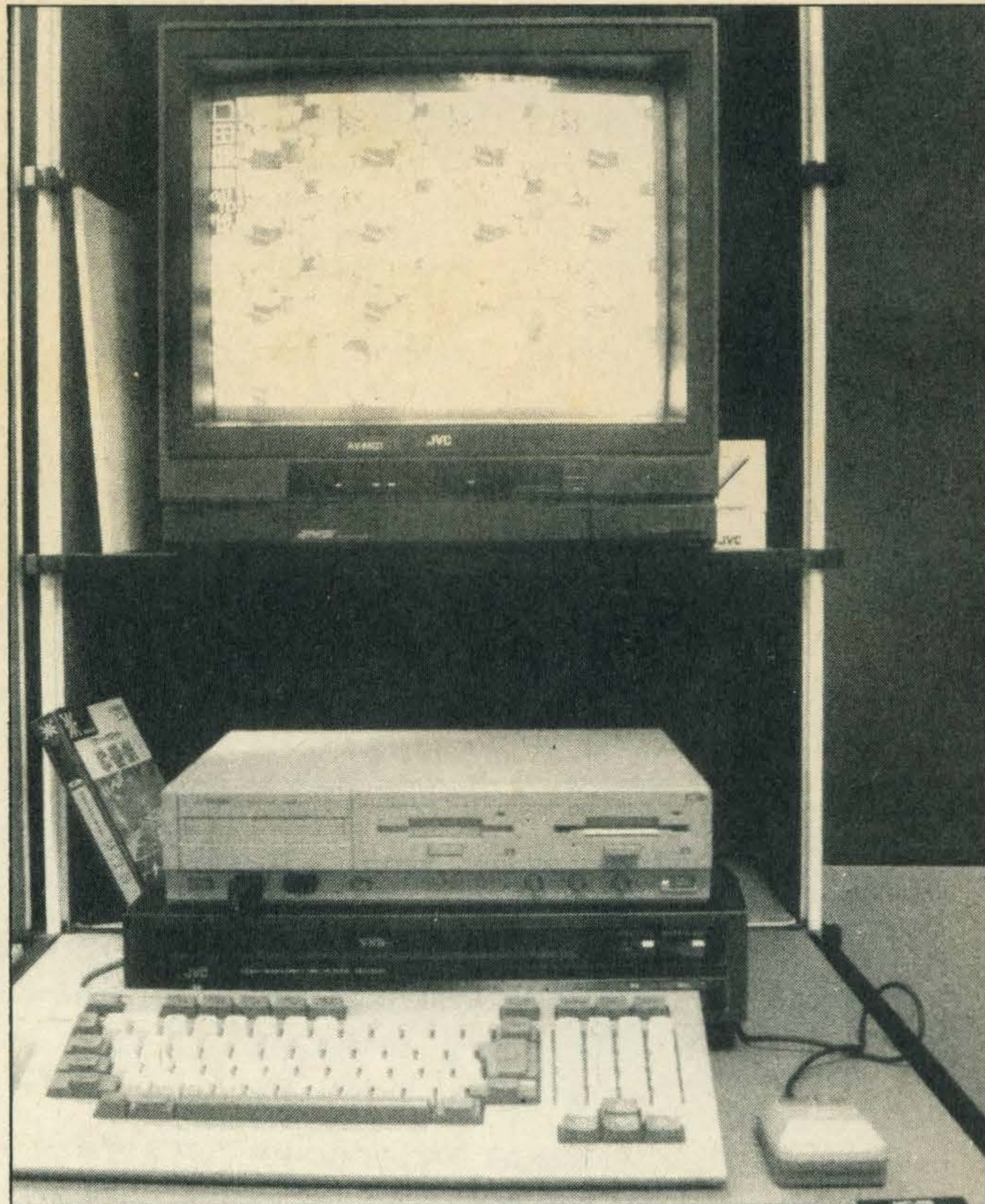
The package retails at £5.95 and is available from most high street dealers.

As with all products like this we do stress that if in doubt call upon the services of an expert.

More details can be obtained from Global Software, PO Box 67, London SW11 1BS or telephone on 01-228 1360.



The head alignment on your tape recorder can often cause loading problems even for experts



JVC's MSX 2 makes its debut, but will the price be right?

## JVC autumn launch plans for MSX 2 (at last!)

The good news is that MSX 2 is on schedule for an autumn launch but the bad news is that only one MSX manufacturer, JVC, is taking the plunge.

JVC's HC-95 twin disk, 128K RAM increased video Ram and 80-column display MSX 2 micro was on display at the annual May trade show in London.

The HC-95 comes in two units (not unlike the Pioneer PX-7), a box contains the Z80 processor, MSX BASIC and a host of interfaces and a standard MSX keyboard with additional function keys to control its video and graphics.

Pieter Glas, JVC's product manager, tells us that the HC-95 has only just gone on

sale in Japan and retails for around £900, and says: 'This is a top range model and when it is launched in the UK will not be a low-cost machine.' He also adds that 'JVC is not looking at the games market with this micro but at practical applications for the home/business/educational user'.

JVC is also planning to launch two other micros. The first will be a single disk version of the HC-95 and the second micro will be a standard MSX 2 machine not unlike the HC-7GB. Prices for both machines have yet to be determined.

JVC is now also selling disks in 3½-inch, 5¼-inch and 8-inch sizes.

## Speeding up your tapes

Computer users tired of waiting for cassette-based programs to load may be interested in Aackosoft's latest utility.

It is called *Speedsave 4000* and is a cassette-based program intended to speed up the loading process. It costs £6.45.

*Speedsave* allows you to change the two standard baud rates between 435 and 4600 baud, and add a third speed so that you can load and save at the most convenient speed.

*Speedsave* is available direct from Aackosoft, 26 De Wylch, 9251 PC Bergum, The Netherlands.



## Up and down with Gremlin

Hot on the heels of its popular release *The Way of The Tiger* comes Gremlin Graphics' latest title *Bounder*.

The idea of the game which retails at £8.95 is to move *Bounder* (the tennis ball) around the screen, bouncing on hexagonal slabs only. Miss and you'll fall to your death and watch out for the mountains and walls as you can only go round them.

Gremlin Graphics reckons it is one of the most compulsive games you'll ever play so watch out for our review in the next issue and see whether it lives up to the claim.

More details can be obtained from Gremlin Graphics on (0742) 753423.



A whole new ball game

## More clever things for Epson printers

Anglosoft, which is building a name for itself with its range of utility packages for MSX, has now added a printer utility.

Called *Manuscript* and costing £15.95, it is a printer utility for use with any Epson compatible dot matrix printers and enables you to custom build

your own fonts from any characters and incorporate them into your own programs.

*Manuscript* also offers a colour separation facility. This enables the user to design a manuscript in multi-colour but print the manuscript out at a colour at a time.

*Manuscript* is said to be one of the first printer utilities of its kind for MSX, and as far as we know is the first of its kind (on any home computer) that is available on disk and cassette.

For more details contact Anglosoft, PO Box 60, Coventry CV1 5SX.

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**PLUS VERY MANY MORE — ASK FOR LIST**

## User groups expanding throughout the UK

If the number of MSX clubs and user groups is anything to go by then MSX is rapidly becoming one of the most popular home micros, not a month goes by without us hearing about more clubs and groups.

Details of the latest one to reach our office is of a group in East Anglia founded by VW Warren and is appropriately called The MSX User Club.

Mr Warren says that his club is open to anyone living in the Norfolk or Suffolk areas and he would be delighted if

readers would write in with ideas and help him to formally launch the club and get it off the ground.

If you would like to help and live in the area then why not drop a line enclosing a stamped addressed envelope to The MSX User Club, 32 Stafford Road, Great Yarmouth NR31 0EX.

And if you have just started up a club yourself why not drop us a line with all the details so that it can be included in the next issue of *MSX Computing*.

## Cut price journey

Bug-byte, well known for turning out budget priced software has now added a graphic adventure to the list.

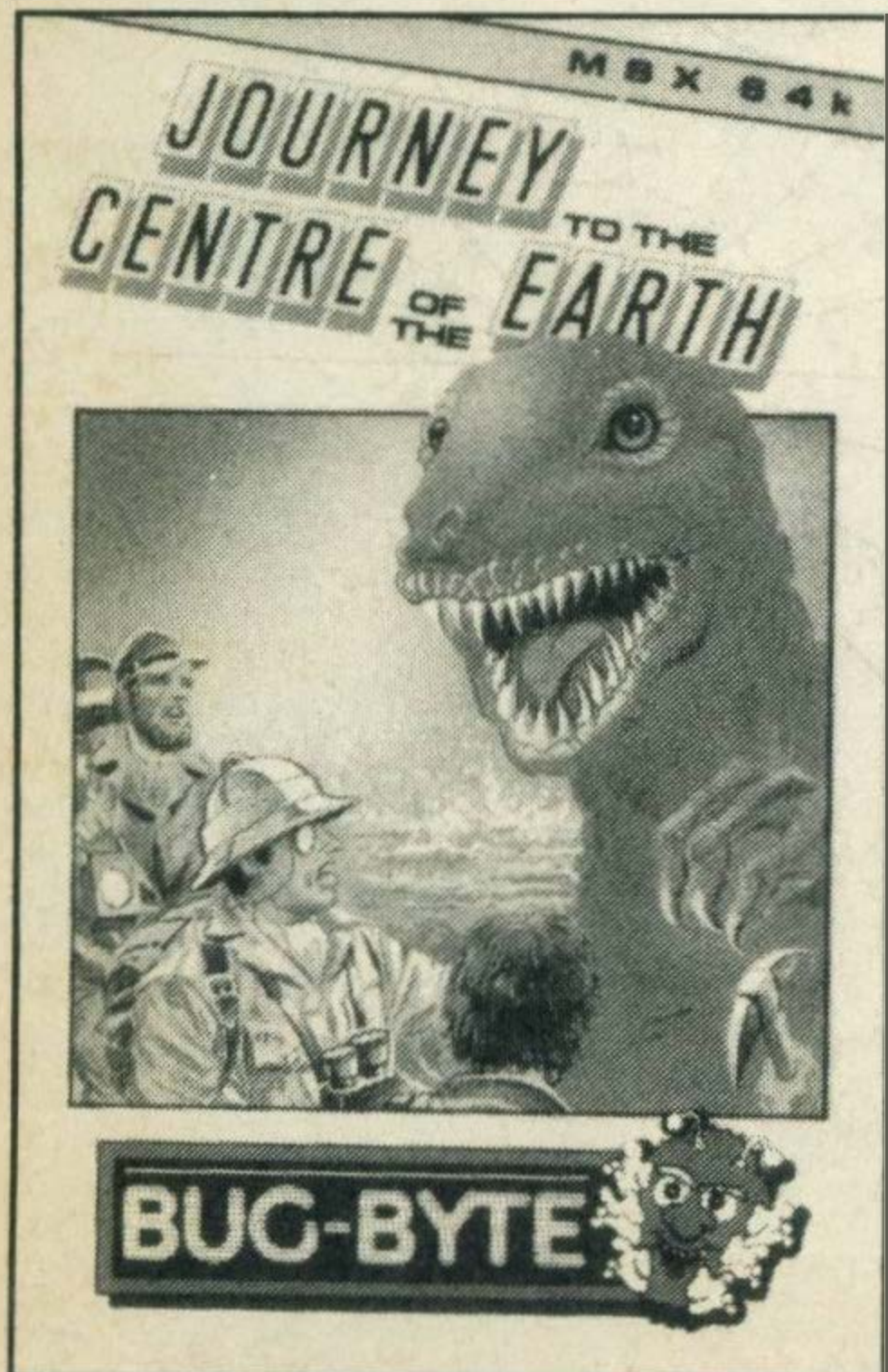
It's latest title is called *Journey to the Centre of the Earth*, named after and based on the popular Jules Verne novel.

The tape contains four separate adventures and has over 160K of program for the incredibly low price of £2.95.

The authors Roy Butler and Chris Wyatt recommend that you make a map, keep an atlas handy and learn some Icelandic.

It sounds like an intriguing adventure so don't miss our review in the next issue.

For more detailed information contact Bug-Byte Software on 01-439 0666.



Bug-Byte's latest title

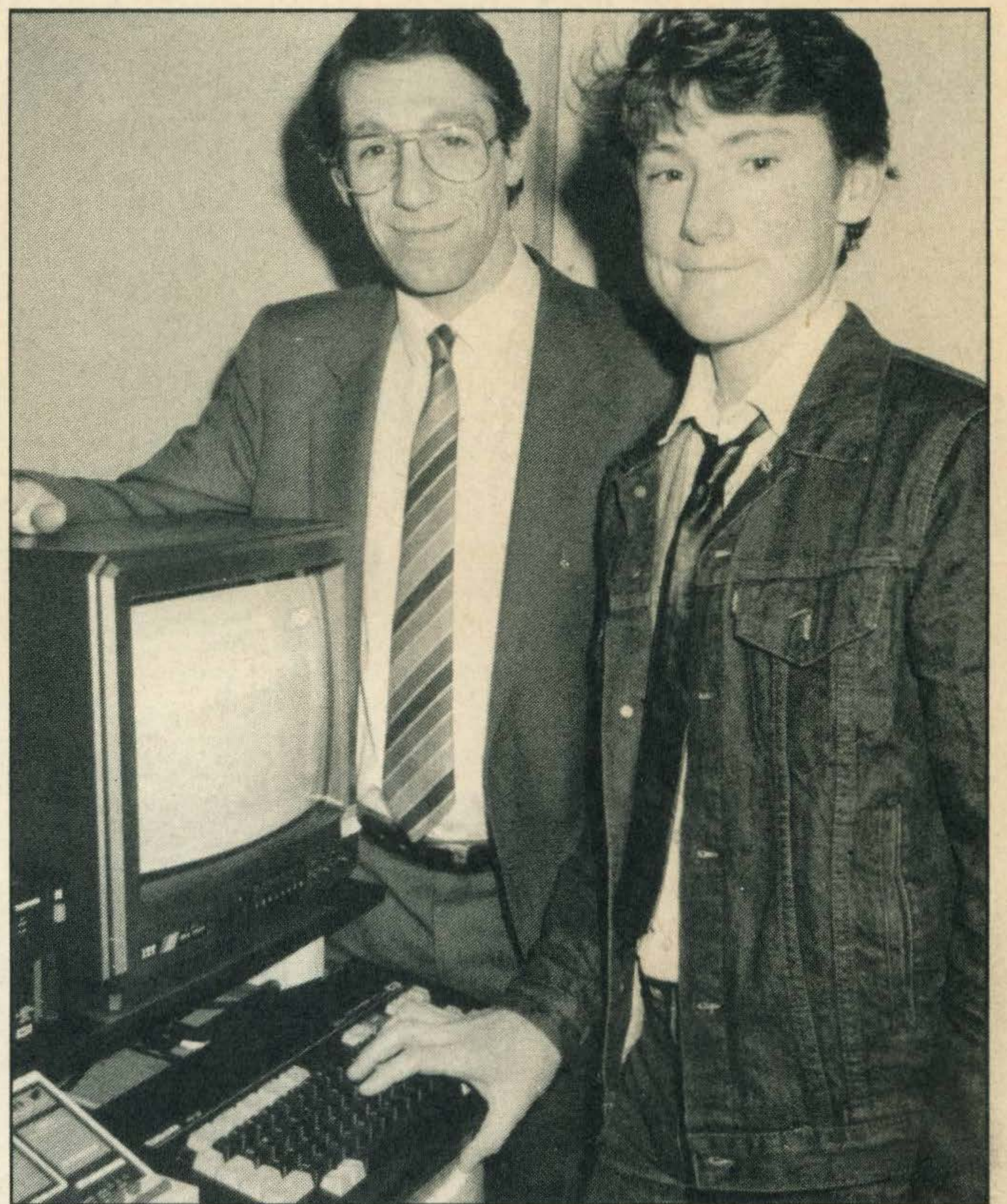
## Low cost option

If you're on the look out for a low cost printer to run off your listings, Epson's latest model could be just the ticket.

The P-80 printer costs £160 and special features include emphasised, enlarged, condensed and underlined styles plus two bit-image modes.

Paper is friction fed and sheet widths from 1440mm to 2160mm can be used.

Contact Epson on 01-902 8892.



## Tim wins a Toshiba!

A Toshiba HX-10 MSX micro was the prize to be won in a competition run by Buckinghamshire distributor D. L. Chittenden.

The lucky winner was Tim Rance of Ley Hill near Chesham.

The competition was run in the county's local paper and Tim's entry was the first correct one out of the box.

'I could not believe it when I was told I had won,' says Tim, 'I hope to do some serious programming now.'

## Fire power in great demand

Euromax is making inroads into the MSX market with the launch of three new joysticks.

At the low end of the price spectrum is the Wiz Card, a flat card shaped controller, with eight directional graphite pad and two graphite spring firing buttons.

The second joystick called the Pro Ace is slightly more expensive with a price tag of £11.95. It too has eight directional switches and a spring mounted firing button and is highly responsive.

Micro Ace is the third joystick and this comes in at the more inflated price of £15.95.

All three joysticks are available at the end of June and come with a 1.5 metre length lead and a six month guarantee.

Euromax has two more joy-



sticks in the pipeline, the Professional costing £16.95 and the Elite which is expected to retail for around £15.95 both will be available in July and August respectively.

For more details contact Euromax on 0262 601006/602541.

## There's magik in the air

Level 9's much vaunted and long awaited sequel to *Red Moon* has now been launched.

*The Price of Magik* costs £9.95 and is Level 9's first adventure program that incorporates independent controlling of creatures.

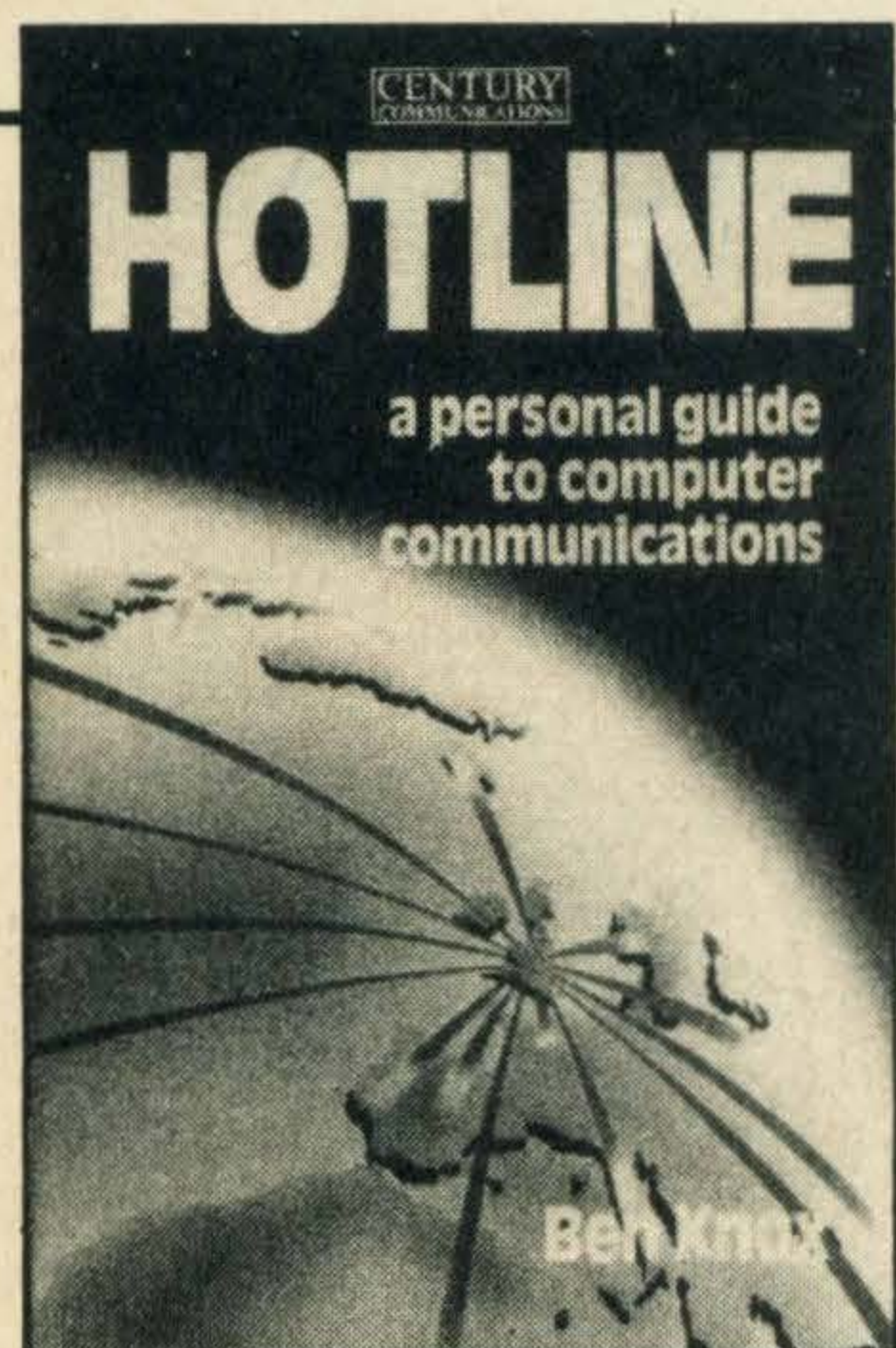
According to the company's Pete Austin it has more spells than other titles and special features include full-sentence commands, a 1000 word vocabulary and over 200 illustrated locations, as well as multi-tasking so you needn't wait while pictures draw.

Watch out for our adventure column in the next issue of *MSX Computing* as our adventurer Mike Gerrard will be reviewing *The Price of Magik* and will no doubt include a few tips.









## **Hotline — a personal guide to computer communications**

by Ben Knox

Century Communications 01-240 3411  
£6.95

As more and more readers are expressing an avid interest in computer communications we had no choice but to bow to pressure from the punters and include yet another communications title in this month's *Printout*.

*Hotline* aims to explain in layman's terms all about bulletin boards, electronic mail, networks and how you can access many of the public databases that exist not just in the UK but Europe and the states.

The book is split into three sections with four chapters in each. The first section explains how to go online, the second the various services you can find when you've got onto the system and the final section is basically a reference guide to all the ASCII codes, addresses of database services and a glossary of computer terms.

Going online sounds painful to the uninitiated but once you've got the appropriate equipment such as a modem, RS232 interface and suitable software, the world is your oyster . . . well almost.

There are obviously areas which are not privy to the humble home micro user but there are an abundance of public databases available which should keep even the most inquisitive hacker occupied.

For instance not only can you access British Telecom's Prestel, but Telecom Gold and the popular Multi-User Dungeon (MUD) adventure game.

More ambitious users might like to try accessing CompuServe, an information service based in the states but this is really only available to users of Commodore, Apple and IBM machines.

All of these services cost money and throughout the book Ben Knox goes to great lengths to keep an eye on the purse strings and most of his advice is based on what will be the least expensive, but most effective way to get the most from your equipment.

*Hotline* is an excellent users guide to communications and you will still find it an interesting and intriguing read.

# PRINT OUT

## **Warning This Computer Bytes!**

by Kipper Williams

Javelin Books (0202) 671171  
£1.95

If computers rule your household and your nearest and dearest are micro maniacs, take heart and read a couple of pages from this zany title by Kipper Williams its sure to put a smile on your face.

It is very rare that I review humorous titles within these sacred pages but *Warning This Computer Bytes!* is so hilariously funny that it just had to be shared, even the editor couldn't resist a snort and a chuckle.

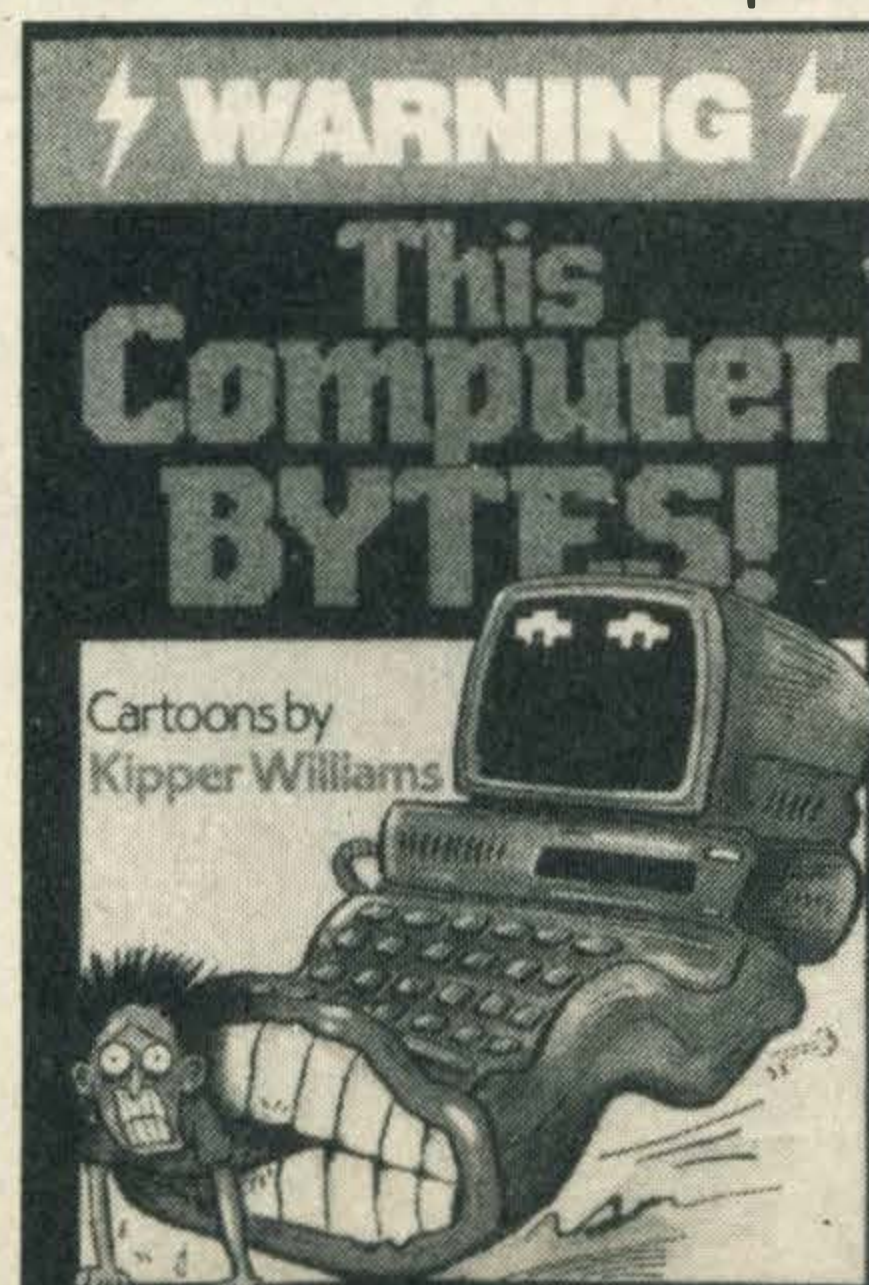
Kipper Williams is probably familiar to readers of *Time Out* and *The Radio Times* as is his humour albeit (sometimes) warped!

His book contains well over a hundred cartoons ranging from the ridiculous to the sublime. It is the sort of book that will appeal to all ages and not just to computer buffs.

One of my favourites is the one where he reverses the 'alien zapping' concept and depicts an alien zapping pin-striped bowler-hatted city gents, another favourite takes place in an Indian restaurant and has the chef playing *Spice Invaders*.

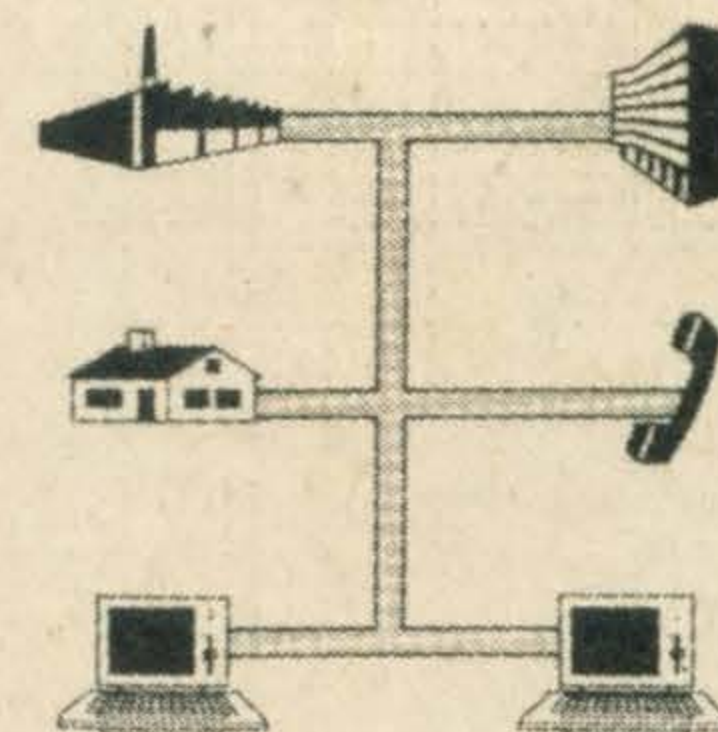
One of the more sillier cartoons depicts a traveller crawling through the desert gasping for sustenance naturally he sees a mirage — yes you've guessed it of a micro.

The best cartoon is where a computer hack is sat glued to his keyboard explaining the importance of modern technology and says 'But anything REALLY important I scribble on the side of the computer'.



## **An Introduction to Computer Communications**

R A PENFOLD



## **An Introduction to Computer Communications**

by R A Penfold

Bernard Babini Publishing  
01-603 2581  
£2.95

With the publicity surrounding Hugo Cornwall's *Hackers Handbook* and the media sensationalism surrounding the case of Anthony Anthoniou who was fined £50 for breaking into British Telecom's Prestel computer, many computer enthusiasts' natural curiosity into computer communications has been aroused.

To meet the demand of this curiosity RA Penfold has written a very cheap and authoritative guide for the uninitiated.

However, if you're hoping for a rundown on techniques that will allow you to break into MI5's mainframe or for tips on how to boost your bank account, forget it, this isn't that sort of book.

This book is solely aimed at explaining the basic principles of communications so that you are equipped with enough information to enable you to go out and buy a modem and communicate with fellow computer users or access many of the public databases that are available.

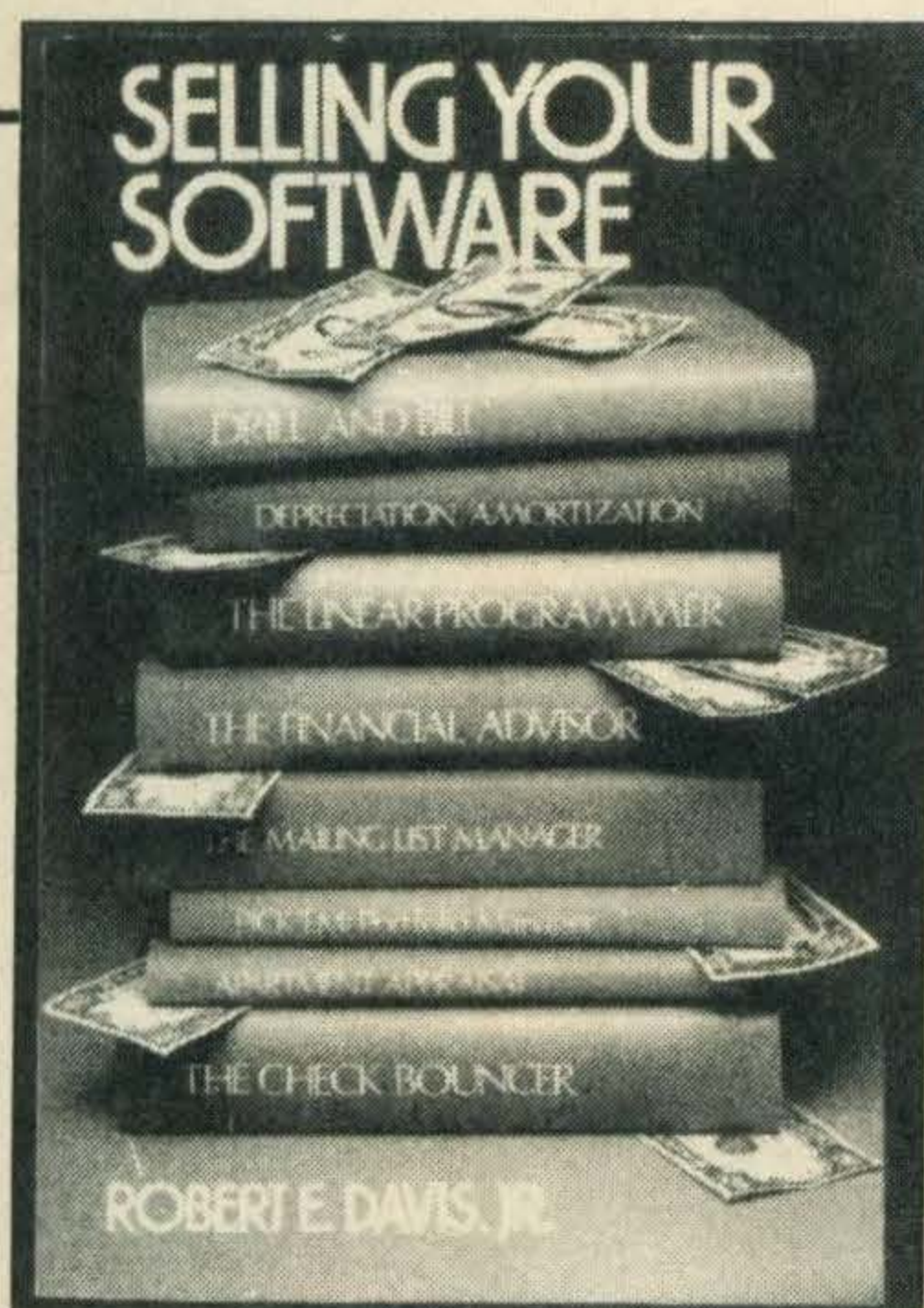
It's not a hefty title to read as it consists of only three chapters but all are crammed with invaluable information for the novice.

The first chapter is primarily concerned with modems and it runs through the different baud rates and goes on to explain the different features to help you decide what's best for your purposes. Penfold also includes a quick rundown on PSS (Packet Switching System) and wraps up the chapter with details on how to connect up a modem.

Chapter two discusses local networks and how to connect up local micros via RS232C or RS423 interfaces.

The final chapter is geared towards computer users who are radio hams as it runs through the intricacies of radio communications and this is probably the most fascinating chapter as distances of many thousands of miles can be bridged.

This introductory title certainly whetted the appetite and has aroused my curiosity.



## **Selling Your Software**

by Robert E Davis Jr

John Wiley and Sons (0234) 784531  
£15.45

If you have often pondered over the software reviews in computer magazines or bought a game that didn't live up to your expectations, and thought, 'I could write and design a better game than that', then this title from John Wiley and Sons could put you on to a more lucrative track.

The author Robert Davis has written this book with the aim of helping programmers to design better programs and market them professionally for cash.

And, as few computer users we've come across are averse to making a quick buck, we're quietly confident that *Selling Your Software* will prove to be very popular.

Although this is written by an American for the American market, it is of universal appeal and doesn't claim that selling software is easy no matter where you live.

On the contrary, Davis starts off on a pessimistic note by warning that you're up against stiff competition and that the key to success is in making your software stand out from all the rest. He then goes on to suggest ways in which you can improve your wares.

The first chapter is dedicated to get you started and goes right back to basics, for example knowing your computer. In other words, knowing what you can and cannot do.

He then goes on to explain how to write a program and suggests drawing a flow chart so that you can keep track of all the different steps. Once the programming has been explained, Davis then suggests the types of programs that users want and that you can ultimately sell, such as home budgets.

There are also several useful chapters devoted to sales, royalty contracts, copyright protection (after all, you don't want someone else filching your idea after you've done all the graft).

And as an incentive the author also includes several examples of programs that have already been successfully marketed.

For the budding entrepreneur this is the ideal book to read at £15.45, it's not cheap but, as the saying goes, you have to spend money to make money.

**Cast your eyes  
across our pick of  
the paperbacks with  
two titles on  
communications,  
advice on selling  
your software and a  
humorous view of  
home computers.  
Reviewed by Julia  
Alexander**

## **How to Design and Make Your Own PCB's**

by R A Penfold

Bernard Babani Publishing

01-603 2581

£1.95

So many readers of MSX Computing write in or telephone us for advice on simple electronics and designing pcb's (printed circuit boards) that we decided it was high time to review a book that goes into the area in a greater depth than we can.

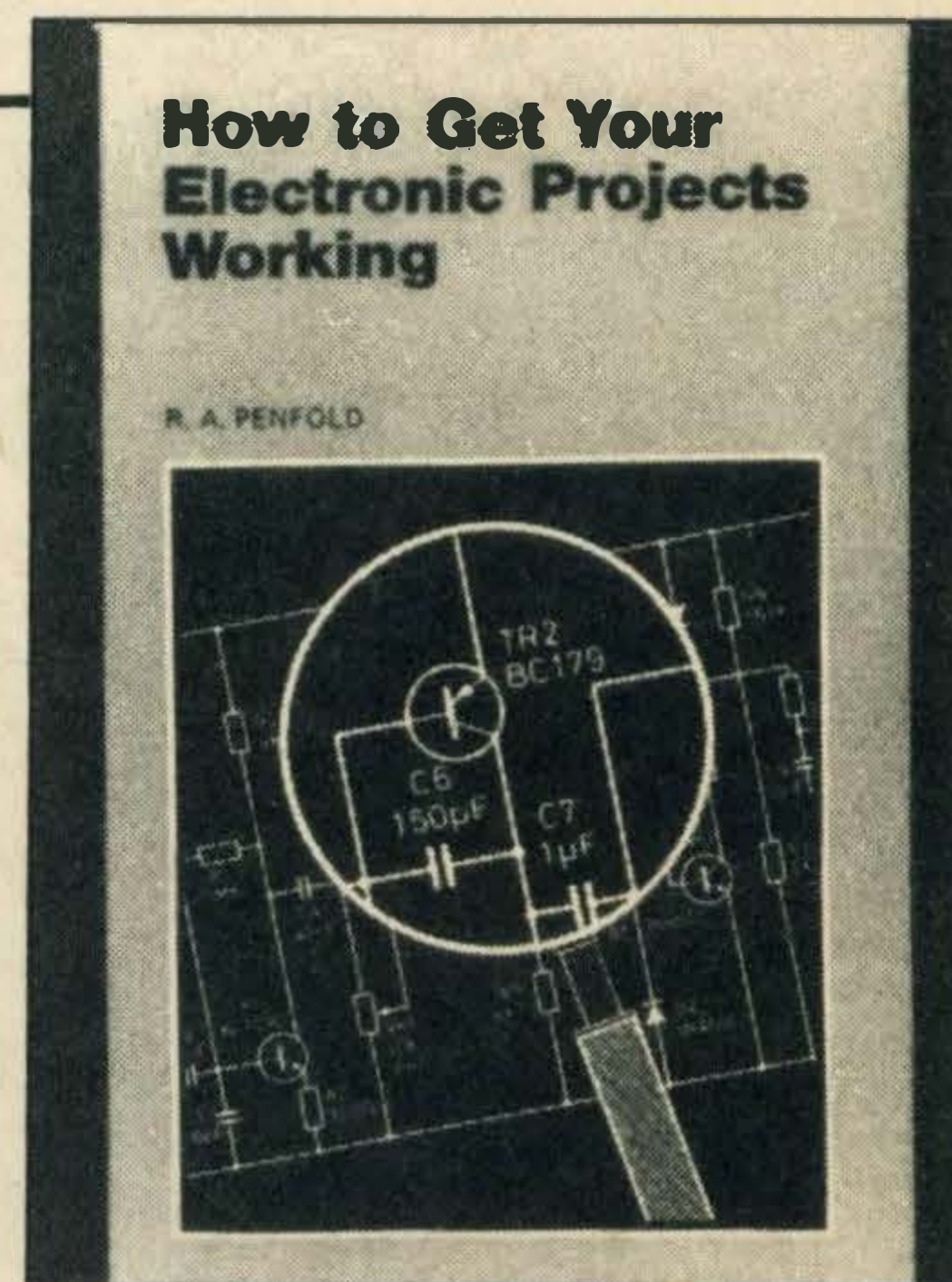
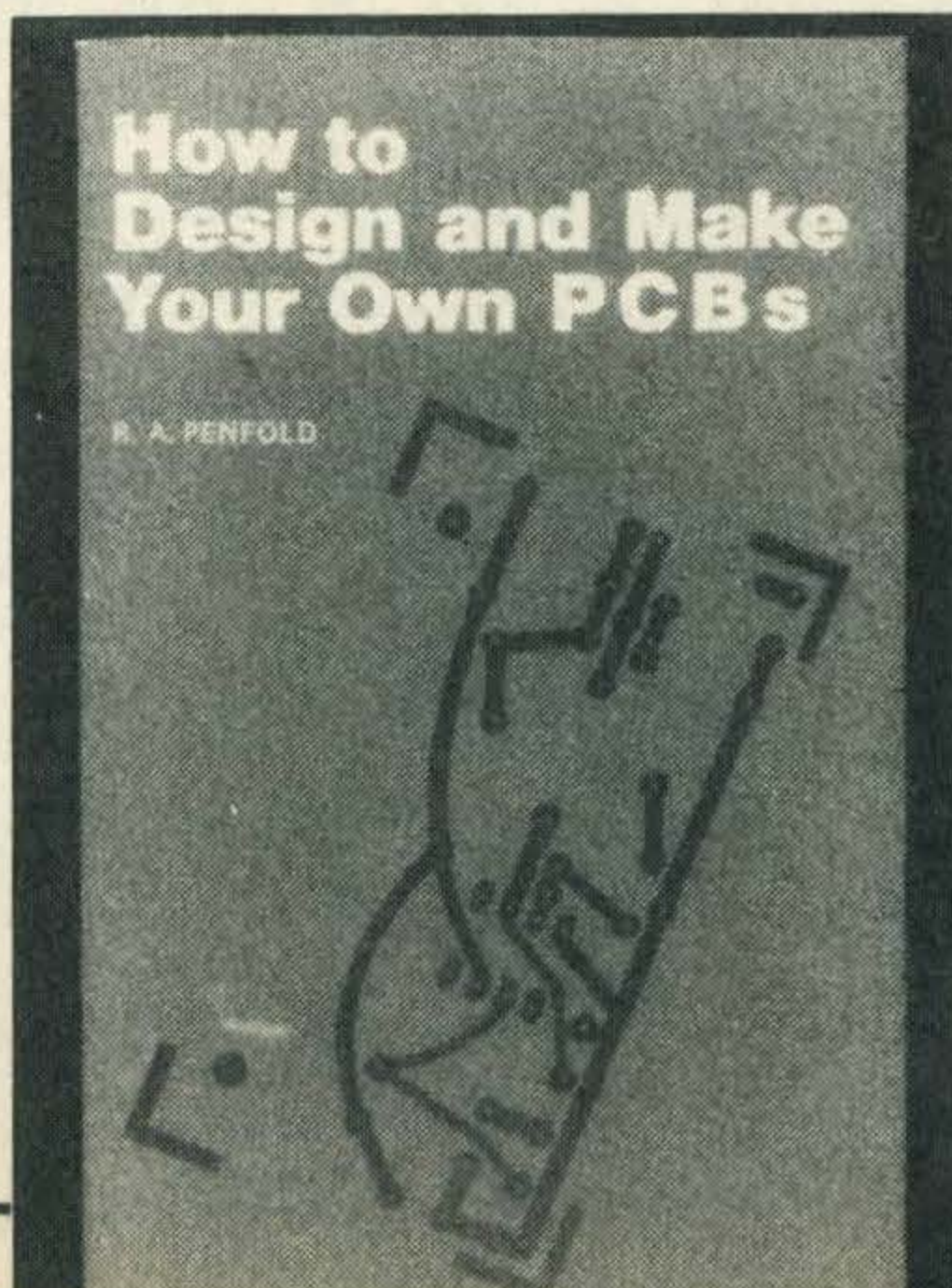
*How to Design and Make Your Own PCB's* is written by Babani Publishing's most prolific writer R A Penfold who has already written many titles for the computer/electronics buff.

The emphasis of the book is very much on the practical aspects of pcb design and construction, which makes a lot of sense as it's all very well learning the theory but it's practice that makes perfect.

The first chapter starts off by saying that it isn't difficult to design pcb's for simple electronic projects but you need the appropriate tools and equipment and Penfold gets the uninitiated off on the right foot by running through the basic tools and materials required.

The following two chapters then get down to brass tacks and start showing how to go about constructing your design and which you should have no problems following.

At £1.95 this title is a bargain and well worth purchasing.



## **How to Get Your Electronic Projects Working**

by R A Penfold

Bernard Babani Publishing

01-603 2581

£1.95

Have you at some stage attempted to build circuits from a magazine and found to your dismay that they didn't work? If so then don't despair help is at hand with this latest title from Babani Publishing.

The author who appears to be writing from his own experiences aims to guide you through the many pitfalls of building your own electronic gadgets so that you'll be able to spot many of the common faults that can occur.

He begins by saying that in his experience many newly built projects which fail to work can usually be corrected with the minimum of technical know-how. But he stresses that sometimes simple faults can take quite a long time to track down and that patience is a prerequisite.

The first chapter kicks off by explaining how to look for faults and advises you to check all the wiring and soldering thoroughly as well as any plugs or sockets. Apparently one of the commonest faults is a short circuit caused by a solder blob!

The other chapters go into fault detection in greater depth and do tend to verge on the technical side but if you are already an electronics fiend the ground covered should be familiar to you.

The most interesting chapter is the third one which considers various ways of testing components such as resistors, capacitors, diodes and transistors.

In the final chapter the author shows how you can build your own test equipment.

Although this title is not MSX-specific it's worthy of a place in *Printout* as so many readers of *MSX Computing* are interested in building gadgets for their MSX's.

Electronics doesn't have to be complicated, as long as you get to grips with the basics and try not to be too ambitious first time round, you could soon be designing and building your own devices for your MSX micro.



## What size memory?

Please can you tell me if the Sony Hit Bit is a 64K micro as I have been trying to load 32K and 48K games with no success.

A Jarrett

The Hit Bit is a 64K machine. Have you tried adjusting the phase and volume settings on your data recorder?

## Under pressure

I am an avid games player and have already worked through a couple of joysticks including the JVC HC-J165 joystick.

Can you recommend a good joystick that will stand up to a lot of use?

K Clements  
Walthamstow

Phew! Your hands must be covered in blisters by now!

The best Joysticks to go for are those with continuous or rapid firing buttons. Alternatively any of the Quickshot range of joysticks are suitable as is a Cheetah or Konami's Hypershot controller.

## Data dilemma

Firstly I would like to say thank you for such a wonderful magazine. It has helped me select my computer and a data recorder.

However, the data recorder I have purchased, the Philips D6450 didn't come with a lead where can I buy one from?

W Smith  
Cardiff

# DOS7 BAG

Here's your chance to have a say. Have you been let down by a supplier lately? Or pleasantly surprised by the service you've received? Or perhaps you're just plain stuck on level 1,001 of your favourite arcade action megagame?

Whether it's a word of praise, a moan, programming tips or a word of advice, we want to hear from you. It's your page, so put pen to paper — now.

Any high street computer dealer should be able to supply you with a lead for your data recorder. But it's worth your while contacting Philips on 01-689 2166 as usually leads are included in the box with your data recorder.

## Radio hams replying

We have received many letters

after publishing Mr Wylands letter in the April/May issue of *MSX Computing*.

Andy Emmerson of Northampton, Arthur Knight in Dorset, and Alan Duncan in Aberdeen all suggest contracting JEP Electronics, New Road Complex, Kidderminster, Worcs, DY10 1AL (telephone 0562 753893). As currently this is the only company that has a commercial reader program available for MSX.

For more information, John Morris has written a book called the *Amateur Radio Software* (price £8.95) and is available from the Radio Society of Great Britain, Lambda House, Cranbourne Road, Potters Bar, Herts EN6 3JW or telephone 0707 59015.

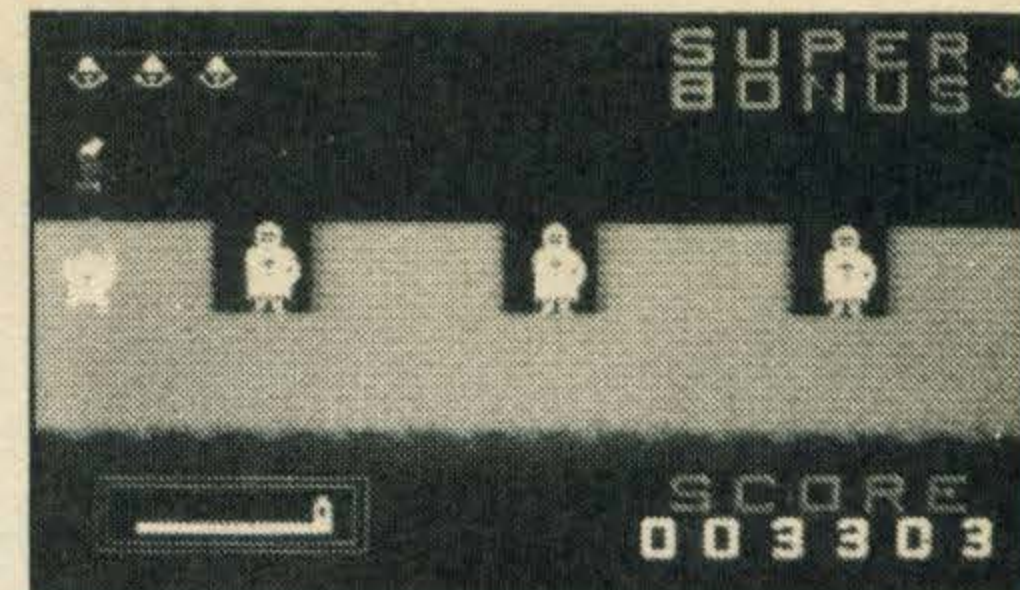
## What MSX expansion?

I read with interest the recent article on MSX 2 and like other readers I expected an upgrade kit to be available for MSX 1.

Is not the biggest selling point of MSX future compatibility? Owners of the BBC Micro have been well served by upgrades and add-ons, so much so that the machine is at the forefront of technology.

If we are unable to upgrade our MSX 1 machines, what is the purpose of the so-called expansion bus?

Andy Swift  
Bolton



Watch out for the knight

## Life eternal

This program will enable you to have unlimited lives in Ocean's *Hunchback*.

Just type in the program, put *Hunchback* into the data recorder and press PLAY and then type RUN.

10 BLOAD "CAS:"  
20 POKE -28370,0  
30 DEF USR=&H9000  
40 A=USR(0)

*Manic Miner* pokes coming soon!

B Lafersanne  
Merseyside

## Who entertains who?

Things were really humming weren't they about a year ago MSX growing fast, magazines full of useful and interesting stuff, with *MSX Computing* leading the field.

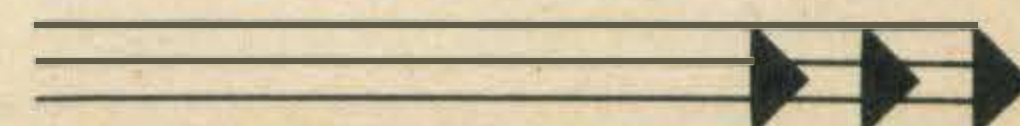
Since then however, things seem to have gone downhill. *MSX Computing* went bi-monthly, and your competitor *MSX User* dried up altogether.


I confidently expected the quality to increase, or at least stay the same, bearing in mind that the quantity on the shelves reduced to about a quarter. Alas not so!

It was P J Clark's letter in the February/March issue that prompted me to write. He'd worked out a simple decoder and your reply was a pat on the head saying 'But unfortunately lack of space prevents us from



Check that your data recorder comes with a lead not all do



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printing it'. What a reply.

I am sure P J Clark didn't want a pat on the head but to share his idea with other readers. And your reply went on to say 'If any readers have designed useful or interesting gadgets or software we'd love to hear from you'.

I think you've got it wrong. We are out here parting with our £1 coins to be amused by you, and not the other way around!

*P Holland  
Poole*

## Adventure programming

As the owner of a Toshiba and an adventure game fan I am interested in trying my hand at writing my own games.

Are there any adventure game's books that I can use to help me program?

*Terry Cook  
Harrogate*

There is an excellent programming book written by Steve Lucas called *MSX Adventure Programming* price £7.95 and is available from Argus Books, 1 Golden Square, London W1R 3AB or telephone 01-437 0626

## Has MSX a future?

I feel that MSX has a lot to offer but right from the start it has suffered from high prices, poor publicity and equally poor advertising.

The price has now been corrected but there is still a lack of exposure in our high streets and a virtual dearth of software.

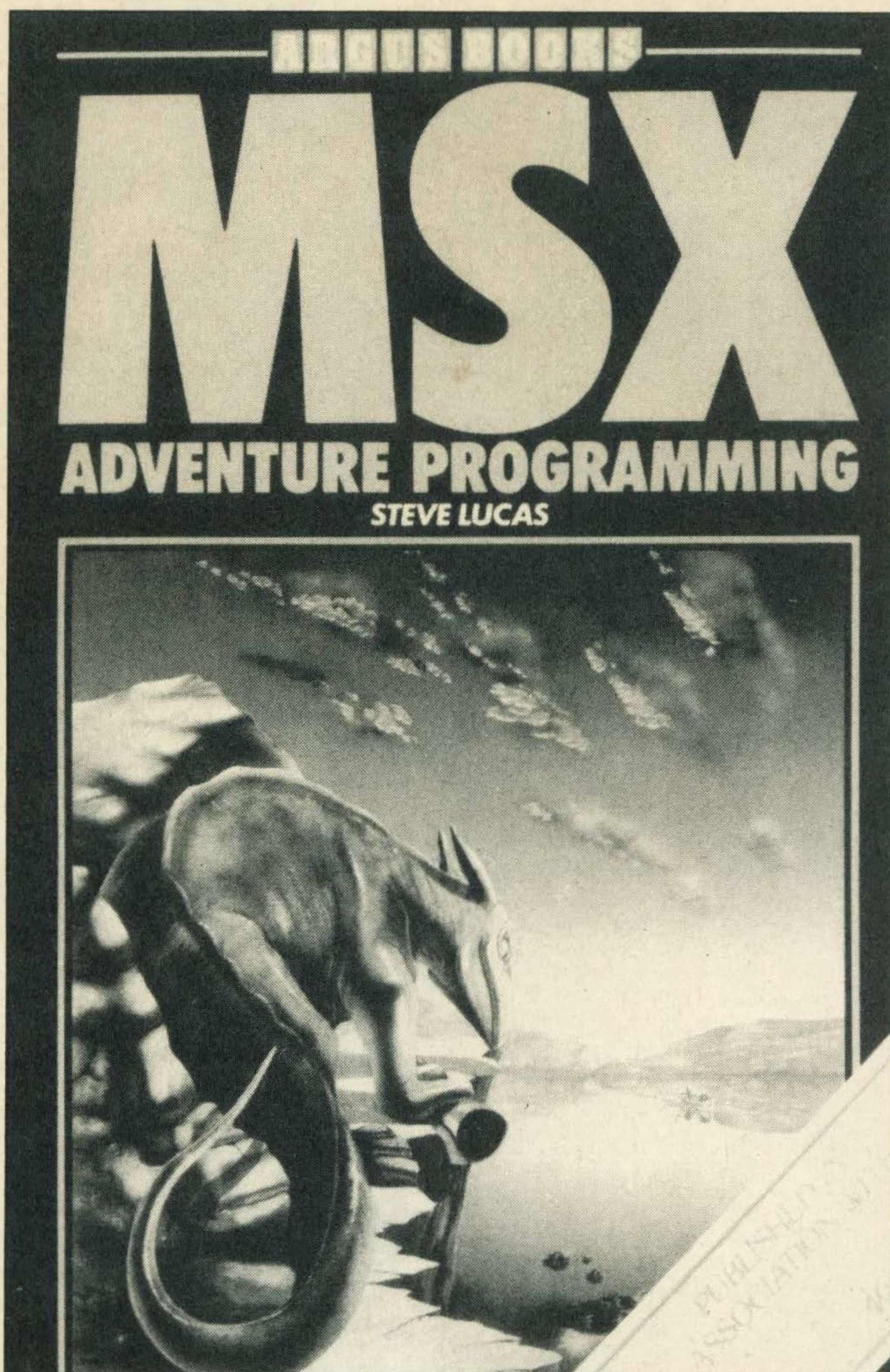
I am now at the point where I do not know if I should write off my MSX and purchase a more established model.

What exactly are the manufacturers (if anything) and software houses going to do in 1986 to stem the relentless progress of the Amstrad and BBC Micros?

*David Slocombe  
Kent*

Unfortunately we are not privy to the marketing plans of the manufacturers or the software houses.

All we can say is that Toshiba has already launched its HX-22 and Spectra-



*Writing your own adventure games can be fun and rewarding*

video's X'Press is also already available although both aren't strictly MSX 2 machines.

Yamaha is planning to release its CX-5M Mark II in the late summer and the autumn should see the arrival of MSX 2 machines including Mitsubishi's which was featured in *MSX Computing* late last year.

Like us I'm afraid you'll just have to sit back and wait.

## Fortran foibles

I am a student studying for an engineering degree and my course involves a fair amount of Fortran programming.

Is there any software on the market which enables Fortran to be run on MSX, I know software exists for the BBC B Micro but that is rather expensive.

*Nicholas Overfield  
West Midlands*

Sorry — as far as we know there is no MSX software

available for running Fortran, probably because it is a specialised language and not really used a great deal on home micros.

## Do-it-yourself disk drives

In view of the very high price of the Sony disk drive I wonder if any of the more enterprising MSX owners have managed to interface a 'cheap' standard 5¼-inch disk drive to their computers?

*A M Day  
North London*

If there are any 'enterprising' MSX owners handy with a soldering iron and screw driver drop us a line.

## Pricey peripherals

I am just writing to say that what a disappointment I have found the MSX system to be, what

with the very high price of disk drives, modems and etc.

An Amstrad can be purchased complete with disk drive and monitor for an amount more favourable than the MSX. What for goodness sakes makes the disk drives so expensive?

I'm sure I ask this question on behalf of a lot of other people who have also put their hard cash in the MSX system.

*Terry Miller  
Falmouth*

All we can say is that disk drives are expensive simply because there isn't a great demand for them, but having said that we get a lot of letters asking for more disk based business software, so there are owners/users out there.

## Incompatibility continues

We are writing in connection with the letter on compatibility in your April/May edition.

We own a Mitsubishi ML-F80 and use a Sanyo DR101 data recorder and have also found some compatibility problems on some programs.

Different data recorders have been tried with different phase settings and volume settings and still some programmes won't load.

Some programmes will however load on the reverse phase settings, but owners of Toshiba starter packs do not have many change facilities, neither do many of the cheaper data recorders. This means that for these people there are less programmes available for them to use.

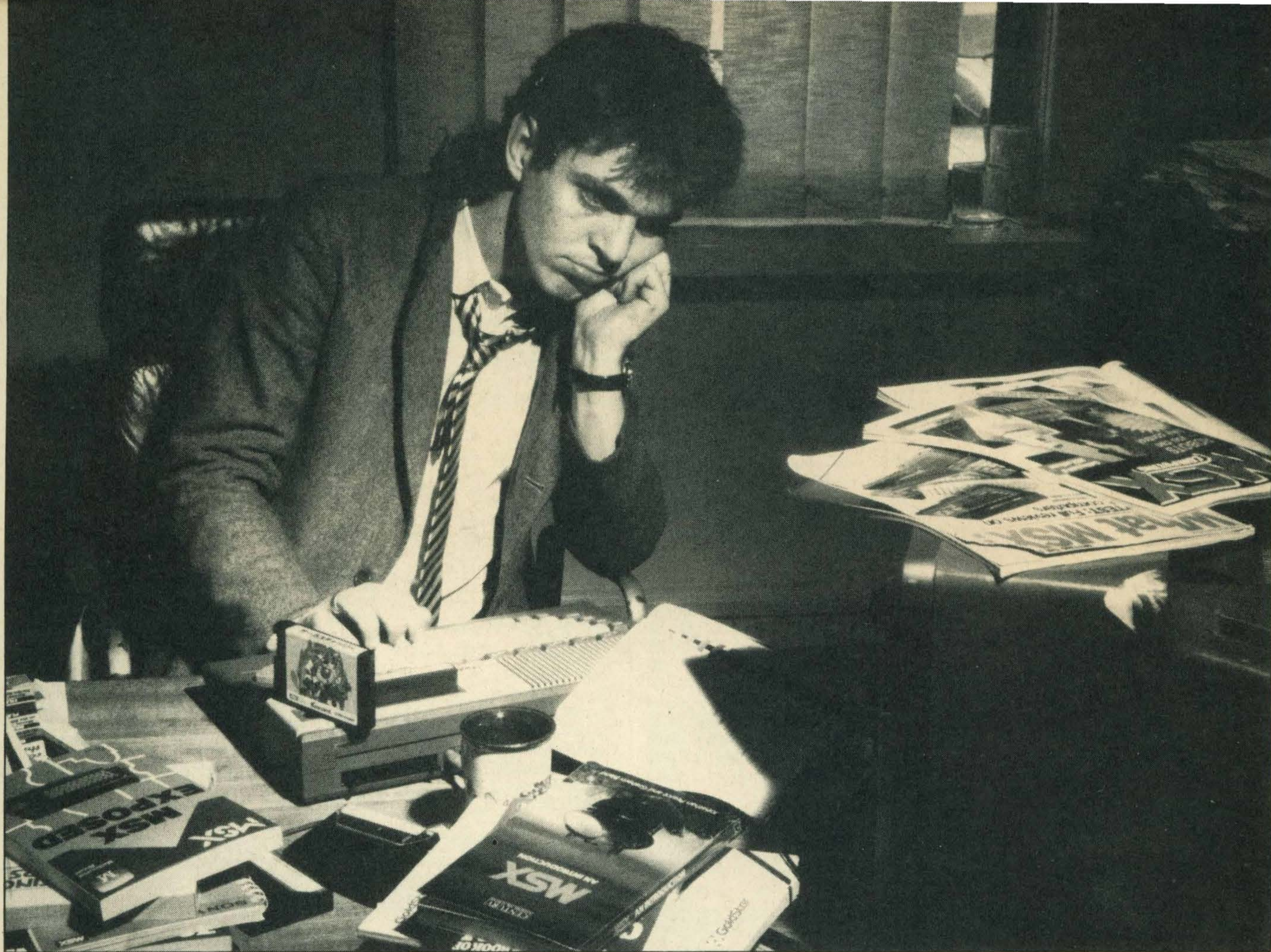
*A and G Earthy  
Lowestoft*

## Plotter pens drying up

I am having difficulty obtaining a set of pens for a Sony colour printer plotter. I have tried several addresses and telephone numbers from *MSX Computing* without success.

*R Marjoram  
Reigate*

Sony's customer relations division tells us that the pens are available from any authorised Sony dealer.



# Absolute Beginners

*Think you know all  
about computers?  
You could be wrong.  
By Martin Banks.*

**T**o begin at the beginning. It seemed like a good idea at the time that I should try to find out just a bit about all this MSX stuff. I've heard about it of course, even read quite a bit, but that is not the same thing as getting in there and getting the paws dirty.

It also seemed to be a good idea to approach the thing as a raw novice. Not only is this tolerably close to the truth — I already own a couple of compu-

ters as many writers on the subject do, but I wouldn't say that I have really got to know too much about any of them — but there must be thousands of users (and potential users) of the MSX family who start from the same place.

So, being a decisive sort of person, I managed to get something organised that would represent a good compromise between me finding out about MSX, and the other several thousands out there

getting something approaching a helping hand. The compromise was that I should get my hands on an MSX machine, and write about the experience. So far, let me tell you, it has been about equal, good and bad.

Anyway, not so long ago the esteemed editor of this august journal arrived with MSX in hand, saying such encouraging words as 'Try this for size'. The 'this' in question was a Sanyo MPC-100, a typical representative of the MSX breed. The first impression is often quite important and the Sanyo came out quite well during this first test.

Some computers look quite complicated, especially where the keyboard is concerned, but the Sanyo (and from what I've seen of them, most other MSX machines) has a clean and fairly uncluttered aspect. In particular, the four cursor keys standing clear and proud of any others were pleasing to see. It can be very frustrating on machines like the IBM PC, for example, to try and find the cursor keys in amongst the numeric keypad, and this can be important. Anyone who says they only ever use their PC for business and NEVER plays a game that needs the cursor keys is . . . well, lying; there,

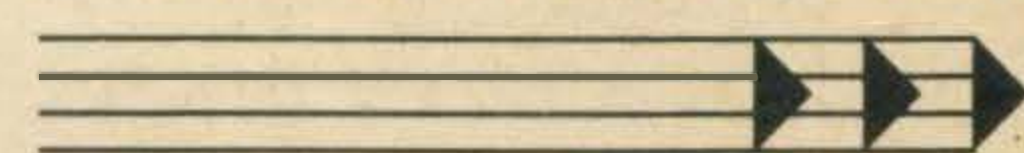
I've said it.

The other sides of the Sanyo were also fairly tidy and straight forward. On the right hand side, looking at the keyboard, are the two joystick ports and a RESET button. Looking at the beast from the back, all the input/output ports are clearly marked with real words, so there is no problem identifying which is what and why (well there is, but I'll come to that in a second).

From the left is the expansion port, followed by the printer port. Next is the 8-pin DIN socket for the cassette interface, with the output sockets for audio and video next to that. Last is the RF output socket and here was the scene of my first little silly mistake. It is however, the sort of mistake that is easy to make and therefore I feel justified in having made it.

If any of you are like me you will be a lousey manual reader. It is something I never seem to do until I need to, which is usually after the event. Looking at the back of the Sanyo, without having referred to the manual at all, I connected the TV aerial to the video output. It seemed logical at the time.

If anyone feels the urge to do likewise, don't. Nothing nasty



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will happen, you won't blow anything up, but the result will be very boring. I powered up the computer, which is pretty easy considering the power cable is fixed in (an obvious and sensible idea if you ask me), I also powered up the TV, tuned it to where the action should be around channel 36 and found . . .

Well, from the loss of the picture 'snow' when I got to channel 36, which told me something was happening, there was no other sign of activity. At this point, after some pressing of keys in a growing but well-controlled tantrum, I felt what I thought was a natural urge to find an MSX dealer and say something very rude.

In the end, I checked the manual, and found that the TV should have actually been connected to the RF output socket instead. It was amazing to see the difference when I bravely performed the change. Sure enough, there was life in the Sanyo after all.

So there was I, with an MSX computer live and working in its minimum configuration. It seemed sensible to want to try it out as soon as possible, so I dug deep into the bag of goodies the said esteemed editor had sent me with the Sanyo to see what I could find.

What I came up with was obvious answer, a cartridge. The Sanyo, like all the MSX family of computers, has a slot for a program cartridge. This can be found under the spring-loaded flap at the top righthand corner of the machine and is one of the great godsend of personal computing if, like me, you are excruciatingly lazy.

I have always been one to feel that all things technological should just get on with whatever they are designed to do with the minimum of fuss or intervention on my part. On this basis, programming computers has always seemed one of the ultimate intrusions on my life. This is why a) the next bit will be about cartridges, and b) I won't be covering programming in this feature but in a later one (now that should make for interesting reading when it comes).

But for now, back to reality. I picked out the first cartridge that came to hand and pushed it past the spring-loaded flap that covers the cartridge slot. I was about to push firmly home on to its connector when a thought struck me — I hadn't read the

manual on this trick yet, and knowing my luck . . .

Actually, my luck turned against this cautionary approach. Your esteemed editor had actually sent me several 'Getting Started with MSX' type books which he thought would be jolly useful. In the end, they all fell into the same trap of implicitly assuming that every potential reader knew as much as the author about the subject of MSX computers. They therefore had a short introduction saying obvious things like, this is the MSX computer, you plug it into the mains, the TV and a cassette recorder and away you go.

This usually took all of three pages to explain, while the next 200 pages were taken up with explaining Basic programming, with one book starting this process with a discussion on string variables . . . ho hum.

Cartridges? Oh yes, they were covered. It said they could be used. The only advice given (and essential advice it is true) was to ensure that the computer was switched off when inserting or removing a cartridge.

Now I have seen some expensive computers made unusable by someone trying to put one connector into another in the wrong way. As usual with such things, there is only one right way for the cartridge to go into the MSX connector, but even little me has bent connector pins before by getting things wrong. In practice the cartridge orientation is the obvious one, with the program label facing your, but the manuals don't say a word about it. I did try it, gently, the other way to see if it would fit and it didn't seem to. I wasn't going to push my luck, or the cartridge too far, however.

The first cartridge to come to hand was a Konami game program called *Tennis*. Now tennis is amongst the earliest of video games and is now part of the personal computer 'folk tradition'. That was one of the reasons I selected it in the first place, I suppose, the fact that even I could cope with a game of tennis.

And what an enjoyable time I had as well. This is a good game that demonstrates the MSX colour graphics and sound capabilities really well. As your editor had not delivered unto me anything resembling a joystick or two I had to make do with using the keyboard. This had its moments to begin with

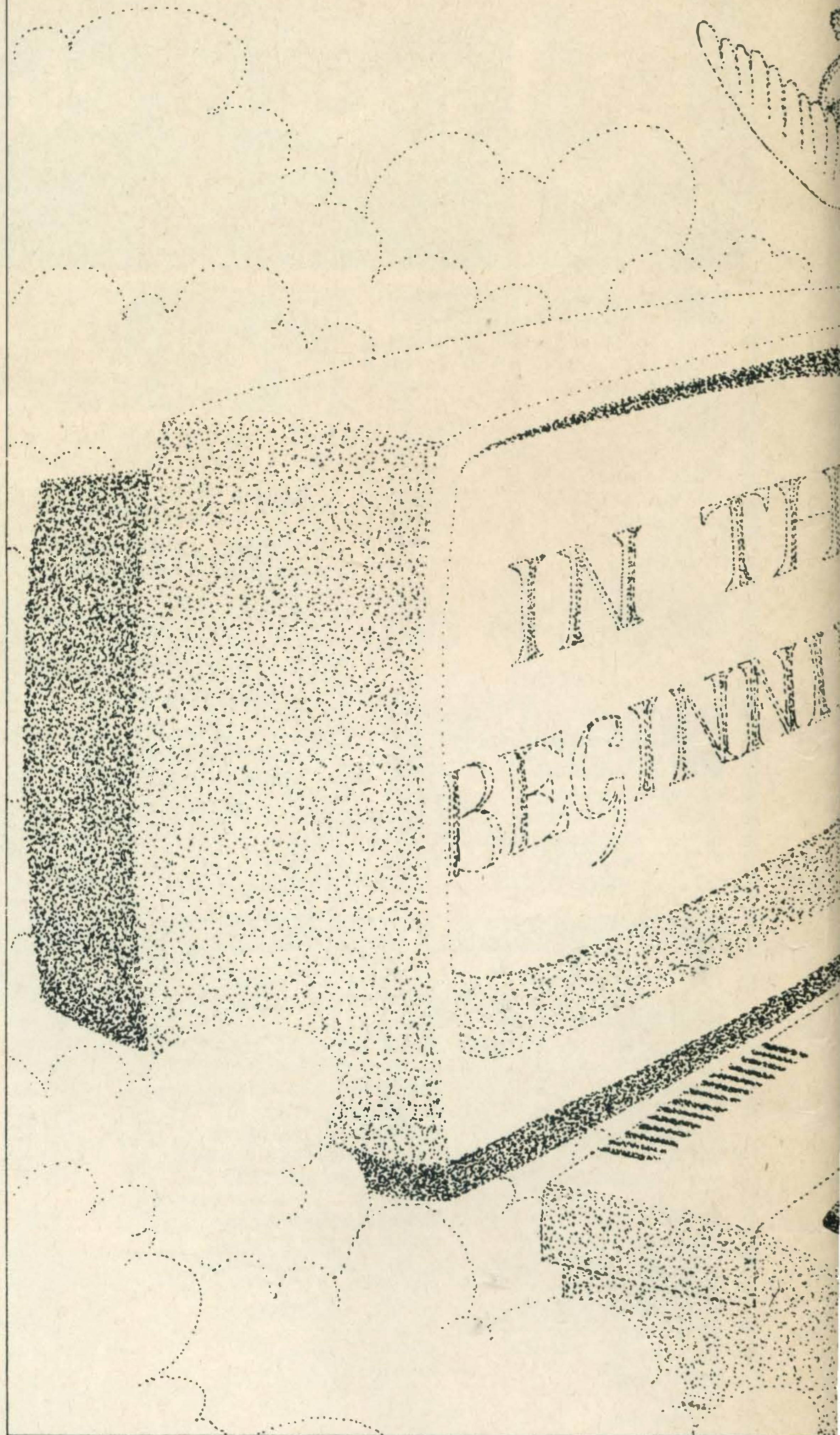


Illustration by Patrick Cuenot

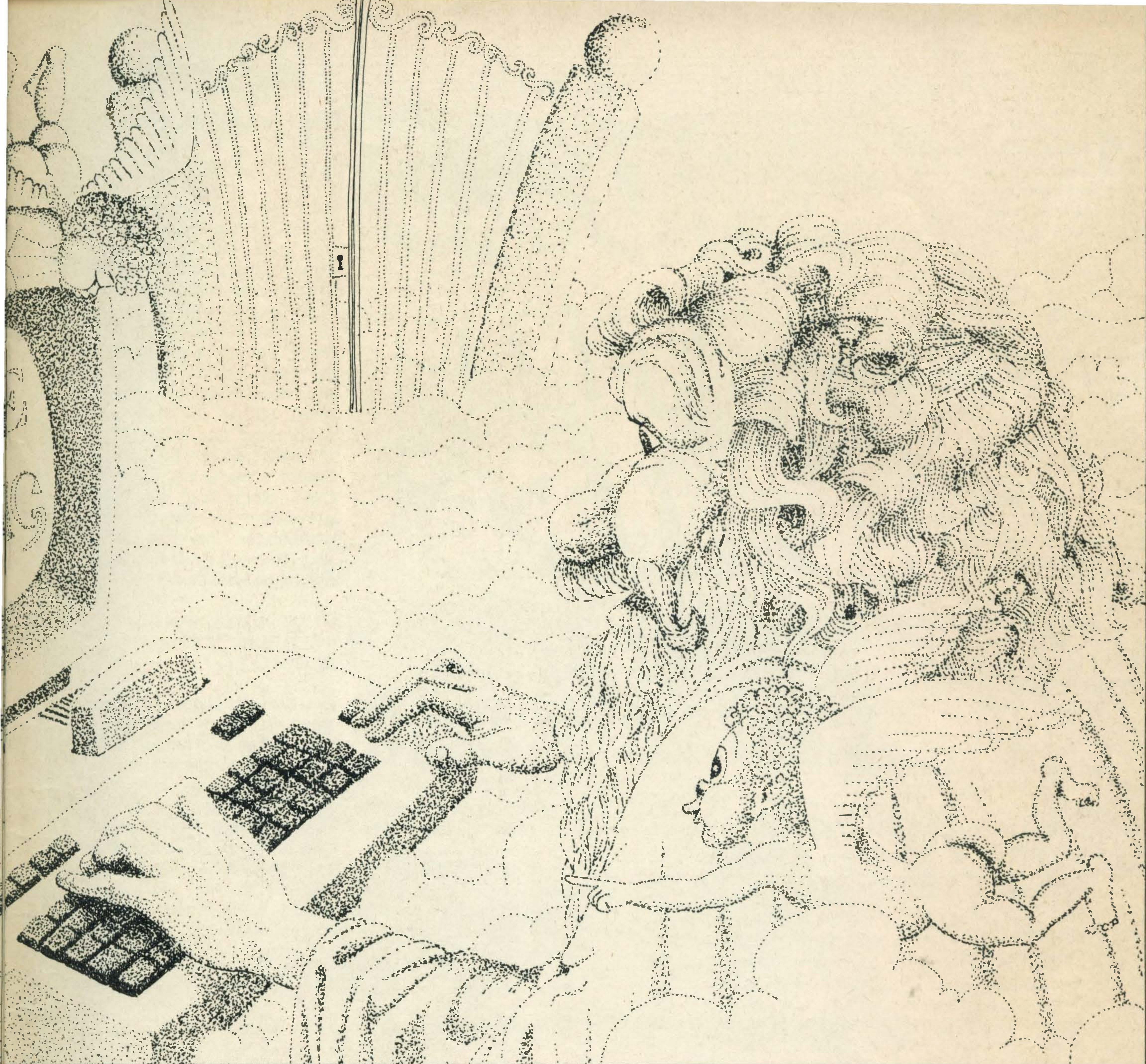
because the game had arrived with no instructions (which is not to say there never were any) and finding out how to play was rather a hit and miss affair, if you'll pardon the pun.

In the end, using the keyboard to play was a doddle, demonstrating well how effective the cluster of separate cursor keys can be. I soon got to be good enough to win the occasional point or two. I loved the crowd, who cheered ecstatically every time a point was won. (Was it my imagination that they cheered more when I won a point?)

In the end I went out and bought a red headband, a book called *High-Grade Abuse of the Umpire* and set to with a will. It was worth it, for on the lowest level of play, I managed at last to win one game. Needless to say, I lost the rest.

I then tried some of the other games that had arrived with the Sanyo. There were two more cartridges, one called *Athletic Land*, and the other *Hyper Olympics*. The former was one that seemed to go nowhere particularly, and tended to finish before it actually got there, anyway. Again there were no explicit instructions, so it was difficult to see the point of it all: this is a lesson in what is wrong with borrowing programs rather than buying your own!

*Hyper Olympics* was a bit more obvious, even without the any instructions, it being one of those wrist-wrecking games that are geared almost entirely around the speed with which you can keep hitting a key, in this case the right cursor key. Once again, despite my sporty pretensions, I have so far failed to get past the qualifying stan-



dard for the second event, the long jump. I don't know if this proves anything, but I suppose I must find some way of building up the power of my wrist.

There was also a more serious cartridge amongst the bunch delivered to me, an interesting-looking word processor from Toshiba, called *Bank-Street Writer*. It is my intention to give this a more thorough going over in a future epistle in these pages, though the brief glance I gave to the package (which this time did have some instructions) made it out to be OK. It did however have two failings, one of which could get in the way of any really serious word processing you might want to try. The first is the screen size, which limits you to a maximum of 38 characters per line of text.

The second, and more im-

portant failing is the need to switch between Write and Edit modes. Both should really be available together, so that mistakes can be edited or additions made as you are writing.

I was also going to have a look at some cassette programs that came with the Sanyo, but in the end this is going to have to wait. This is due in part to time constraints, but more importantly to problems getting any cassette to run.

Once again, I had turned to the manuals to see how to set things up and did as I was instructed (none too clearly it must be said). The 8-pin DIN plug went into the cassette socket on the computer and the three leads into their respective sockets on the tape recorder.

The next thing I read was the load instructions. In fact, I read the load instructions from one

of the manuals and two different cassette-based programs. As is often the way with such things, I found that they were all different. Now, there is probably a very good reason for this, and no doubt someone will write in with the answer before long, but I could see no apparent reason why there should be three different load instructions: CLOAD, LOAD and RUN. Indeed, there were actually four because two cassettes from one company had different instructions in each.

I tried them all but never managed to get anything into the machine. There was something strange about the remote control line of the cassette cable as well. I found that with it connected, nothing happened at all. I tried keying MOTOR ON as instructed in the manual but that had no effect at all. When I

disconnected it the tape recorder worked fine, but nothing seemed to load into the Sanyo.

Obviously there is an answer to this problem, and Murphy's Law states categorically that it will be something silly (probably me). I will let you know next time how I got on with this, what the solution was, and other things like connecting up to a printer and performing the wondrous art of word processing.

And my first impression? Actually I have enjoyed my brief introduction to MSX and yet, even after all these years, it seems that clear-cut instructions on the simplest aspects of personal computer operations are still impossible to write clearly, concisely and unambiguously. I wonder how many others have fallen into these simple and totally unnecessary traps?



**M**y visit to the Frankfurt Music Festival in February was suitably mind blowing, as I was reminded that we haven't looked recently at how MSX can simulate a simple (monophonic — single note) electric piano. The different ways we can approach the problem help us learn more about MSX and Basic so let's take a look... and listen too!

We generally talk about PLAYing music and sure enough the simplest MSX BASIC keyword for producing music on the computer is indeed PLAY. Initially, the format of PLAY parameters appear very straightforward — so the statement:

**PLAY "C"**

... for example, will play a note on your MSX through the AY-3-8910 sound generator with the same pitch as Middle C on an acoustic 'Concert Pitch' piano.

Don't assume from this, however, that PLAY conforms to any of the usual BASIC string or variable format conventions. MSX has its own Music Macro Language, similar to the Graphics Macro Language used with DRAW. A simple "Three Blind Mice" sequence looks memorable enough and can be played in one command, like this:

# CHORD AND CHIPS

*Captain Markes takes a bird's eye view, playing sea-shanties in Basic on an MSX micro*

**PLAY "EDC"**

PLAYing with variables, though, is strictly for broad-minded adults doing time (they haven't finished their sentences?) — so:

**K\$="C":PLAY "XK\$;"**

will also produce Middle C.

Remember to make a sandwich of the variable name between 'X' and ';'.

From this giant leap in knowledge, it's not such an enormous step to produce our first one line (delayed action) MSX synthesiser, which looks like this:

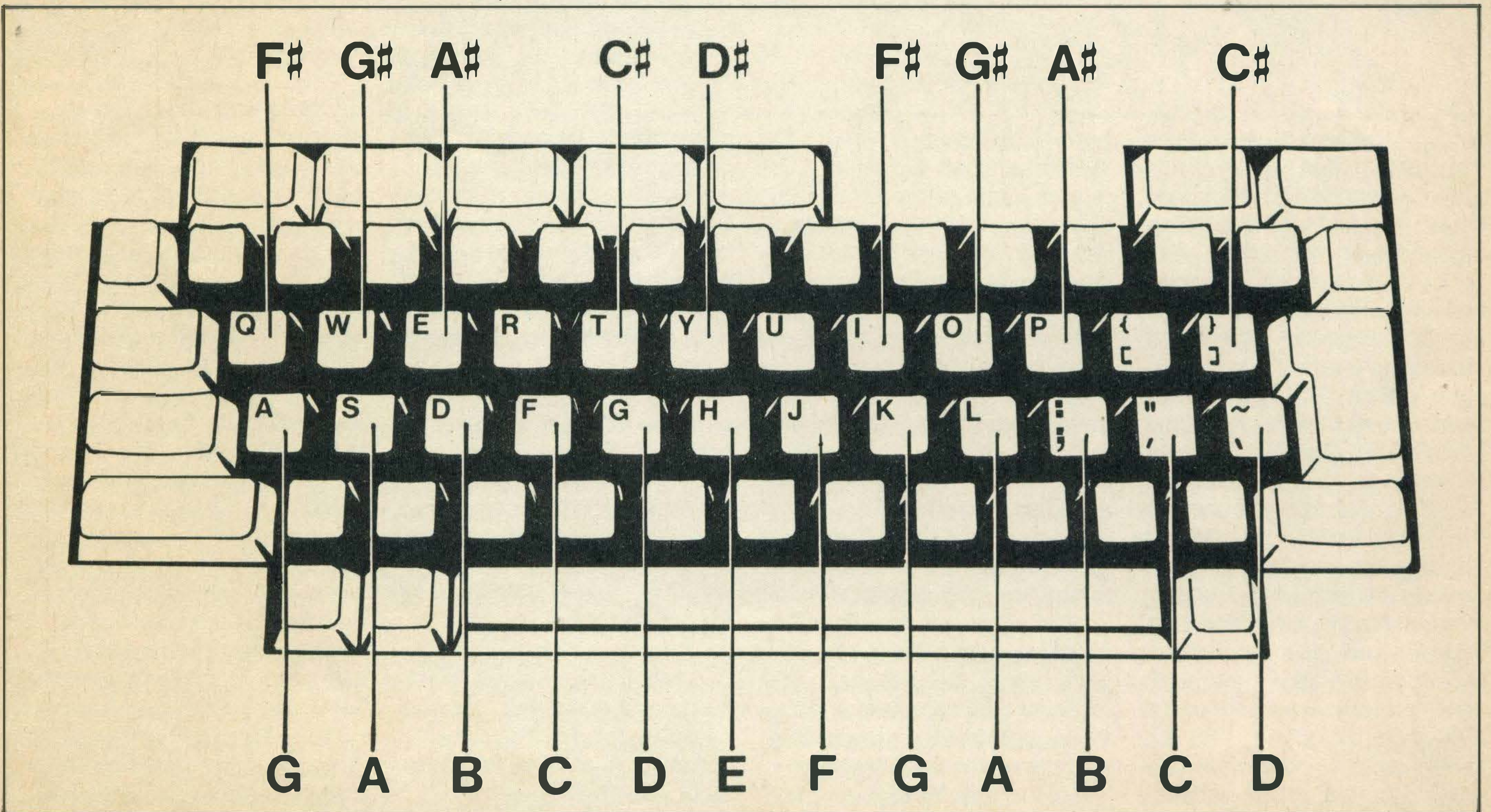
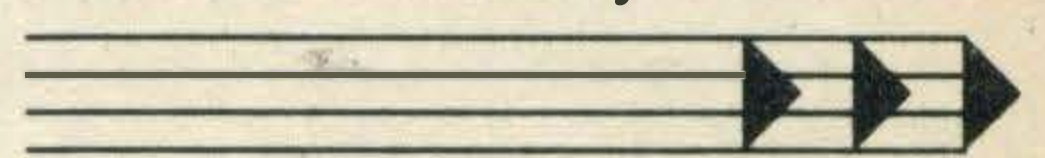
```
10 K$=INKEY$:PLAY"XK$;"
:GOTO
10
```

Now, as you press letters CDEFGAB on the keyboard, you hear their piano pitch equivalent played on the MSX.

The substantial sound delay is because, like some, but not all other home computers, INKEY\$ doesn't wait for a key to be pressed before performing the next instruction. PLAY picks up all the 'null' key responses, and plays them (soundlessly), queuing up to 20 before it plays the 'key' you have pressed. A slight improvement on the one line synthesiser, therefore, is — wait for it — the two line 'touch sensitive' synthesiser:

```
10 K$=INKEY$:IF K$<>"
THEN PLAY "XK$;"
20 GOTO 10
```

OK — that's not quite the music trade version of 'touch sensitive' (the faster or harder you hit the key, the louder the note) — but at least we are now getting immediate response. But the system is still very primitive, and if you hit anything other than a 'piano' key (A-G), the PLAY instruction will flag an 'illegal function call'. What's more, there is only one octave



*Just goes to show how much you can get into 35 lines of Basic*

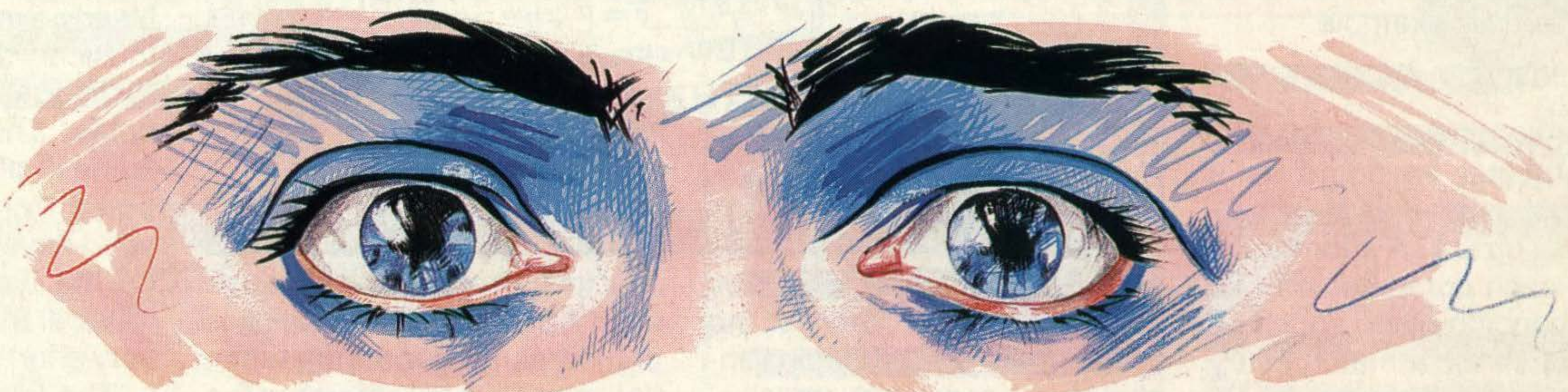
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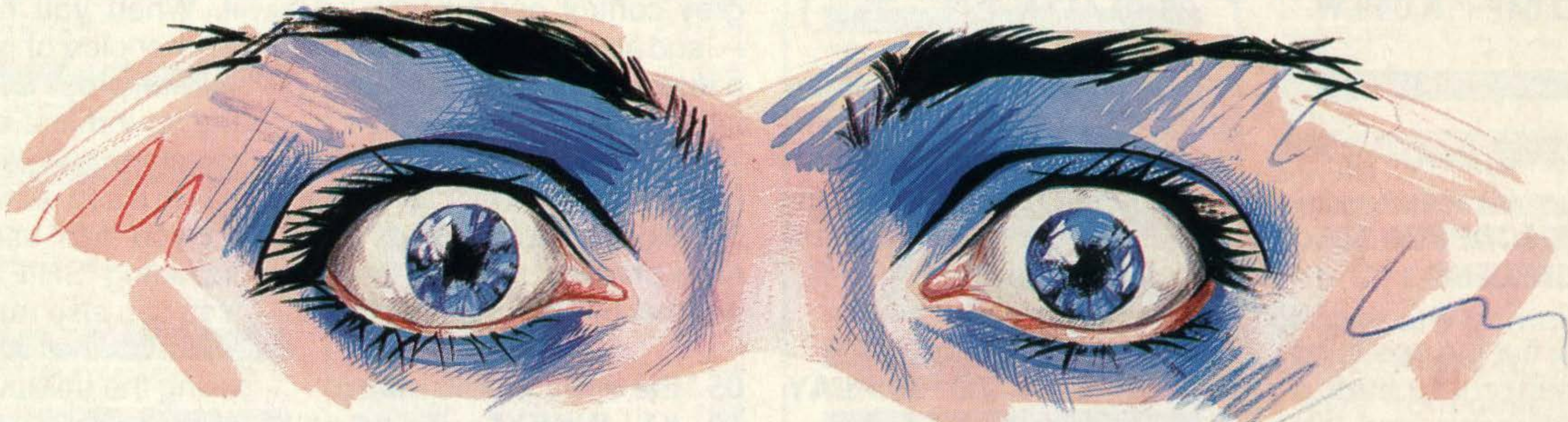
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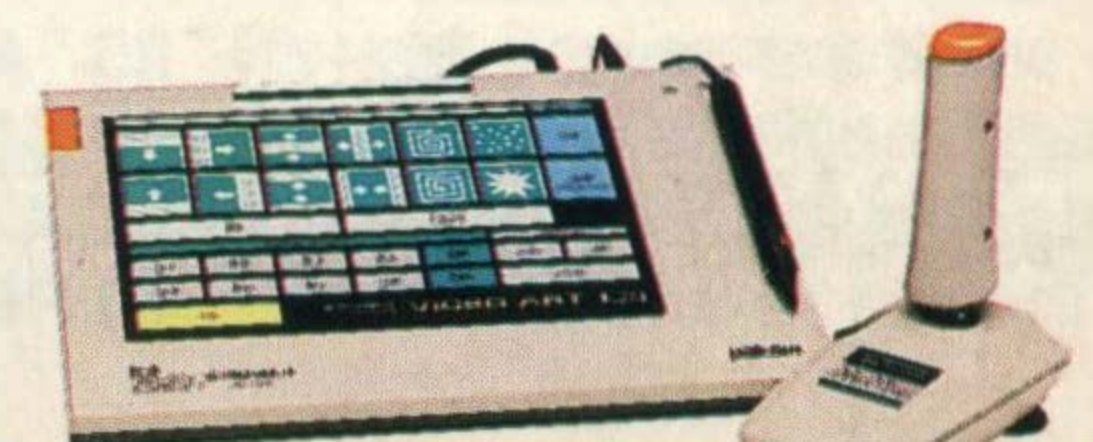
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And what you can't do with the optional Video Art graphics tablet and joystick just isn't worth mentioning.

WAIT 'TIL YOU SEE PIONEER



PIONEER

and no sharps or flats at all.

The Music Macro Language allows any one of eight Octaves (musical pitch ranges) to be specified from 01 to 08 with the default as 04 — and the octave setting will remain until changed. You can also say how long the note should sound from L64 (64th note) to L1 (whole note). Using this system, here is how you sound the lowest shortest and the longest highest notes in the MSX scale:

```
PLAY"L6401C":
PLAY"L108B"
```

Notes can be sharpened (raised one semitone) by adding '+' or '#' and flattened (lowered one semitone) by adding '-'. We can play a scale of D major, for example:

```
PLAY "04DEF + GAB05C#D"
```

Now — suppose we imagine the computer keyboard as a piano with (say) F as Middle C. Then set up DATA information to link each computer with its corresponding piano sound — and search for a match every time a key is depressed. Try this:

```
95 ' Play me #1
100 K$=INKEY$:IF
K$="" THEN 100
110 RESTORE 160
120 READ C$,T$:IF
C$="END" THEN 100
130 IF K$ <> C$ THEN 120
140 PLAY "L8XT$;":GOTO
100
160 DATA q,03F+,a,03G,w,
03G+
165 DATA Q,04F+,A,046,W,
046+
170 DATA s,03A,e,03B-,d,
03B
180 DATA f,04C,t,04C+,g,
04D
185 DATA z,04CDEFGAB05C
190 DATA END,END
```

Well it works, but the one thing I'm not too keen on is typing lots of DATA statements and this program looks like including too many for me. Line 180 only takes us up to D above middle C. Of course, the DATA lines have been split to make it more convenient to read on the printed page, but it's still going to look rather clumsy. The higher up the scale, the longer the 'search table' process will take, so there might be a noticeable hesitation time too.

Using this system, you can also include entries for an

```
200 '* The idle man's
210 '* electric soft piano *
220 '* Tim Markes Apr86 *
230 DIM P(200):C=0:O=30
240 K$=INKEY$:IF K$="" THEN 240
250 T=C+0:PLAY"L32N=T;"
260 Q=ASC(K$):P(Q)=T
270 P(Q)=T:C=C+1
280 IF Q <> 27 THEN 240
290 'piano keyboard test
300 PRINT "Keyboard test"
310 FOR C=0 TO 200:T=P(C)
320 IF T <> 0 THEN PLAY"L16N=T;"
330 NEXT:PRINT "Now Play!"
340 K$=INKEY$:IF K$="" THEN 340
350 Q=ASC(K$):T=P(Q)+F
360 IF Q=30 THEN F=F+1
370 IF Q=31 THEN F=F-1
380 IF P(Q) <> 0 THEN PLAY"L8N=T;"
390 GOTO 340
400 '
```

octave up with the shift key (Line 165) and there's no reason why you shouldn't include a complete musical phrase as a DATA entry for a special key (Line 185). Nevertheless, my instincts tell me there is a better way — perhaps more than one?

First let's recall another method of using PLAY to sound notes on the piano scale. We can actually use a purely numerical system to define pitch — like this:

```
PLAY"N36"[Middle C]
T=36:PLAY"N-T;":[" " ]
```

The full range of PLAY can be specified in semitones using N=1-96 (or 0=silent). It's then much easier to produce sequences of notes — like this fast chromatic scale:

```
05 ' chromatic scale
10 FOR C=1 TO 96:PLAY
"L16N=C;"
20 NEXT:GOTO 10
```

Now, using the ASCII codes of the various computer keys, we can make each key play a direct sound equivalent. The most practical method of checking ASCII codes is by program — you will remember:

```
25 ' ASCII checker
30 KDATA=INKEY$:IF
KDATA="" THEN 30
40 PRINT ASC (K$):GOTO 30
```

Just for the record and because most ASCII code information is printed as an enormous table, you might like to remember the following:

key	ASCII
0-9	48-57
A-Z	65-90
a-z	97-122

Other ASCII code values anywhere in the range 33-126 represent various symbols you see on the keyboard. Anything outside this range is reserved for fairly esoteric stuff — like the grey 'control' and function keys — and also the £ sign which has a distinctly isolated look with a value of 156!

Assuming that they keyboard is always used with 'capslock switched off as standard practice then, — here is another two line musical micro:

```
05 ' the apha music micro
10 K$=INKEY$: IF K$=""
THEN 10
20 T=ASC(K$)-
63:PLAY"N=T;":GOTO
10
```

Depressing C on the keyboard will produce piano pitch C. Other letters will produce a higher pitched note according to their position in the alphabet.

The more musical of our readers can now check if the younger members of the family know their alphabet — without

looking! Those with perfect pitch will be able to recognise words & sentences too!

If we cut down the normal ASCII code range of the keyboard by about 20% it will match the 96 note 'piano' range of the sound system — providing the £ sign is taken care of. So if you want to keep the kids happy while you are doing the cooking (or you don't trust those who say they won't touch) — try this:

```
05 ' the very musical micro
10 K$=INKEY$: IF K$="" OR
K$="£" THEN 10
20 T=.8*ASC(K$)-
6:PLAY"L16N=T;"
30 GOTO 10
```

Nearly every key now makes a musical sound — and the function keys generate several notes. This feature, plus the 'benefit' of the sound queuing system on MSX, means that you have every chance of driving your more sensitive musical friends to despair in a very short time.

'The idle man's electric soft piano program' is my final offering this month (figure 1). This fires the equivalent sound value (1-96) of the computer key into the appropriate slot in a big (ASCII sized) table — as you play a chromatic scale (semitones starting at F#) on the keyboard format of your choice.

This is a simple example of your MSX learning a skill (piano simulation) as you interact with it. When you have played in your choice of piano keyboard format, press ESCape, listen to the sound test and then PLAY the piano normally. Don't forget this is a soft piano (no presets), so you can use all the keys including SHIFTS if you like. You can also raise or lower the pitch of the whole keyboard using the up/down cursor keys (ASCII 30/31), to cover the range of the sound chip. Transposition made easy!

Once you have experimented with different 'soft' keyboard systems and decided which works best, you might prefer a simple 'preset' piano program. Rather than use the longwinded 'Play me #1' at the beginning of this article, there is a much shorter method again. But that's another story, of course . . . unless our readers can work it out?

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# ARMLESS FUN

*Laugh? We nearly cried after reading some of the entries in last month's competition*

We never got round to counting the entries for last issue's Robot Arm competition, but it must have been well over a thousand. Looking back on it, we must have had close to a thousand variations on 'Where does a general keep his armies? In his sleeves'. Other favourites with you, though not necessarily with us, were versions of 'What do you call a man with no arms? 'Armless'.

Many of you entered cartoons and comic poems as well as jokes, and one of these is our winner, Ian Leadbetter. Well done, Ian, your Spectravideo Robot Arm will be with you shortly. We would have liked to use some more of the cartoons sent in, but for various technical reasons many were unsuitable for reproduction. No such problem with the jokes, however, and here's a representative sample . . .

*What would you do if you broke your arm in two places?  
I would never go to those places again.* (D Eroglu, Abingdon)

*Why is the Spectravideo Robot arm like a quintet of Chinese lumberjacks?*

*Because it is yellow and has five axes.* (C Thompson, Bedale)

*How do you get a one-armed bandit out of a tree?  
Wave to him and he'll wave back.* (Lewis McMillan, Lancashire)

*What did the big hand of the clock say to the little hand?  
I'll be back in an hour.* (Robin Stephens, Farnham)

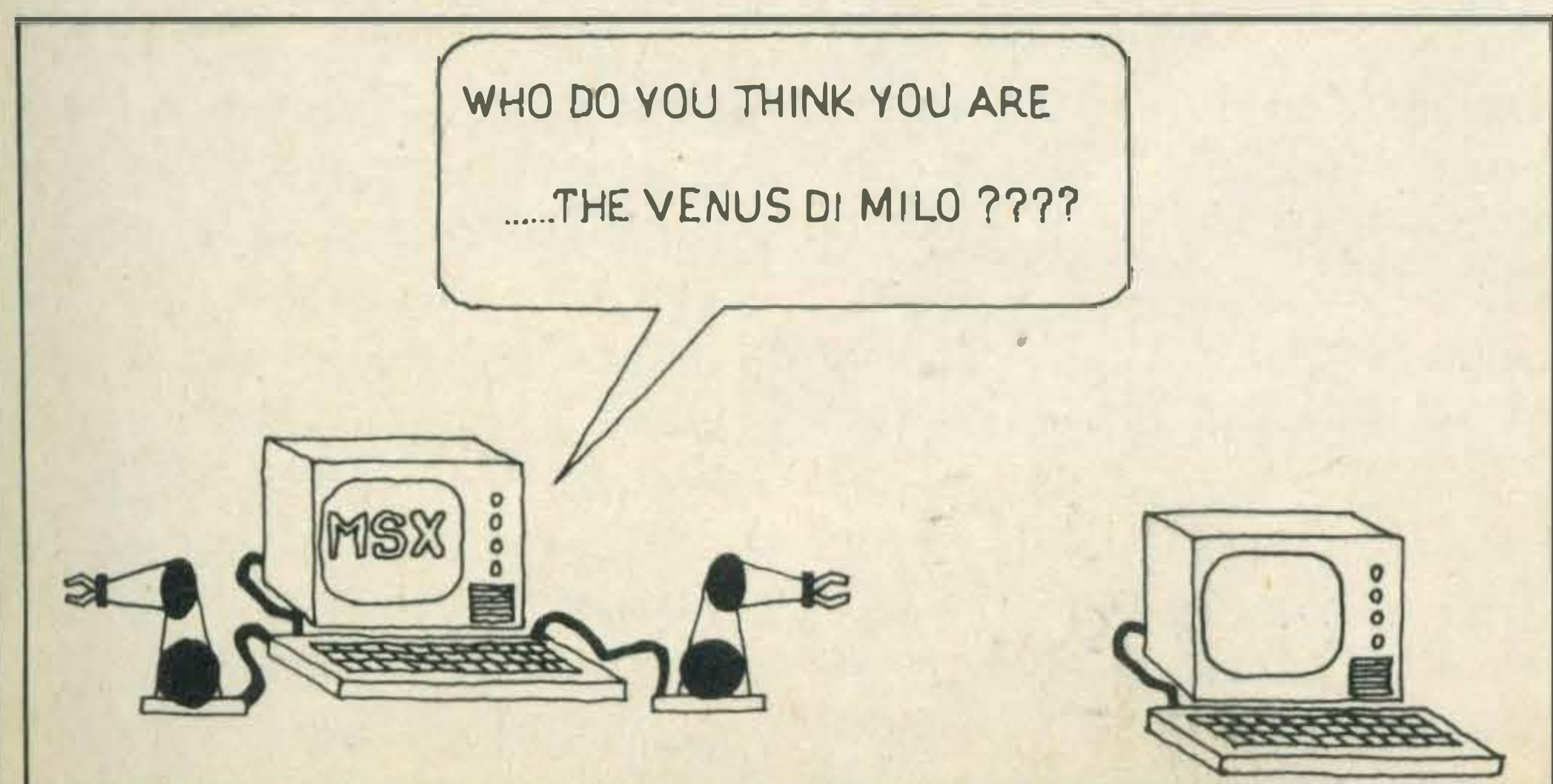
*Have you heard the latest news about the international arms race?  
No!  
It's going to be in the next Olympics.* (Richard Godfrey, Abingdon)

*Why isn't an arm 12 inches long?  
Because if it was it would be a foot!* (Simon Stallard, Melksham)

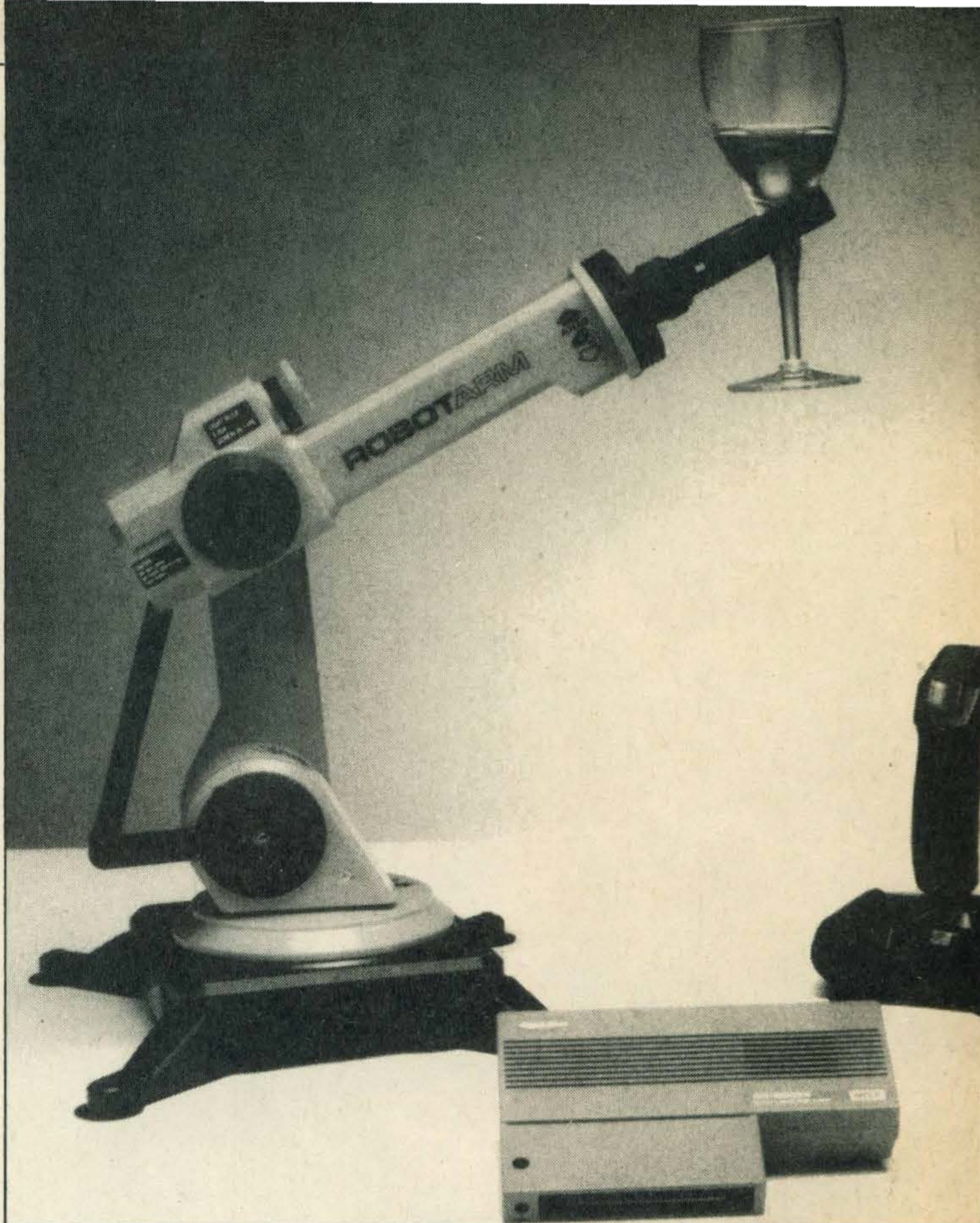
*I was driving along the motorway when I saw a hitchiker with three eyes, one arm and one leg. I stopped and said 'Eye, eye, eye you look 'armless, hopin'.* (L Urwin, Camblesforth)

*One man talking to another, 'I would give my right arm to be ambidextrous'.* (Paul Rayson, Porthcawl)

*What do you do if you make a Robot arm with a part missing?  
Give it the elbow.* (A Faherty, South Ruislip)



*This is the winning entry from Ian Leadbetter*



*Where do armssit?  
In arm-chairs.* (Richard Godfray, Abingdon)

*Two pretty girls are walking down the prom at Blackpool arm in arm, when a beach photographer steps in front of them. 'Stand still Mary he's going to focus'.  
'What, both of us?'* (S Lipiec, Stoke-On-Trent)

*How do octopus's go down the aisle?  
Arm in arm in arm in arm in arm.* (G Straugheir, Cromarty)

*Did you hear about the man with no arms who tried to swim the English Channel?  
He had to give up half way across when his ears got cramp.* (P Davies, Camberley)

*Doctor, doctor, I can't feel my legs!  
I know, I have chopped off your arms.* (Karl Nicholls, Penzance)

*Have you ever been in a play before?  
Well, I've had my arm in a cast.* (Robert Judd, Westerham)

*In the final stages of the London Marathon an American and a Russian are leading by miles. With about only 50 yards to go a van comes tearing round a corner and hits both runners, spreading the pair all over the road, limbs everywhere.*

*However, the incredible will power of the American lives on in his left arm which is in the road. The arm starts dragging itself towards the winning line.*

*The Russian's right arm which is*



*Despite our pleas to keep jokes and captions legal, decent, honest and truthful a few entries were a little risqué and we couldn't resist this entry from A Vissers in the Netherlands.*

*in the gutter sees this and it also starts dragging itself towards the line.*

*Meanwhile a tourist in London asks one of the spectators at the front of the crowd, 'Is this the London Marathon?' and the spectator replies, 'No, it's the superpowers' arms race'.* (M Blades, Leeds)

*Heard about the man who cut off his left arm?  
He wanted to sail around the world single-handed!* (David Tong, Pewsey)

*How to get an arm legless:  
FU4, BA1, WA6, F0* (Oliver Dagois, Chelsea)



## Adventure Quest

Stuck in the goblin's dungeon? Lost in a maze of twisty passages? Mike Gerrard, arch adventurer, is here to offer help and advice

**I**t's nice to see how the readers' letters are beginning to come in regularly now, and that adventuring is a growing interest among MSX users. Most people start off with arcade games, because that's what they know about, and then eventually try an adventure... and another, and another. And then you have one more convert to the bashing of balrogs and burning of the midnight oil... so if they ever put up the midnight oil prices we're all in trouble.

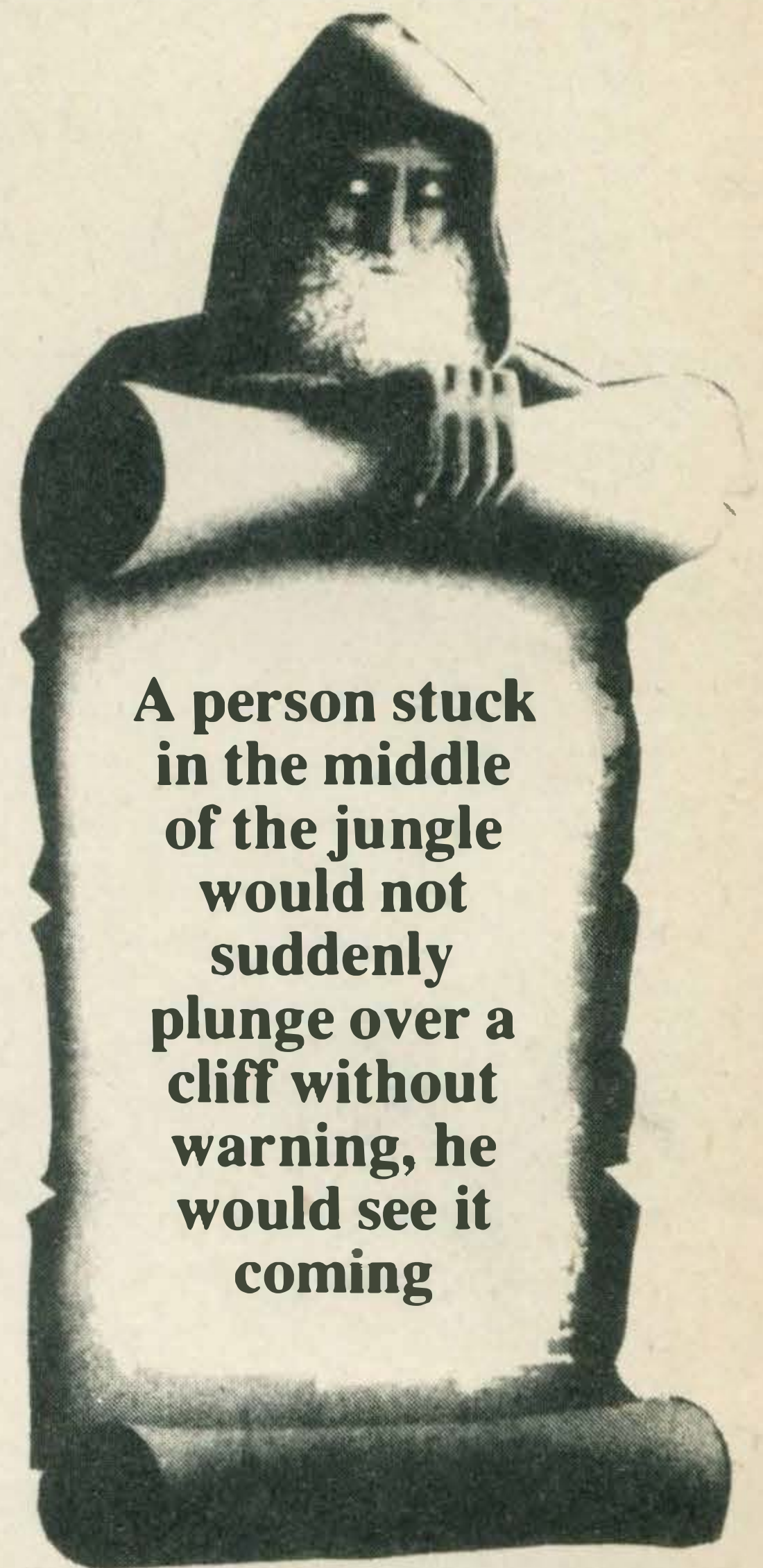
Someone who obviously has been burning quite a bit of midnight oil is R. Fitzgerald of Bearsted, Kent, who's not content with being stuck in *Emerald Isle* but has also taken on one of Level 9's tougher titles, *Adventure Quest*. 'I can't find what to do with a statue's arm, or a museum.' Well, as far as the arm goes: TI LLUP. As for the museum: EREH LODI EHT PORD.

In *Adventure Quest*, there are several problems, such as getting killed by an octopus (GAB EHT YRRAC); can't reach a bell in a church (YRENECS TSUJ SI TI SA TI ERONGI); unable to reach a body on a gallows (YRENECS GNINRAW FO TIB A) and finally having breathing difficulty—I'll have to answer this one forwards rather than backwards, so if you don't wish to know about it skip to the start of the next paragraph. The lungfish changes what you can breathe, between air and water, meaning that if you carry it when in air you react as if you're in water and drown, and carrying it in water enables you to breathe as if in air.

Also stuck in *Emerald Isle* is Kevin Harris, Pelton Fell, Co Durham. Pelton Fell? I didn't even know that he drank! Anyway, in exchange for a helping hand Kevin offers some clues to other readers. The silver coin? TEKCIT NIART A ROF ESU. Trouble with a spider? EULG EHT TI EVIG. What to do with a wallet? NOITATS NI ECILOP OT TI DNAH. To cross the river? TAHTESUDNAREDDALEHT DNETXE. Finally, Kevin says, just try typing in X or SES to see what happens. Kevin's prob-

lems include how to get the carbide granules (NIOC EZNORBHTIWYUB); and how to read the inscription in the throne room (SNEL A DEEN UOY).

Quite a few readers have written in asking for the clue sheet on *Zakil Wood*, so re-



**A person stuck in the middle of the jungle would not suddenly plunge over a cliff without warning, he would see it coming**

member if you want a copy of that then send sae to me c/o *MSX Computing*. Other readers have simply written in asking about the infernal Path of Eternal Sleep, which holds up progress very close to the start of the game. Firstly, before setting off down that path you should cross the river and get a few things from over there, then when on the Path of Eternal Sleep: TSAE TSEW HTUOS TSAE HTRON OG DNA SEVAEL TEG.

With a lack of new releases, one solution that's available to avid adventurers is to write your own game. While you should admittedly find your own adventure fairly easy to solve, this isn't necessarily always the case. When writing an adventure with my brother recently, one of us would invariably get stuck when checking for bugs and have to phone the other one asking for help in getting past certain problems. And that's not counting the bugs that crept in and occasionally put us into dead-ends from which

there was no escape.

If several people write their own adventures, though, that should increase the numbers available to everyone, and there's always the possibility that a software house might be interested in publishing good ones. While there's no easy adventure writing utility such as *The Quill* available to MSX user, adventure writing isn't as difficult as arcade programming, and certainly adventures in BASIC are perfectly acceptable for the speed of their responses if efficiently programmed. A few months ago in the February/March issue *MSX Computing* reviewed *MSX Adventure Programming* by Steve Lucas (£7.95). It is a book aimed specifically at writing adventures on your MSX machine, and there are one or two books around that are not machine-specific, which should also obviously be useful, and even books about adventure programming on other machines will show you the basic structure of adventure programs and should enable you to produce similar routines if you know your MSX BASIC well enough.

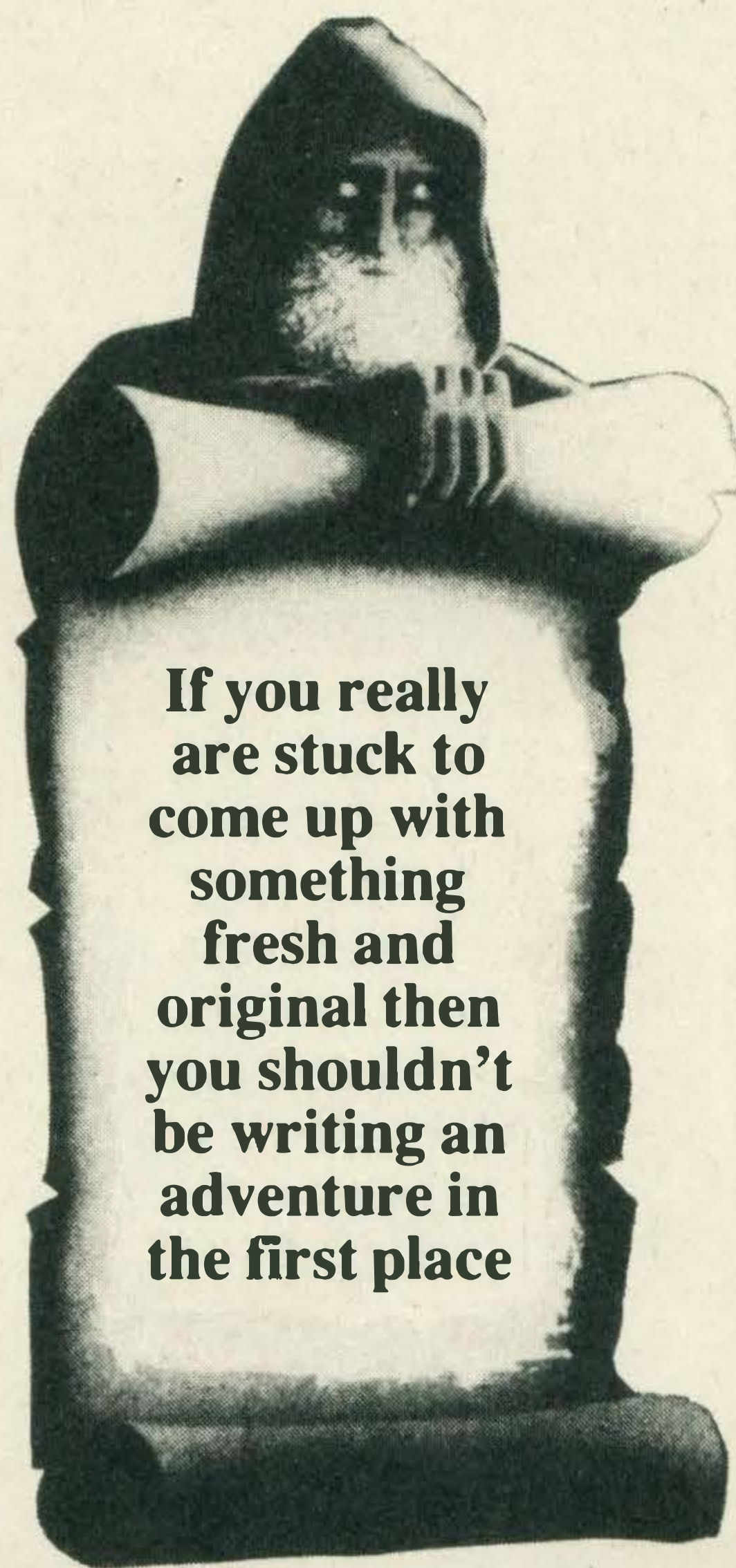
What many people fall down on, though, is the lack of ideas. Where to find that idea for an adventure? Haven't all the original ones been used up? Well, certainly not as far as MSX adventures are concerned! If you really are stuck to come up with something fresh and original, then you probably shouldn't be trying to write an adventure in the first place. If you can't invent a plot, how on earth are you going to invent ingenious new problems for players to solve?

One possibility for everyone, however, is to adapt a book or story into an adventure game, as was done with *The Hobbit*, *Lord of the Rings* and several dozen others. Here the problems you have to be concerned with are copyright ones. If you're just doing something for your own amusement, then you could take any book and try to turn it into a game, but if you intend publishing something then take care — and publishing could be interpreted as merely giving one copy to a friend. The copyright in a story and the characters in that story

belong to the author, usually, or sometimes the publishers, and you would have to seek their permission to make use of the material — permission which probably won't be granted freely.

Copyright generally exists in a work until 50 years after an author's death (though there are exceptions to this), so the safest thing is to look at the works of such adventurous (and long-dead!) writers as Jules Verne, Conan Doyle and Rider Haggard. See if any of their stories inspire you to produce an adventure plot.

You might be interested to know that the characters of Sherlock Holmes and Dr Watson are no longer protected by copyright, which was why Melbourne House was able to produce its *Sherlock* adventure on other computers, an adventure which wasn't based on any one particular Conan Doyle book. There are dozens and dozens of Sherlock Holmes novels and short stories around, and they must contain lots of adventure material, or you could even create a new



story — give Sherlock a modern-day mystery to solve, or even have him up to no good at all, there would be no copyright problems on this.

If you're going to try to produce your own original story-

line, do at least try to make it original. I've seen endless adventures set in the mystic lands of Thoron, involving heroes in search of the magic ring of Vandor, with which they can vanquish the evil Belgam. I could write an adventure scenario like that in about 5 minutes, and that includes 4 minutes of thinking up silly names that haven't been used before, so don't be lazy and don't attempt something like that unless you really have an original and different idea to work on.

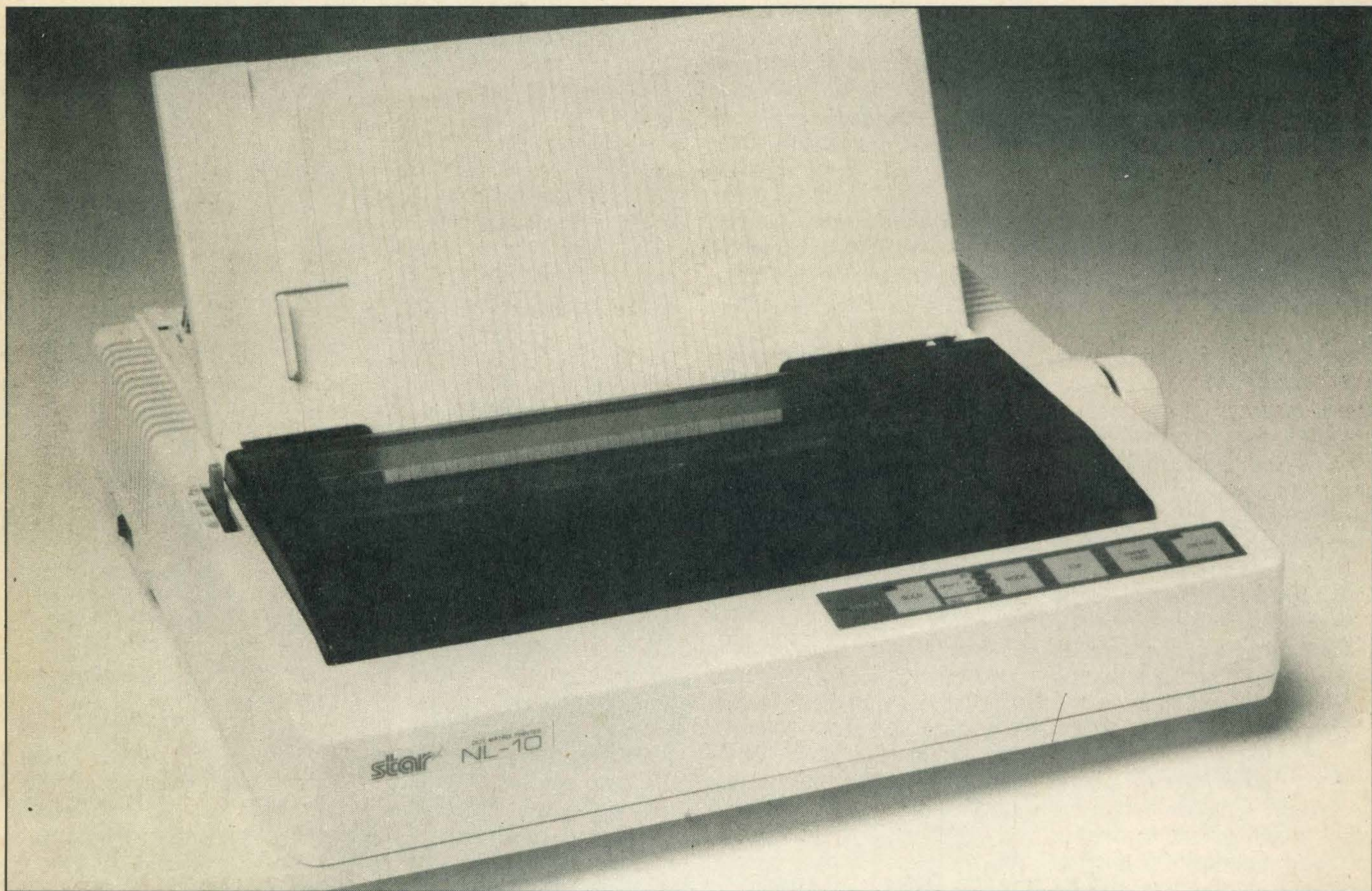
However you get your idea, don't overlook the planning you need to make before you start the actual programming. I know some adventure writers who sit down at the keyboard and write the story and set the problems as they go along writing the program, but for most people some preparation work will save a lot of effort later on. Work out your storyline thoroughly, and know what the problems are going to be and where they are going to occur. Start to prepare a map for your adventure, showing how the locations link together, where the problems are and where the objects are going to be found at the start of the game. Have a rough idea of what each location is going to be, to enable you to identify it. On the map something simple like 'Dark wood' will suffice, as you can extend that when you're writing the program and typing in the full location descriptions so that it becomes 'You are in a dark wood where the branches of trees hang down and touch your face as you pass.' And so on.

I do see lots of adventures, both published and unpublished, and two things in particular are noticeable about the amateur efforts. One is the humour in them, or rather the excuse for humour. This is generally at schoolboy level, so if you can't be funny in a fresh and original manner then it's probably better not to attempt it. The other thing is the way in which amateur adventure writers like to fill their game with sudden-death routines. You know the kind of thing, you're in one location in the middle of a jungle, you're told you can go in all directions, so you head north only to discover 'Oh dear, you



appear to have fallen over a 5,000 foot cliff which you didn't know was there. You are dead.' Try to maintain some grip on reality, and keep unexpected deaths like that to the bare minimum. A person in the middle of a jungle would not suddenly plunge over a cliff without warning, he would see it coming. You should always give people a warning, even if it's only slight, of trouble ahead. You could, for instance, say 'To the north the path appears to be rough and to crumble away.' If the player persists in going north then he or she has at least been warned that the path's a bit suspect, but don't have the player open a door only to fall into a pit of flames which was somehow not noticeable.

If you write your own adventure, then by all means send it in to me to have a look at — who knows, maybe a few other readers might be interested in buying it, if it's any good. Next issue should have something to enable you to see what you're up against. Firstly *Castle Blackstar* from CDS is almost finished, and this is already one of my favourites in its Spectrum and Dragon versions, so that's something to look forward to. Even better, the new Level 9 release should be out, and that's *The Price of Magik*, a follow-up to *Red Moon*, which was voted adventure of the year for 1985 in several magazines. Will the sequel be the MSX adventure of 1986, a year which has already seen *The Worm in Paradise*? Well there's only one place to look to find out about it. See you here.



# STAR PRIZE

*Look out! There's a bug about. Find him and you could win this dot matrix printer*

Here's your chance to grab £300 worth of one of the most durable and dependable dot matrix printers around — the Star NL-10.

For pure quality of manufacture and design the NL-10 takes a lot of beating.

The sleekly-designed NL-10 runs at 120cps in draft mode and offers 30cps in Near Letter Quality.

Other features include a 5K

buffer, adjustable tractor feed and an automatic single sheet paper feeder for running off all your letters. There's also an easy loading ribbon cartridge that simply drops into place — no more inky fingers!

To win the Star Micronics printer you are going to have to read *MSX Computing*... very carefully. Hidden somewhere among the pages are six de-

vious little program bugs, each with a number. If you find them all you will have a list of numbers which share a special characteristic. We want you to tell us what it is that the numbers have in common, and the number of the next one in the ascending series they form.

Entries on the back of a POSTCARD please, remembering to include your own name and address.

The winner will be the sender of the first correct entry to be picked out of the box after the closing date.

## RULES

1. The judges' decision is final and no correspondence will be entered into.
2. No employees of Haymarket Publishing or Star Micronics or their families may enter.
3. All entries must reach us by the closing date of Monday 21st July 1986.
4. Entries must be addressed to:  
Hardware Competition  
MSX Computing  
Haymarket Publishing Ltd  
38-42 Hampton Road  
Teddington  
Middlesex TW11 0JE



*It's prize time again so try your luck — you could win one of the 12 Hisoft utility packages we're giving away*

Our second competition this month gives you the chance to win one of 12 software packages. Language and utility specialists Hisoft has donated six each of its highly regarded *Devpac MSX* and *Pascal MSX* packages, normally retailing at £19.95 and £29.95 respectively, to introduce some alternative programming methods to readers who are starting to find that Basic cramps their style.

*DevpacMSX* is a fully relocatable Z80 assembler/editor suitable for developing the tightest and fastest pure machine code programs. It also has the unusual ability to 'include' source files from cassette, so that the object size is not restricted by the need to have the whole source in memory. *PascalMSX* is a true compiler of the well-known structured programming language producing native Z80 object code. A source code screen editor is included. These products reflect two different approaches to moving away from Basic, and you may find our article on advanced programming tools (starting on page 31) helpful when deciding which prize to try for.

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# PICK OF THE PROGRAMS

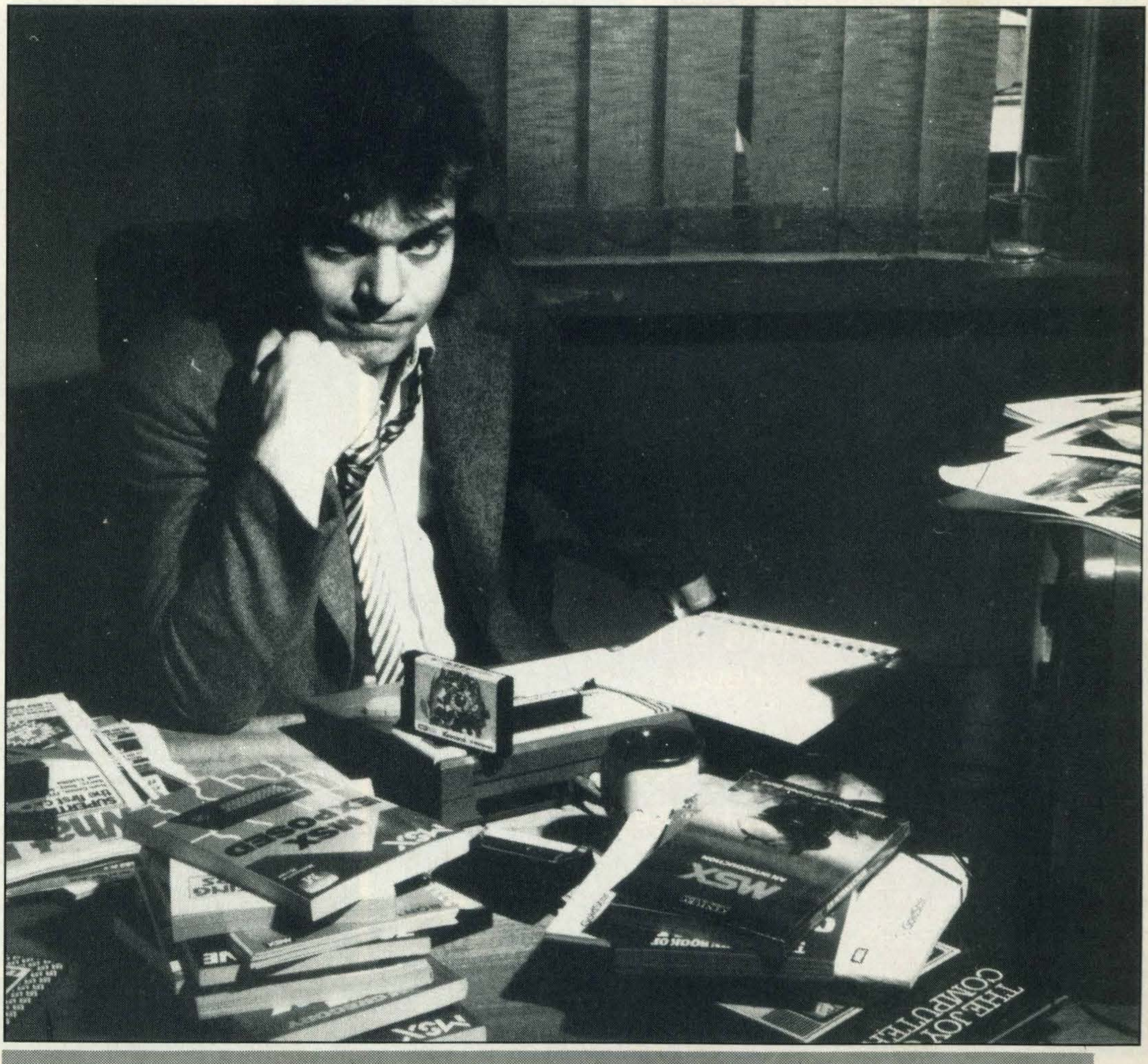
## WHAT YOU HAVE TO DO!

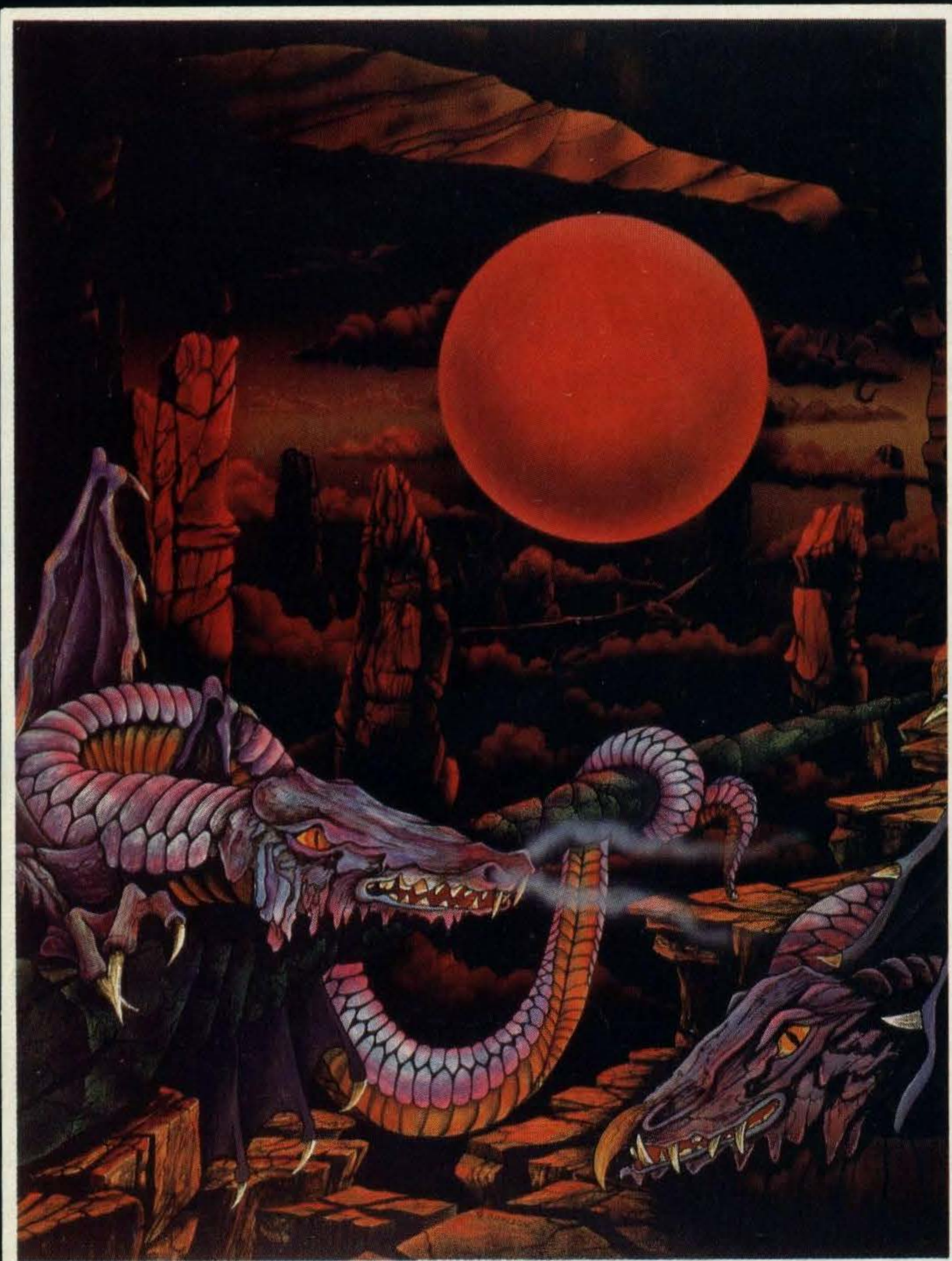
**This man is very unhappy. Things were bad enough when his only problem was a non-functioning program, but now he's got his tie stuck in his desk drawer as well. Not only that, but he has cluttered up his desk space with so many MSX books and magazines that he has now lost the old envelope on which he originally wrote the program. So what if cleanliness is next to Godliness: in his case, it's next to impossible.**

**How many books or magazines are there**

**scattered around this poor individual's working area? When you think you know the answer, write the total number on the back of a POSTCARD or SEALED envelope along with your own name and address, stating whether you would prefer a copy of *Pascal MSX* or *Devpac MSX* if you win.**

**The winners will be the senders of the first six correct entries requesting each package to be picked out of the hat after the closing date, which is Monday 21st July 1986. Best of luck!**





# Red Moon

Voted  
"BEST ADVENTURE OF THE YEAR"

Commodore Computing International  
Amstrad Computer User  
Computer and Video Games

Voted  
"BEST GRAPHICAL ADVENTURE 1985"

Zzap! 64  
Amtix  
Crash

£6.95  
Cassette

## The Price of Magik

NOW AVAILABLE

Rise from Sorcerer's Apprentice  
to Supreme Wizard

Many Powerful Spells

Independent Creatures

200 + locations, all illustrated  
(not BBC)

Sophisticated word-recognition and  
fast response.

NEW

£9.95  
Cassette



**I**t's easy to imagine that the Dutch have it all their own way as far as serious business software for MSX goes.

Certainly, companies like Aackosoft maintain a high profile in Britain as well as in their home market. But Computermates, Britain's main contender in the field has just concluded a deal with Philips, Holland's main consumer electronics company, to supply an impressive suite of business programs which will be bundled in as standard with Philips MSX 2 machines.

The package goes under the title of *Philips Home Office*. It consists of enhanced versions of the word processor, card index and spreadsheet programs that have been under steady development since their creation as MSX 1 programs. The *Home Office* package will be supplied on disk to exploit the MSX 2 specification built-in disk drive, but users of other MSX brands will be able to buy substantially the same products on cartridge.

Although the new versions of the cartridge software incorporate the features necessary to get them the best from MSX 2 — primarily support for 80-column displays and the ability to use paged RAM past the old 64K limit — the programs are still completely usable on MSX 1 systems. When used on the older machines the programs default to a 40 column display.

The computer with which *Home Office* will be bundled is the Philips VG-8235, which has 128K of video RAM and 128K of user RAM as standard. Going straight into the word processor from the opening menu this configuration gives you 8158 characters free. Compared to the 15997 characters free that the same cartridge gives you when plugged into an MSX 1 machine, it becomes a serious writing tool instead of something you just use for letters.

With the addition of a supplementary 256K RAM pack the capacity is increased to over 300K text space.

The traditional limit of 64K imposed on an eight-bit computer has been by-passed by bank-switching. Philips has improved on the memory management techniques used by other MSX 2 manufacturers, supplementing the virtual slot switching technique with a 16K paging function. The new system is much faster, but so far it is used by very little commercial

# EXPORT STRENGTH

*Computermates' new software refreshes the countries other companies can't reach*



**Generic MSX 2 versions of the software will be available**

software apart from the Computermates products.

*MSX Text*, as the generic version of the Home Office word processor is called, now includes an updated version of the card index program *Cards*. This enables standard letters to take in information from the cards so that automatic mailshots can be printed.

The spreadsheet is again similar to the earlier Computermates package. If anything this is a program which benefits even more from MSX 2's 80-column display, as much more of the worksheet is now visible.

The database module of *Text*, previously known as *Cards*, has also been upgraded. Unlike the other programs in the *Home Office* suite, it works only in 40-column mode, but the user can now use both sides of each imaginary card for information storage. The amount of data which can

be stored under each heading is therefore roughly doubled.

Other new features include a string search, enabling you to extract the right card even if you have forgotten its heading, and the ability to search for cards according to arithmetical criteria. If you classify your customers according to the amount of money they spent with you last year, you can now send a mailshot to those who spent more than £1000, for example.

A side benefit is that only one disk drive is required for most operations — and this is how MSX 2 machines are usually supplied.

With cartridge based versions of the software, the user has to worry about only one kind of disk in one disk drive, and even with the disk based versions there is no need to keep the program disk on line while the program is used —

you just load the program, exchange the program disk for the data disk, and then proceed.

The programs share a similar command structure, making it easy to switch from one application to another without having to get used to a completely different design.

The main displays for the card index, spreadsheet and word processor concentrate on giving an uncluttered view of the data you are working with. Very little else is shown on the screen until you press ESC, when a little window pops up into the middle of the screen showing you the commands available. Some of the menu selections lead to further sub-menus. Once you have made a selection the window disappears and you are back to the normal display.

It's a sad fact for we Brits that MSX is generally much more dominant abroad than in the UK, and this poses problems for any software house wanting to produce MSX programs. The export market is vital to a healthy return on the research and development investment, but you can't expect to match, for instance, a French software house unless you produce a French language product.

Computermates is therefore obliged to produce multilingual software. The *Home Office* equivalent programs are available in English, French, German, Dutch, Spanish and Italian. Portuguese and Arabic are under development.

Geoffrey Pattison describes the logistical problems of making software in so many languages as the trickiest part of the operation. Eight languages means eight lots of instruction manuals, and eight different development schedules. Since the program code has to be changed quite substantially in some cases, there is also the problem of ensuring that bugs do not creep in.

Actually converting a program to use a different language is said to be the easy part.

Foreign readers will have to make their own assessments: our own foreign language ability is not good enough to comment on the quality of the translations. But we are now using these Computermates products ourselves for various office tasks, and so far they live up to expectations.

The two cartridges, *MSX Text* (including *Cards*) and *MSX Spreadsheet*, are priced at £50 each in the UK.

# BEYOND BASIC

(11)

*If you want to unleash the full power of MSX, you have to leave Basic behind. What else is there?*

The one programming language most of you are familiar with is MSX Basic. This puts you among the better-off Basic users, as the MSX Basic interpreter is one of the most comprehensive variations on the Microsoft Basic theme, and familiarity with this language means that you can move with great ease on to any computer from a steam-powered Tandy TRS-80 Model 1 to a shiny new IBM PC AT, programming confidently as you go.

Basic is very good in many ways. The raw principles of programming in Basic seem to be very easily grasped by

complete newcomers to computing, and the core of the language can easily be extended to encompass the use of new advances in hardware design.

When your grey-haired (in computer terms) editor first started using computers no version of Basic had commands like SOUND, PLAY, DRAW, CIRCLE, LINE etc. Computers by and large just didn't have sound chips or any sort of graphics capability. Many didn't even support the use of lower-case letters on the console, because instead of a TV set or glass-screen terminal

you used a teletype to communicate with the system.

Basic may be highly flexible and easy to approach, but there is a price to pay for all these virtues and Basic is ultimately not very suitable for writing programs where speed or modest memory requirements are important.

Those of you who have written games programs on MSX machines will know how many features such as sprite collision detection and joystick scanning are provided to make life easier. Even so, the more features you add the slower the responses get until eventually the game is too slow to be worth playing. Either that or you end up with the dreaded 'out of memory' message.

## Basic is just one possible personality

Most programmers eventually outgrow the speed and memory limitations of Basic interpreters and find themselves willing to trade off ease of use for more power. MSX Basic is just one possible 'personality' of your computer.

You already know that by loading a games program or word processor the apparent nature of the machine changes completely. What sometimes comes as a bit of a surprise is the realisation that the Basic interpreter which seems so fundamental to the computer is in effect just another program which the designers could have supplied on a cartridge just like *Space Invaders*. They decided instead to make it an internal

fitment but this was only for convenience. By loading and using a different program in its place, you can program your MSX machine in a completely different way.

When considering a move away from MSX Basic, almost everyone first thinks of machine code. This is the other end of the scale in the compromise between power and ease of use.

Bearing no resemblance to any human language, a machine code program consists of the native instruction set of the Intel Z80A microprocessor at the heart of the computer. Your friendly Basic interpreter, as its name suggests, translates all your easily-understood commands into machine code a line at a time. This translation process takes a long time in computer terms, which is why Basic programs are so slow. Memory is used up by the need to hold in memory all the Basic keywords used in the program.

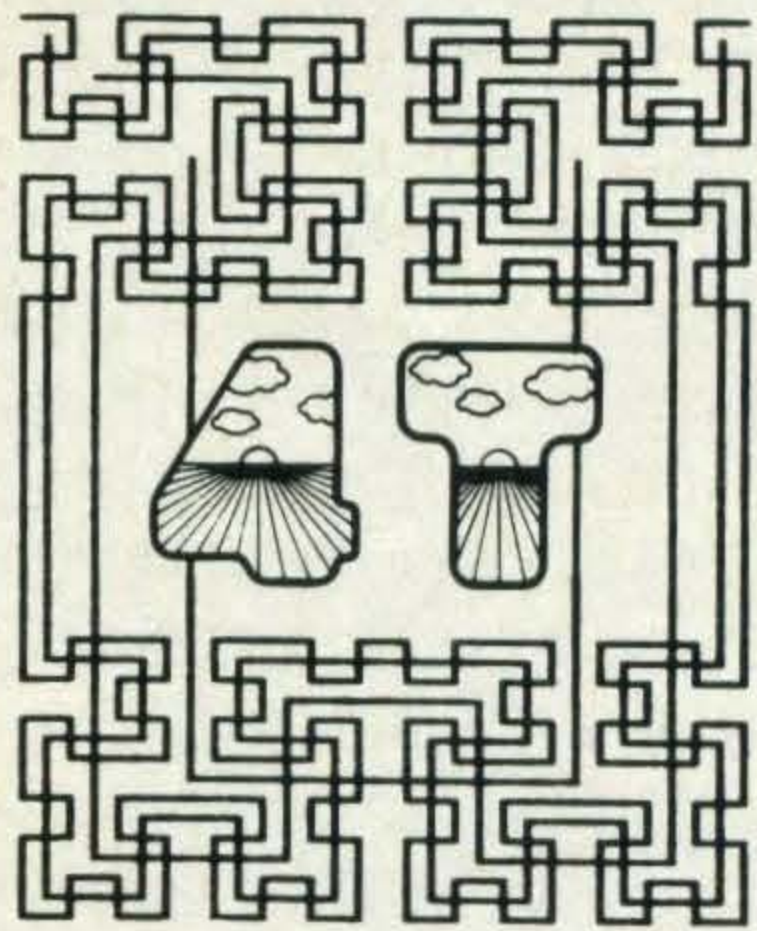
Writing directly in machine code solves these problems but introduces a whole lot more, including a good chance of insanity. To enter and run machine code programs directly you need a utility program called a *machine code monitor*.

You have to know the Z80 processor and the architecture of the machine inside out to get anywhere, and you are always working with the possibility that some miscalculated instruction will crash the machine, losing your work. Definitely for advanced students only.

Programming directly in machine code is the most extreme case of *low-level* programming, so called because you are working right down at the fundamentals of the computer. A much better proposition for a normal human being is the use of *assembly language*.

This is essentially a sensible and comprehensible way of producing machine code, and indeed the two are often confused. However, whereas direct machine code programming involves you in entering strange numbers into memory locations, assembly language humanises the process. Each of the Z80A's instructions is given a descriptive name, such as ADD, which is self-explanatory, RTS which ReTurns from Subroutine, or BNE which compares two numbers and Branches to a different part of the program if they are Not Equal.

HISOFT



PASCAL

MSX

DEV PAC

To write assembly language programs you need an assembler. *Devpac* consists of two modules, an assembler (GEN) and a disassembler/debugging tool (MON).

The assembler includes some unusual features. It is fully relocatable in memory, and can therefore be used to assemble object code into any desired location without danger of overwriting the assembler itself.

*Pascal MSX* is a compact Pascal compiler conforming closely to Standard Pascal, despite its compact size. Although it is documented to the standard an experienced Pascal programmer will require, a user with experience of Basic only would be well advised to read an introductory text on the subject.



In assembly language, you type in an *assembly listing*, using an editor program editing any mistakes and most importantly saving it to tape or disk before you get anywhere near running the program and possibly crashing the machine. The listing is the *source code* for your program and it does not itself run on the computer. To convert all the user-friendly mnemonics into machine friendly binary code (that's a stream of stuff like 10101011 11010011 10011001) you run the listing through another utility program called an *assembler*. The output from the assembler is the *object code*, and this is what runs on the computer.

In Basic the source code stays in the computer, hogging memory like crazy, and each line of the listing is interpreted into object code in turn, each time you run the program.

In assembly language, conversion into object code is a once and for all process. If you want to modify your program, you edit the source code, reassemble it into a new version of the object code and run that. This is obviously more time-consuming during the software development stage, but it makes the finished program much more compact and faster-running.

Low-level programming is an immensely time-consuming process for another reason — you have to go into such a lot of detail telling the computer to do apparently simple things.

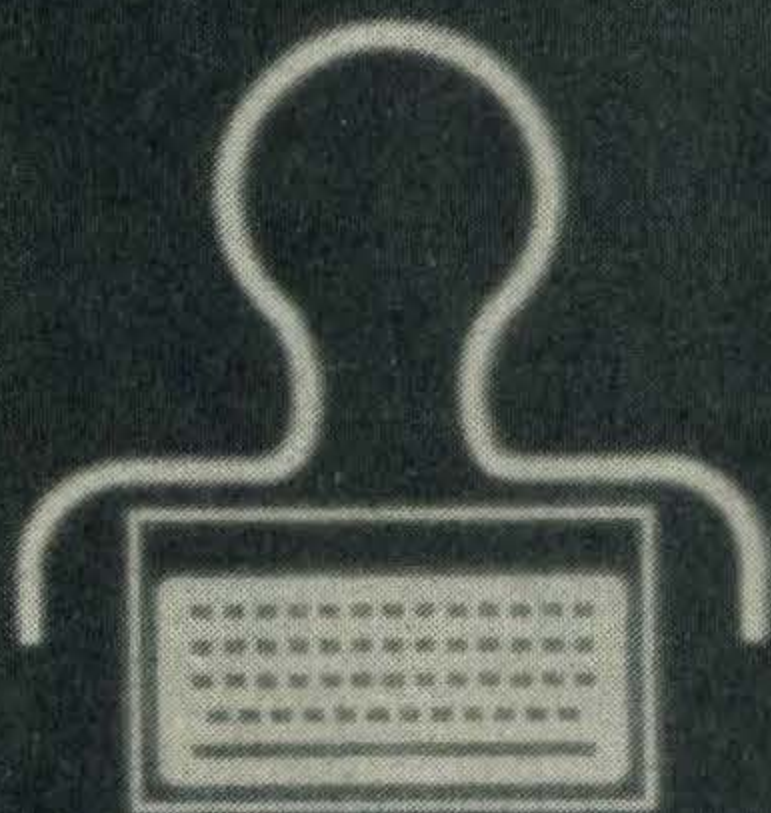
Scanning the keyboard for a particular keypress is a trivial task in Basic, but it takes many assembly language instructions. Experienced programmers build up their own libraries of commonly-used routines, but even so, for writing very large programs assembly language is often uneconomic because of the lengthy development time.

What is needed is a high level language full of powerful commands and statements, like MSX Basic, but which allows programs to be converted into fast, compact, native Z80 object code, like assembly language.

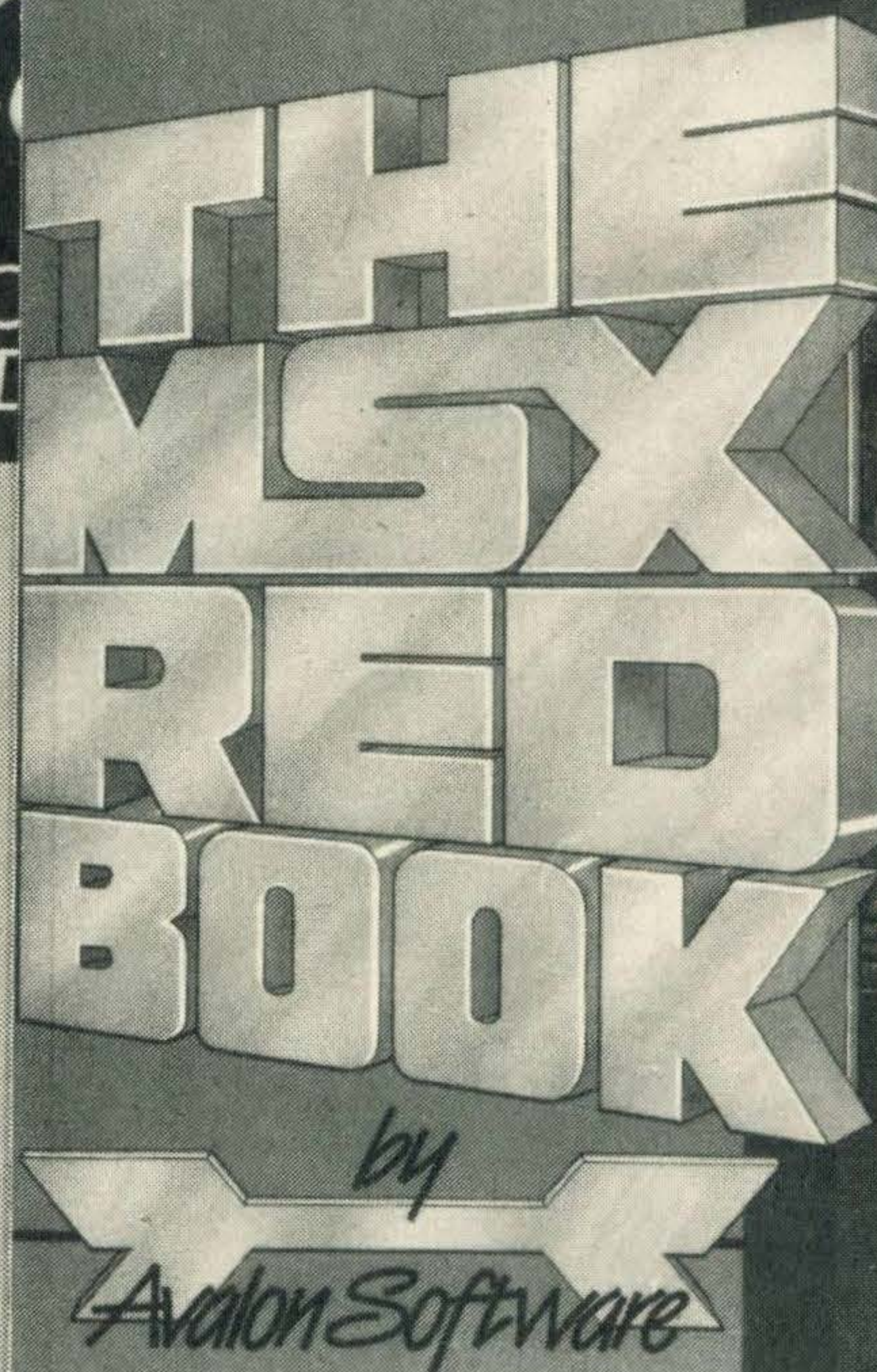
This apparently miraculous trick is performed by a *compiler*. High-level language compilers are available for all computers, but frequently require the use of disk drives.

This is because an eight-bit computer like an MSX machine

# Z80 MACHINE CODE FOR HUMANS



ALAN TOC  
AND DAVID



To program an MSX machine successfully in machine code, you need to know more about the insides of the machine than the manual tells you. *The MSX Red Book* (£8.95, Kuma) is a workmanlike guide to the hardware and system software held in ROM.

*Z80 Machine Code for Humans* (£7.95, Granada) is an excellent introduction to the language used by the MSX central processor. Unlike some similar books it actually tells you how to do various things in Z80 assembler — too often these books just cover the instruction set and assume you can pick up the techniques by yourself!

usually has a maximum of 64K of RAM, and it is difficult to get the lengthy source code, the compiler program and the object code all into memory at the same time. Typically the source code is created as a text file using a word processor or text editor, and saved on disk. The compiler is then loaded into memory, and instructed to read in the source code a chunk at a time and create a new disk file for object code. The compiler then erases itself and the programmer loads and runs the object code.

The quality of the object code produced by a compiler is

generally less high than that produced by careful hand coding. The size of the finished program will be greater, and the speed of execution will probably be less impressive. However, you do end up with a 100 per cent machine code program, which is bound to go a lot faster than it would in interpreted Basic.

The development times needed for each method of writing a program tend to vary inversely with the time taken for the finished program to do its stuff, with interpreted Basic programs being quick and easy to debug, and machine code

taking the longest time.

Another advantage of writing in a compiled language is that it makes programs easily portable from one kind of computer to another. A program written in Z80 machine code will not work on an Intel 8086/8088 computer such as the IBM PC. But a language like Pascal is available for just about every computer, and it will be possible to recompile your original source code on a different machine with only minor modifications to make it run properly.

In an ideal world, everyone would have an interpreter and a compiler which were completely compatible with each other. You could then get your program working in easy-to-use interpreted MSX Basic, then save it and run the source code through the compiler for a go-faster version. Unfortunately, the more complicated a language gets the less suitable it is for compilation. An MSX Basic compiler would be an enormous, unwieldy piece of software.

Before buying anything, think carefully about what kind of programs you intend to write and why you want to go beyond Basic. If you want to produce a fast-moving arcade game, you are going to need an assembler/editor package to produce hand-crafted code. Machine-specific features such as graphics and sound are hardly ever supported by compilers, and those are exactly the features you will be most interested in.

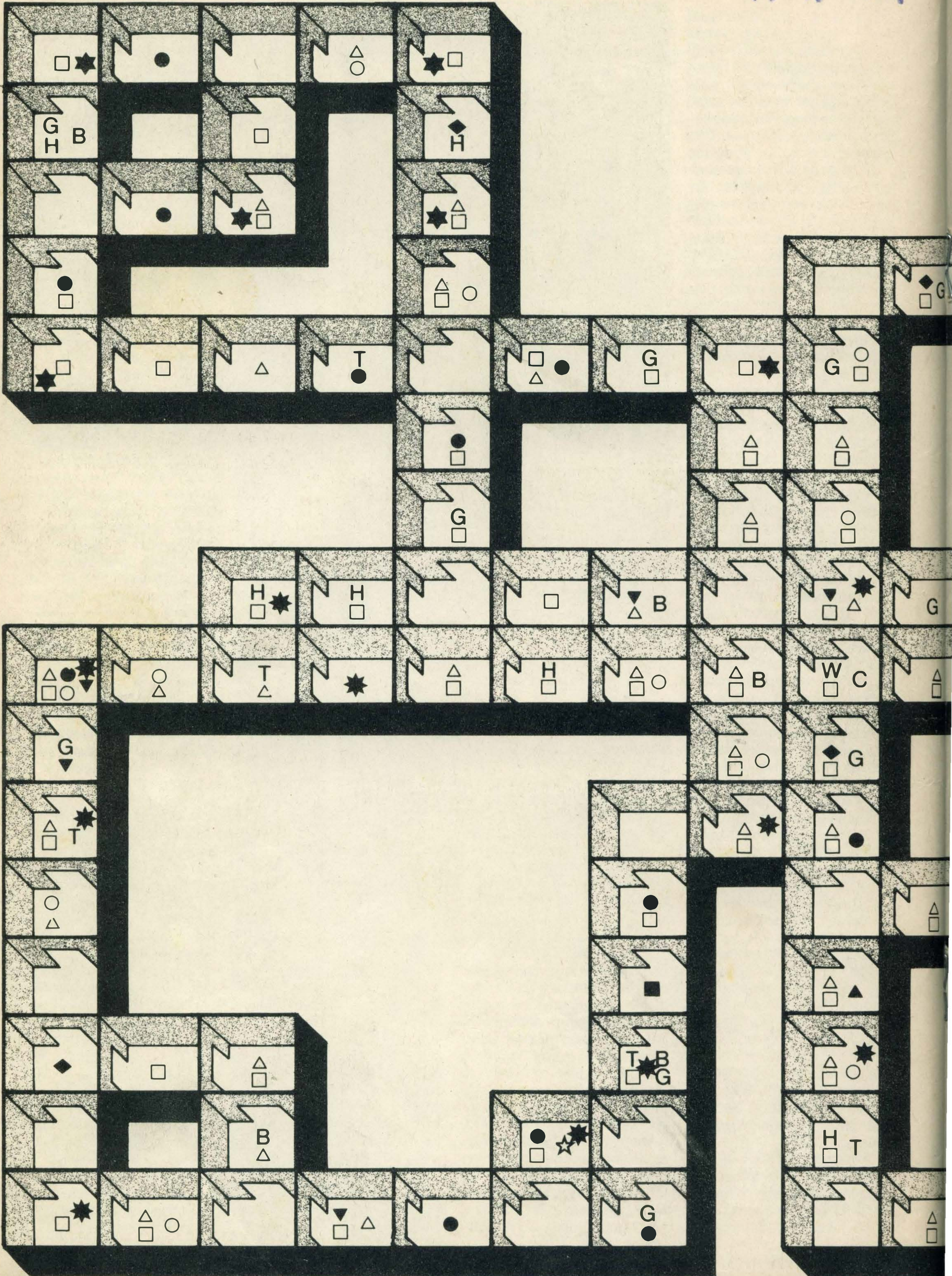
With the MSX machine's excellent hardware support for sound and graphics it is possible to get very good results using a program written largely in Basic with relatively short machine-code subroutines called from Basic to speed up the bottlenecks.

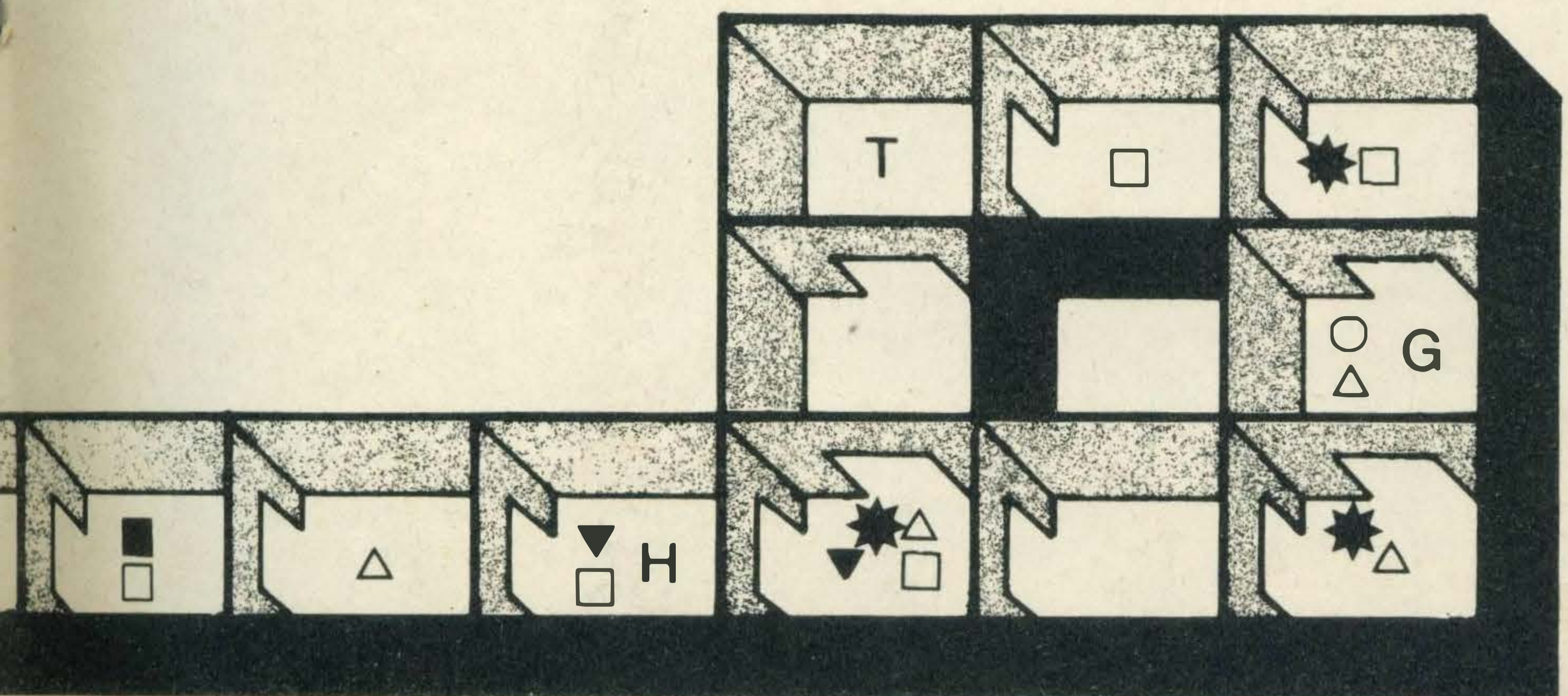
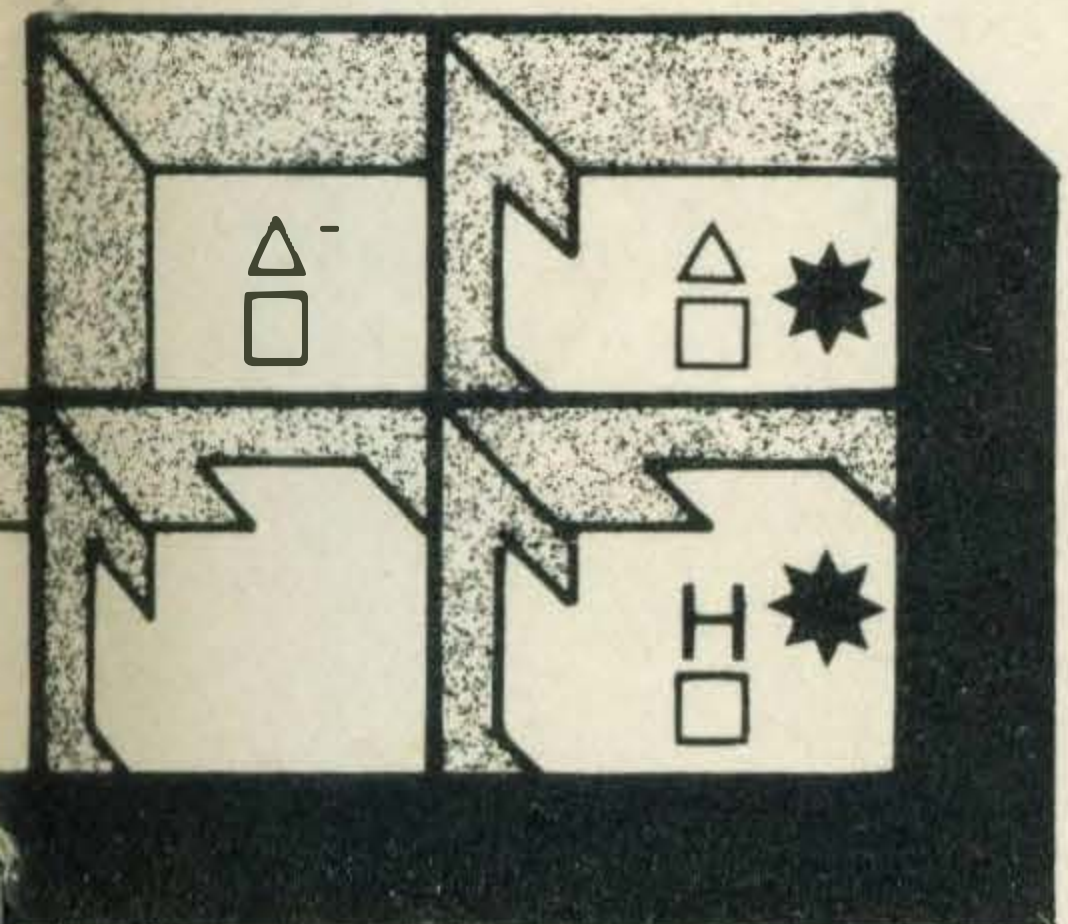
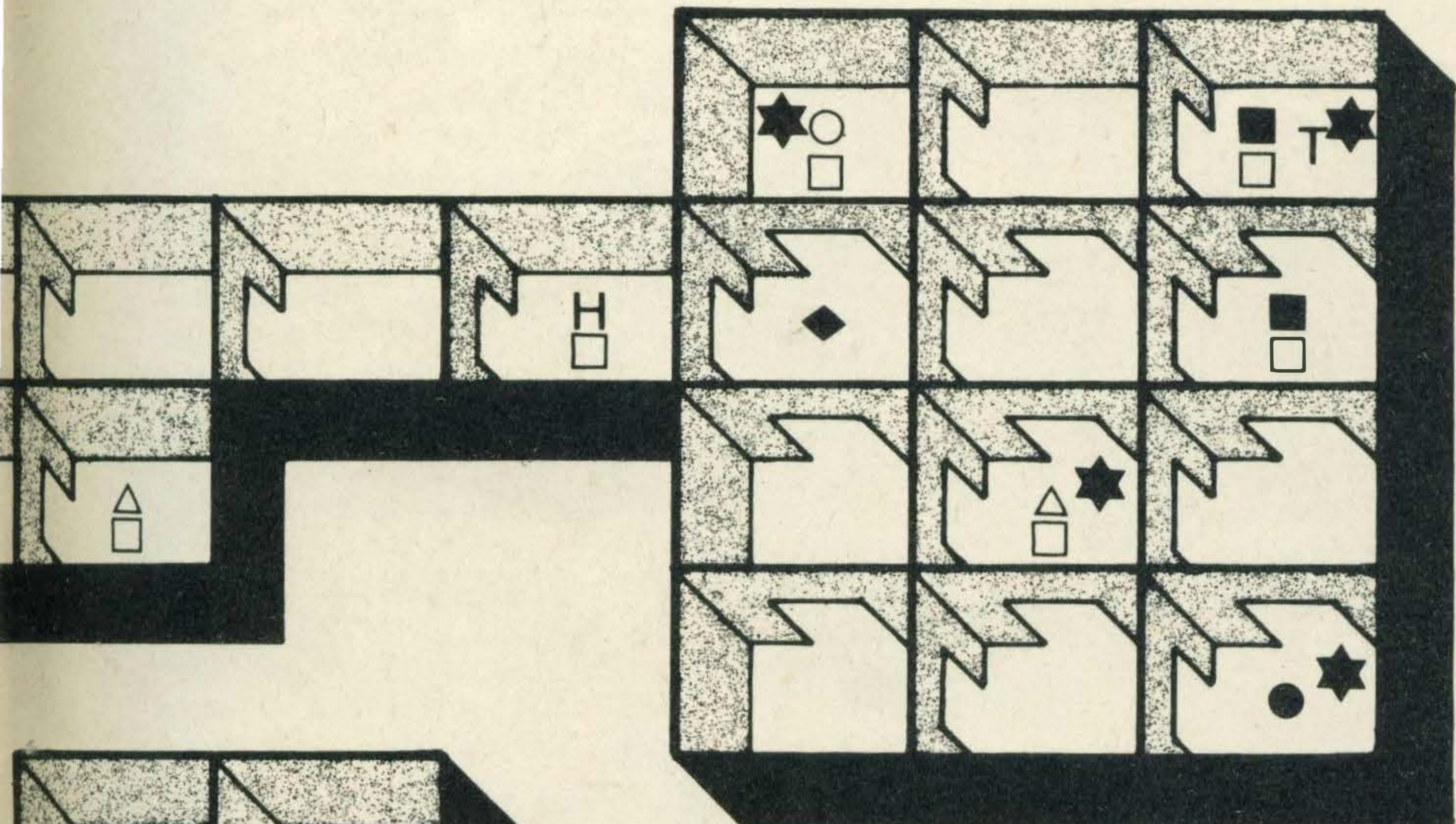
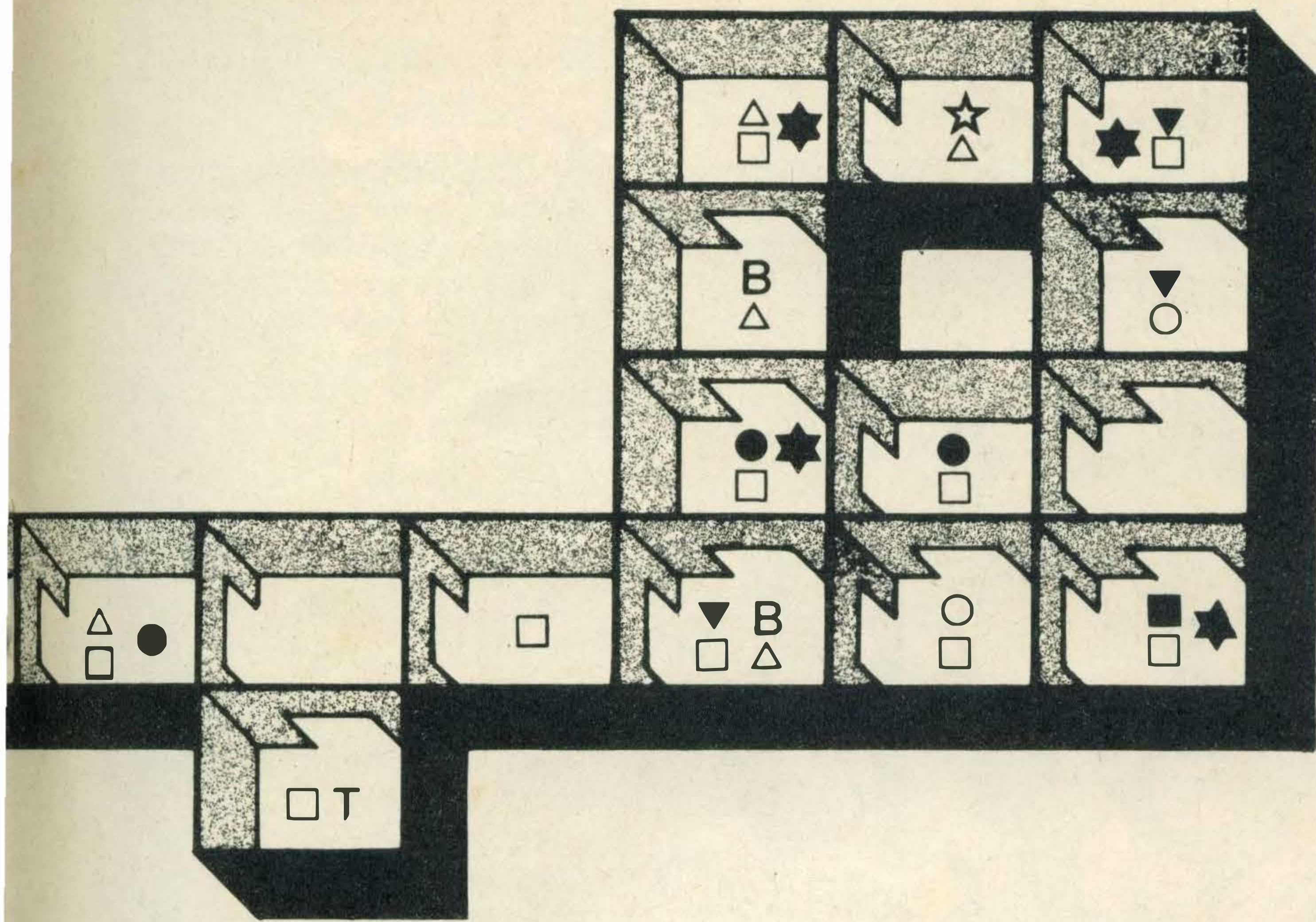
If your interests lie more in programs with straightforward I/O limited to keyboard, text on the screen, tape and disc files, then a high level compiler would be a quicker way of achieving results.

The only true high-level language compiler we are currently aware of for cassette-based MSX machines is Hisoft's *Pascal MSX*. Fortunately it is very good, which is why we selected it as one of the prizes you can win in this issue's competitions.

Applications suitable for Pascal are writing your own utility programs or setting up database projects.

9/7/86 12 1000 131  
13 14 15





# THE MAP

by  
D Eade

## Key to Map

- Bouncy Ball (kills)
- Spikeball (kills)
- △ Spikes (kills)
- G Gargoyle (kills)
- B Baron (kills)
- W Wizard (kills)
- C Cauldron (drop objects here)
- ▼ Portcullis (kills)
- Chest
- H Ghost (kills)
- ◆ Fireball (kills)
- T Table (moveable)
- ☆ Spell (some kill, some push)
- ★ Some objects are used twice. The objects are asked for in a circular pattern, but the cauldron doesn't always ask for the same one first.
- Blocks

Don't go into the cauldron room when you are a werewolf or you will die.



**A**nyone with a keen interest in the music business should go to the Frankfurt Music Fair.

There you can see and check everything on the market from the most delicate hand made instruments to the most advanced computer based synthesizers and software.

This, then, is a summary of some of the MSX music products at the show.

Rittor Music was demonstrating its *PSG Musiwriter* (£25) chord based step time composer and *Odyssey K* (£12), a simple three-track real time recorder. Both of these use computer keyboard input with the MSX sound chip. A CX5M version of *Musiwriter* (£30) with optional output to MIDI keyboards was also announced.

Mike Beecher of EMR paid a quick visit to be disappointed with JVC's low profile UK marketing of his eight polyphonic track real time £170 *Midi Studio Performer* (digital recorder) software and interface. This is an advanced conversion from a similar package already available on Commodore, BBC, Sinclair Spectrum and Amstrad. It features full MIDI IN/OUT for touch sensitive keyboards and rhythm units plus track merging, arranging, punch-in facilities and up to 23,000 note capacity. Further modules in the suite (*EDITOR*, *NOTATOR* etc.) will soon be available for MSX.

The Roland stand featured a Toshiba MSX2 prototype — a real time MIDI recorder ROM software package. The other big name providing real time delivery, demonstration, and considerable promise, was Yamaha.

Yamaha's original music computer, the CX5M was initially sold for around £600. The most original feature of this system was the high quality SFG01 'FM Tone Generator' sound module, which was essentially the same as that in the £800 Yamaha DX9 synthesizer keyboard.

One substantial weakness, however, was that the MIDI IN facility was not fully implemented. This meant that you were tied to Yamaha and could not compose or drive the sound synthesizer on a MIDI instru-

# FAIR PLAY

*Our wandering minstrel  
Tim Markes reports on  
the people and products  
at the Frankfurt Fair*



ment of your choice.

At Frankfurt 86, Yamaha put this and a few other niggles right by presenting the enhanced SFG05 sound module (£95) for the CX5M.

This module plus new versions of software packages will allow input from and output to any MIDI equipped keyboard however sophisticated, or cheap. Even without further software, however, the 'Call Music' system on the CX5(32K)+SFG05 provides a simple 1800 note touch sensitive sequencer (digital recorder), with nearly 50 preset voices and cassette/disk save plus many other goodies.

The sound chip is similar to the £750 Yamaha DX21 keyboard, which reproduces touch via MIDI. Further 'X' rated goodies from this chip are split keyboard facilities and laying up to 4 separate voices with 2 note polyphony. The unit

(CX5+SG05) can now also be used as a conventional FM expander — a keyboardless MIDI synth. Compared with a (£700) TX7 expander, it is astounding value.

You might think that all this CX5 music stuff was of interest only to CX5 owners. Not at all. In Japan, punters can link an SFG05 sound module to the cartridge or expansion slot of any MSX computer using a standard cable connection supplied by Yamaha. There are no plans to market this in the UK — but an alternative solution is imminent.

UK semi-pro musicians or musical hobbyists with over £1000 to spare will remember that Yamaha's launch of the DX7 keyboard at Frankfurt 1983 was a milestone in instrumental history. Many DX7 enthusiasts joined the DX Owners club, which keeps members fully up to date with

other Yamaha 'X' series products — including the CX5M. The latest newsletter describes a simple DIY method of producing a single circuit board connection between the MSX cartridge slot and SFG05 — parts available now in the UK by mail order cost under £4.00. Yamaha (UK) will have taken over the administration of the club by the time you read this.

Buy any standard MSX with two cartridge slots, connect an SFG05 synth unit courtesy of Yamaha, and you can use all the facilities of any MSX music software packages.

Yamaha's FM Voicing Program 2 (ROM cartridge) enables you to create nearly 50 voices additional to the presets available on the SFG05. These can be saved to tape, Data Memory Cartridges or (now) Disc and, for example, input to the FM Music Composer 2 (ROM cartridge).

Both these packages are significantly enhanced in addition to its new SFG05 and disk compatibility. Then the MIDI Recorder cartridge provides sophisticated four track real time recording with detailed editing and punch in/out facilities from any MIDI instrument plus cassette/disk save.

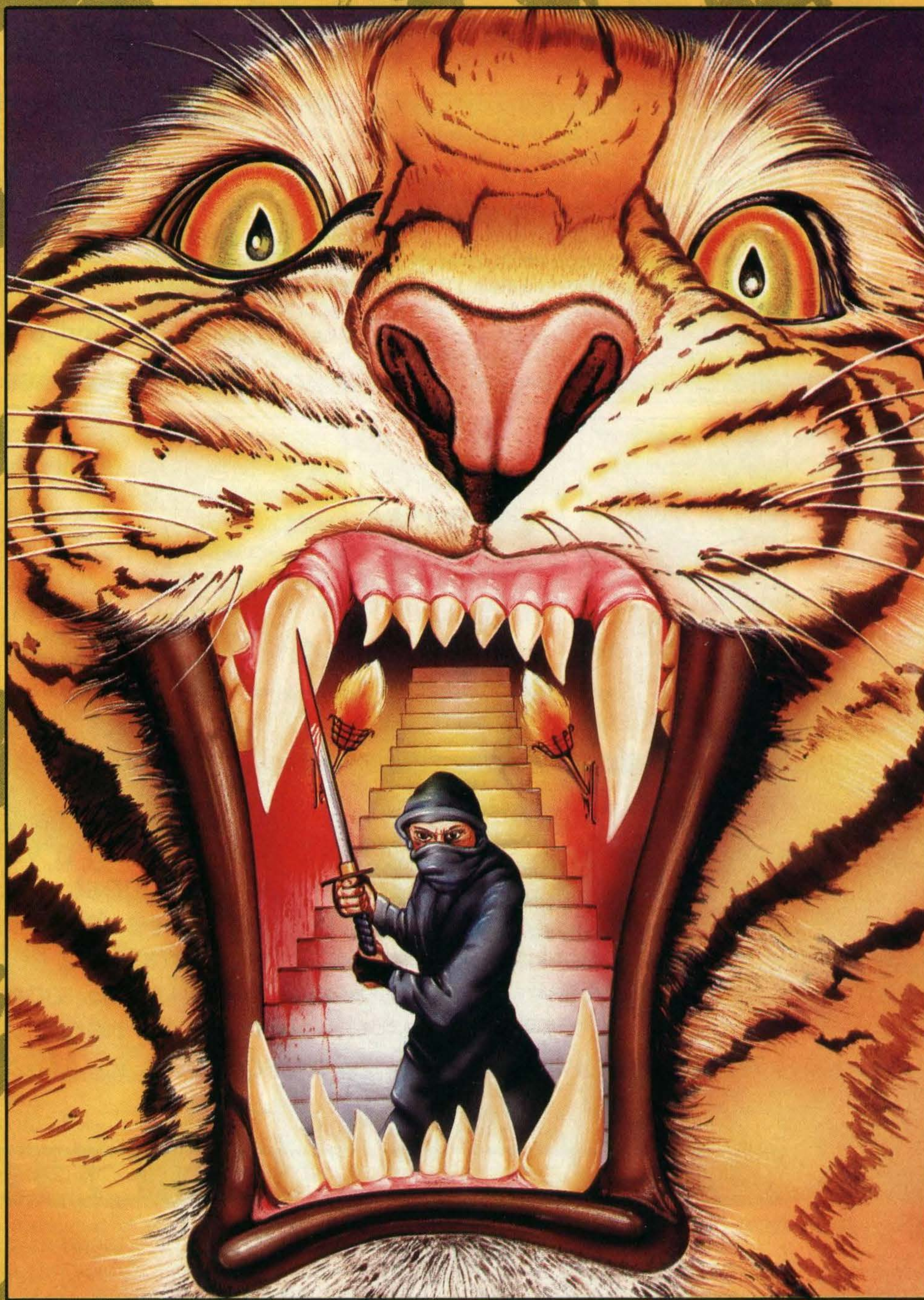
Yamaha also offers eight other music software packages including upgraded versions for the new synthesizer unit. They cover voice editing on the DX7, DX21, and RX rhythm unit programming — all under £50.

Digital Music Systems plans to show its eight track Real Time Sequencing Recorder package for the CX5M and MIDI keyboards at Frankfurt next year. Meanwhile the standard SFG01 synthesizer version is already available and the SFG05 touch sensitive version is about to be released.

How about a little arithmetic in round numbers? Discounted basic MSX (£50) + SFG05 (£100) + link (£10) + Music Composer or MIDI Recorder (£40) = £200. Add a touch sensitive MIDI keyboard for input and you have a very powerful music system.

With the price of a MIDI keyboard (Casio CZ101) now around £250 and falling, a standard MSX plus a few extras looks and sounds like the most cost effective 'computer music' unit on the market.

# THE WAY OF THE TIGER



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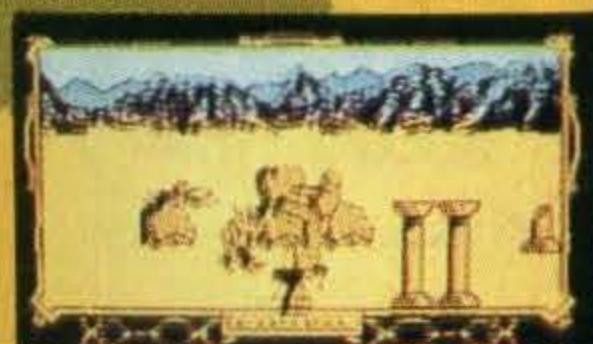
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# READ ALL ABOUT IT

**December 85/January 86**

Make the most of your micro's memory and reach the parts you've never reached before. We show you how to load and save those programming masterpieces.

Get more out of your Epson-compatible printer with the aid of control codes.

Make music with Digital Music System's latest music cartridge.

We put Toshiba's word processor, Bank Street Writer, through the mill.

**February/March 86**

The Cat tested — a tracker ball to control games and serious applications.

Formatting the screen display for BASIC programmers with lots of text and numbers to handle.

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Listed below are the currently available back issues with a brief description of the major features, tests and reviews in each. All issues carry software reviews and listings.

Exclusive Sorcery map shows you the way around Virgin's best-seller.

Mike Gerrard explores Level 9's *Worm in Paradise*.

Word processing and programming books reviewed.

The world's first MSX camera.

**April/May 86**

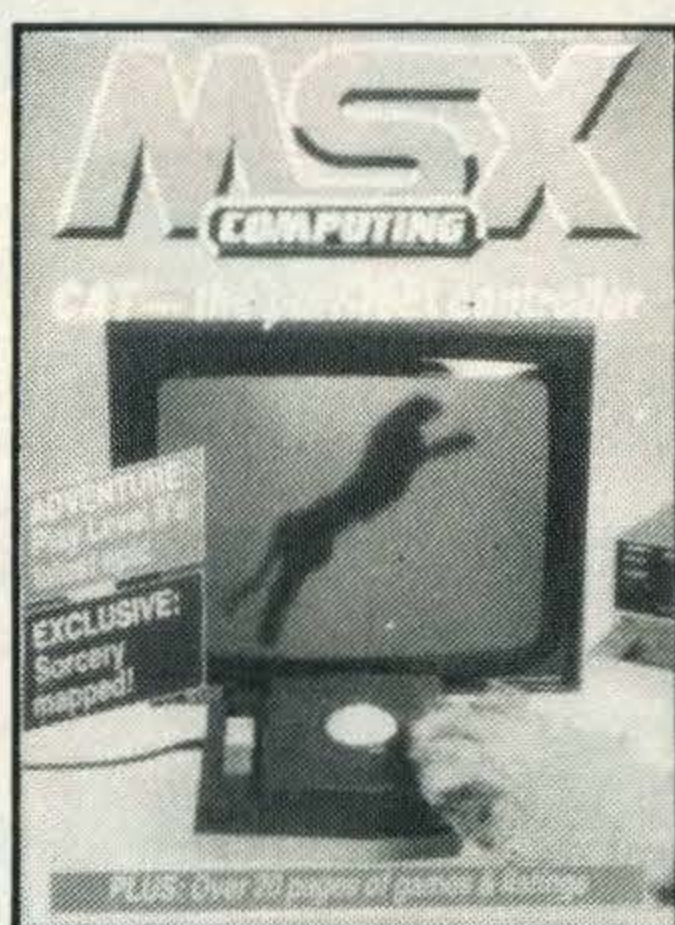
Learn how to read and write tape files from within a program with this month's BASIC article by Tim Markes. Read our exclusive interview with the brains behind Aackosoft and find out what games are in the pipeline.

Stuck in the bathroom? Then follow our exclusive map of *Jet Set Willy II*.

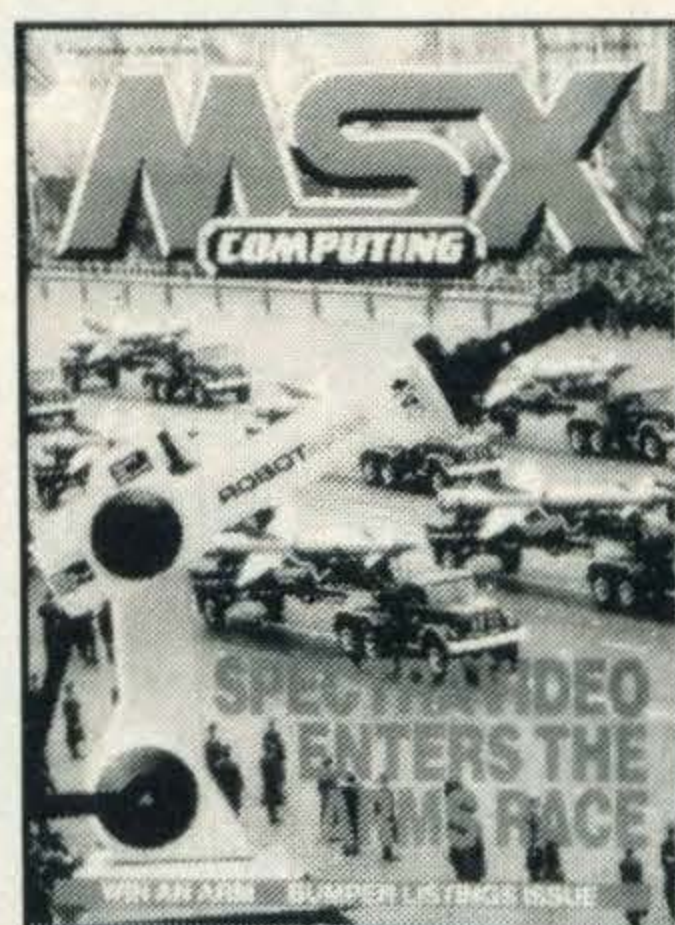
We also managed to lay our hands on and test the first robotic arm for MSX courtesy of Spectravideo.



DECEMBER '85



FEBRUARY '86



APRIL '86

## EVENT QUEUE

In the August/September edition of *MSX Computing* we report on exciting plans from one of Europe's biggest names in MSX, Philips. The new Philips micro is integrated with a VHD (video high density) disk and is planned to go on sale in this country soon, bringing with it the potential for new applications.

If you are one of the many readers frustrated by Mastertronic's excellent game *Finders Keepers*, help is at hand with a detailed map and playing hints.

We examine some new products from Yamaha which take MSX into the realms of professional music-making.

Plus software reviews and more help with adventure problems from Mike Gerrard. On sale Wednesday 11th August.

When a copy of *MSX Computing* comes out, newsagents' shelves are often emptied of stocks within days. If you aren't quick off the mark you might find yourself stuck without a copy.

One possible solution is to

pop down to your local newsagent waving a very large axe, and suggest politely that he increases his order. But we recommend a second method — so much more civilised — your own personal postal subscription to *MSX Computing*.

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# SOFTWARE SCENE

All the latest MSX software reviewed in our usual format to help you spend your hard-earned money wisely. In addition to our detailed description of each program we use a star rating system, evaluating games on graphics, sound, value for money and our overall verdict. Where a

rating is not applicable — use of sound in a wordprocessor, for instance, the rating is given as N/A.

### STAR RATINGS

- ★ Not worth the trouble
- ★★ Acceptable, but nothing exciting
- ★★★ One of the best

## NIGHTSHADE £9.95

Ultimate is onto another winner with its latest title *Nightshade* judging by the popularity of its previous titles *Alien 8* and *Knightlore*.

Like the others this too incorporates 3-D graphics, but *Nightshade* also has an added feature called 'Filmation C', a process which allows you to have complete freedom to do as you wish with any of the objects and items found within the game.

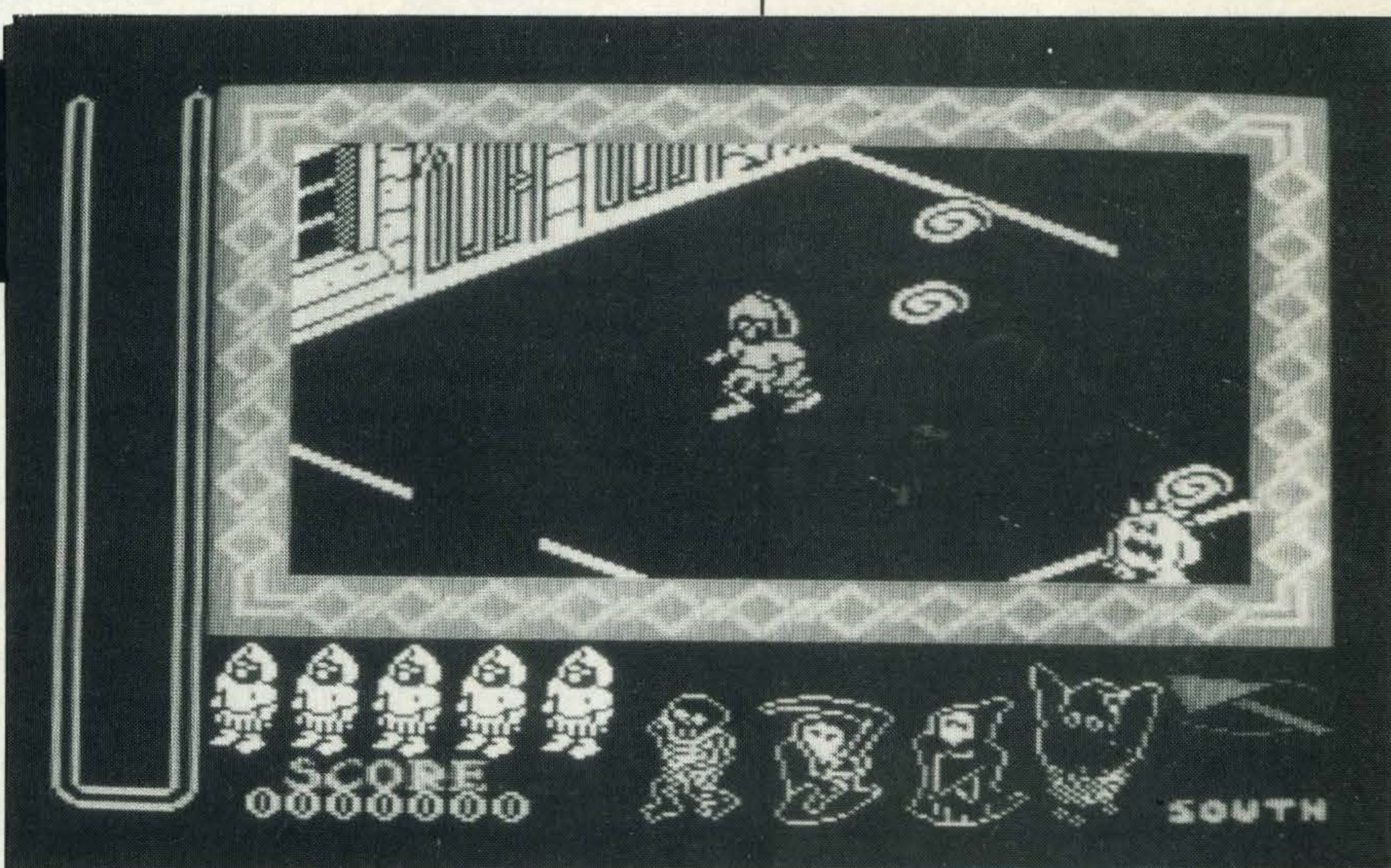
Cast as an adventurer you are told by an old story teller of a village called Nightshade which lies in a hidden valley.

He tells of how the village was cast by evil and how all who remained in the village became stricken with deadly plagues. He goes on to warn that anyone who dares to trespass into the village to try to defeat the overlord will be preyed upon by skeletons with rotting flesh dripping with blood.

Naturally curiosity overcomes you and after you have extracted more ghoulish information and directions from the old man you set off down the valley and enter the forbidden village of Nightshade.

The instructions accompanied with the game give very little away which adds to the suspense and thrill of wandering through the village not knowing what's going to happen next.

It takes a lot of skill to avoid the wizards, gargoyles and sabreman and even more to locate the treasure. However you are helped with a compass at the bottom of the screen



so that you can in fact plot your movements and pinpoint exactly where you are.

With five levels at your disposal you stand a reasonably good chance of cracking this adventure but it takes time and patience. We're still persevering but have managed to notch up a good score, knock out some of the monsters lurking in the passage ways and find some treasure.

The graphics are superb, you can move under balconies, hide in corners and saunter through doorways. The sound effects are equally good and we reckon this title is going to be very popular with the adventure fraternity.

We'd love to tell you more but it would spoil your enjoyment so we'll leave you in suspense and a few words of advice: there are plenty of surprises and it's worth your while expecting the unexpected.


**SUPPLIER:** Ultimate  
(0530) 411485  
**TYPE:** Arcade/adventure  
**FORMAT:** Cassette  
**RAM NEEDED:** 64K

**GRAPHICS** ★★★

**SOUND** ★★★

**VALUE** ★★★

**VERDICT** ★★★



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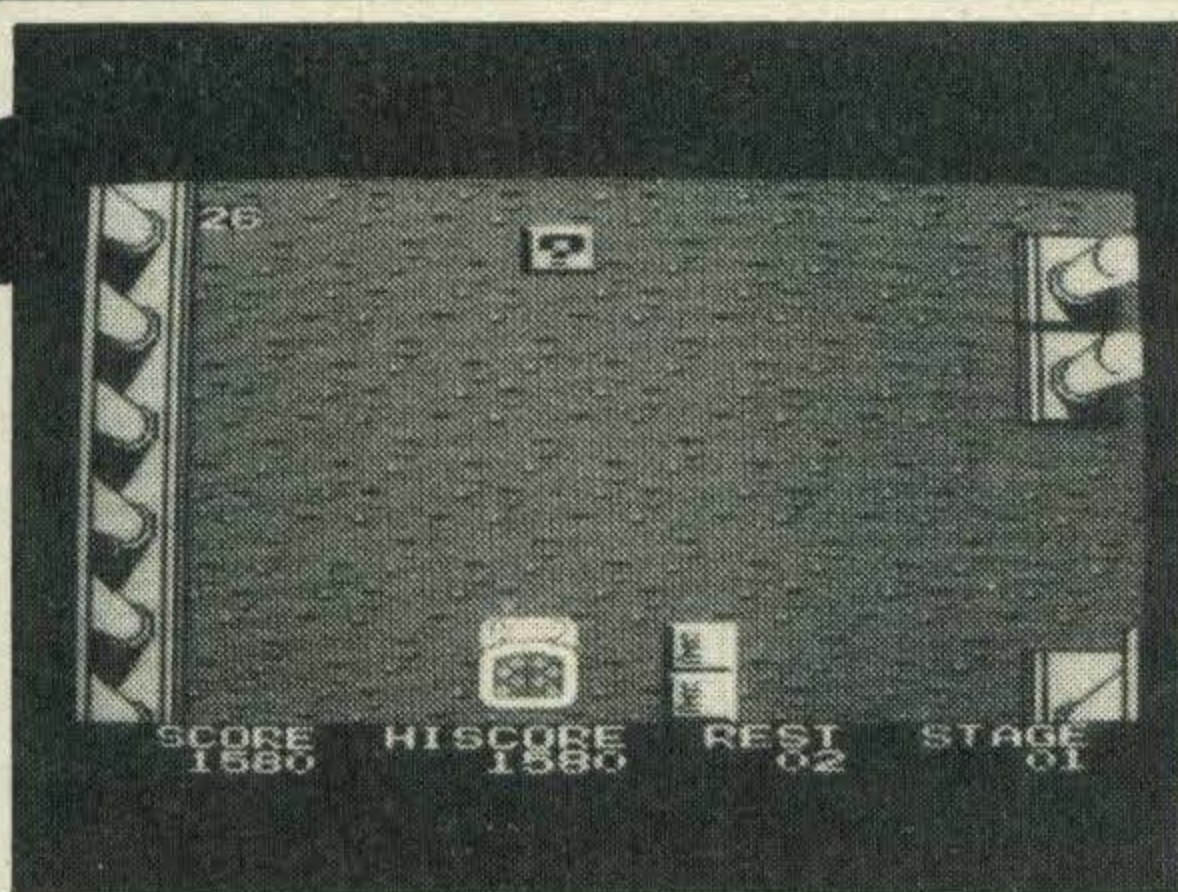
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## KNIGHTMARE

£17.95

**SUPPLIER:** Konami  
01-429 2446  
**TYPE:** Arcade/adventure  
**FORMAT:** Cassette  
**RAM NEEDED:** 32K

**GRAPHICS** ★★

**SOUND** ★★

**VALUE** ★★

**VERDICT** ★★

We have come to expect high quality sports titles from Konami and frequently its games are the top of our hit parade, but now the company has gone one better and launched an adventure type game.

*Knightmare* is only an adventure in the sense that you have to fight your way through a variety of different screens and a prolific assortment of monsters will do their utmost to eliminate you.

Gamesters familiar with the rest of Konami's titles will recognise that *Knightmare* is very similar to *Sky Jaguar* in that too you had to work your way through several screens knocking out the opposition.

As I said it's not exactly an adventure but a brilliant variation on the space invader/galaxian theme and it is incredibly addictive.

In order to review *Knightmare* the editor and various onlookers had to be fought off before I could get anywhere near the keyboard!

It is fairly easy to play the final level but having said that I've had lots of practice. One you get to then of the first level you come face to face with one of the most vile and evil monster in Greek mythology, snake headed Medusa and her cloud monster underlings. She blocks the entrance to the next level, it's difficult to get past her but it can be done I won't spoil the fun by telling you how.

Level three also holds a delightful character in store for you, the Bone monster so called because he's an actual skeleton and he hurls parts of his own limbs at you.

I can't reveal what happens in the other levels because that's as far as I managed to get mainly because I was playing with an enormous handicap. The copy sent to our offices was a pre-production copy and the instructions and techniques on how to play are in Japanese, not one of my strongest languages!

Using the diagrams as a rough guide I managed to suss out some of the playing techniques and tot up a reasonable score.

Graphically the game is excellent and in a league of its own, very innovative and on occasion hilariously funny. One of the nice touches to the game is that there is a pause facility, and when you make use of it your little adventurer hops into bed and whiles away the time dreaming!

It also gives you time to catch breath before tackling the next barrage of missiles and monsters.

If you are looking for a game that's a cross between a shoot 'em up-knock 'em dead/Ultimate type adventure go for *Knightmare*, it may be expensive but the quality is outstanding and will appeal right across the age spectrum.

## TURMOIL

£2.99

Platform games have always been very popular and Bug-Byte's *Turmoil* is no exception.

Cast as Mick you find yourself held captive by foreign oil barons who have imprisoned you in a garage with a greasy looking arab, who is your body bodyguard.

The only way to escape is by filling the cars up with oil (I always thought cars ran on petrol) and driving away. Sounds easy but it isn't and a lot of skill is required.

Acquiring the oil is tricky as you've got to locate the oil can and get to it without being grabbed by your captor. Once the can is in your mitts you then have to make a mad dash up to the top right hand corner of the screen where oil is dripping out of a large container.

Once you've filled your can it's back down the stairs to the bottom of the screen where you have to pour the oil into the grid. Each time you do this part of a car appears, and obviously the more oil you collect the more parts appear until you have a whole car and can make your getaway onto the next level.

By collecting the various tools that are lying around the workshop and putting them in the workshop which is at the bottom right of the screen you can boost your score.

The following levels are all different with more intriguing and difficult obstacles to

overcome.

In total there are 26 screens to work your way through and as the action is thick and fast it is not the sort of game you're going to sail through in half an hour.

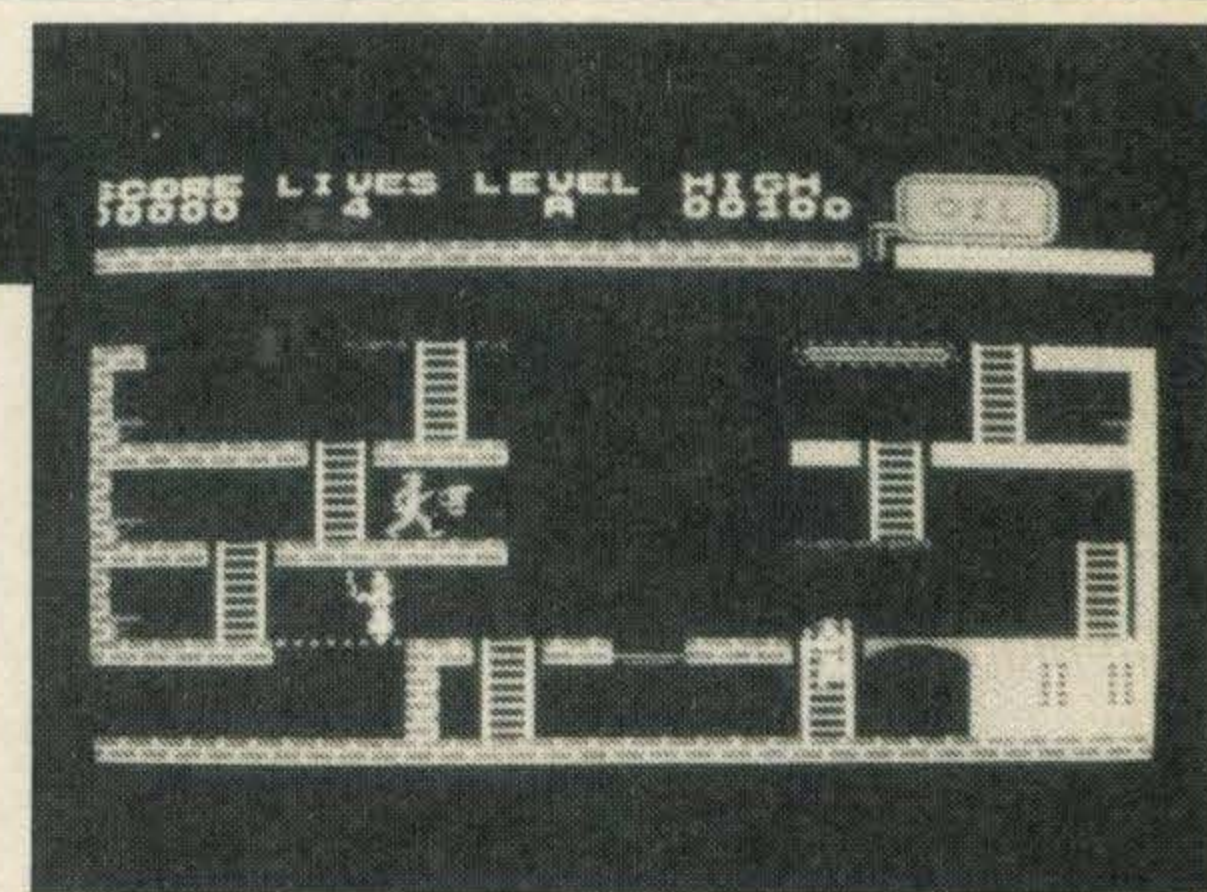
The graphics are cartoon style and Mick bares a remarkable resemblance to a matchstick man, his guardian doesn't look too healthy either!

This is one of the first titles we have reviewed for MSX from Bug-Byte and considering its low price tag of £2.99 it isn't a bad game. And we're hoping the company has more budget-priced software up it's sleeve for MSX.

Plenty of imagination has gone into the design of *Turmoil* so that it's not the type of game that's going to end up being put aside because the player is bored. Each level holds new adventure and for that reason alone is worth having.

It's a great game to play despite the fact the graphics are far from stunning but for £2.99 you certainly get value for money which is more than can be said for many titles that we have reviewed in past issues of *MSX Computing*.

All in all this is a title we strongly recommend the pure novelty of the game will keep you amused and absorbed for hours on end.



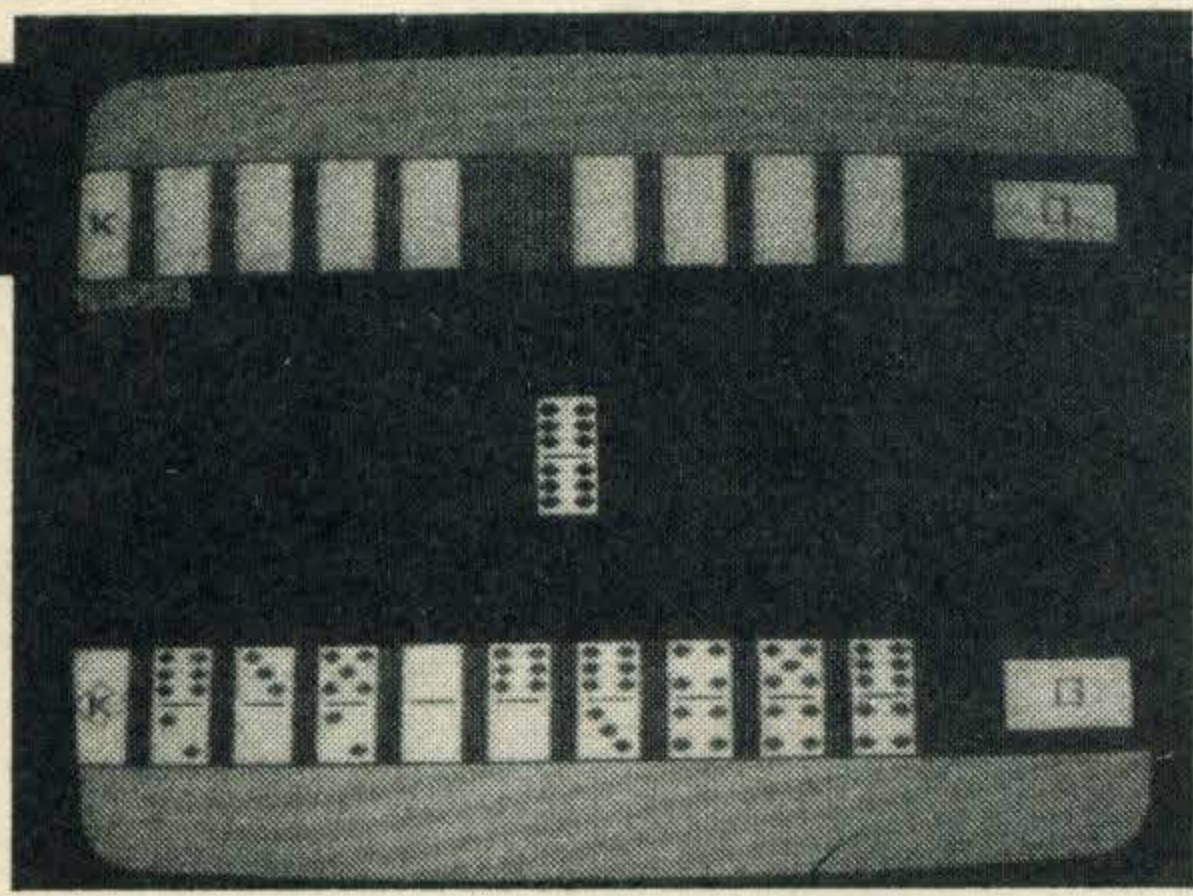
**SUPPLIER:** Bug-Byte  
01-439 0666  
**TYPE:** Arcade  
**FORMAT:** Cassette  
**RAM NEEDED:** 64K

**GRAPHICS** ★★

**SOUND** ★★

**VALUE** ★★

**VERDICT** ★★



## DOMINOES

£5.95

**SUPPLIER:** Microteknix  
(0272) 571679  
**TYPE:** Board game  
**FORMAT:** Cassette  
**RAM NEEDED:** 64K

**GRAPHICS** ★★

**SOUND** ★★

**VALUE** ★★★

**VERDICT** ★★★

As the title suggests this game is about that old favourite Dominoes. Until this arrived in the office we thought the game of dominoes was a dying art so it was a pleasant surprise to find this on the desk for reviewing.

However before continuing I have to admit that I'm quite partial to a game of dominoes and make no apologies for producing a biased review.

The program comes from a new software house set up solely to write titles for MSX and judging by the quality of its first offering the future should be bright.

Instructions are contained within the game and are quite detailed so that even a novice should be able to pick up the rudiments fairly quickly.

You can play using either the joystick or keyboard and three levels of playing ranging from easy (suitable for young children) to hard (which isn't really very hard). The author has also included some added extras which include level four where the first player to reach 60 wins, and three 'dead hole' levels whereby you must score the exact amount required and any score over this is lost.

The game also has an inbuilt cheat facility whereby you can look at the computer's dominoes. I didn't use this as it would take

the fun out of the game.

As for playing the actual game it's a cinch. All you have to do is move the cursor along to the domino you want to place on the board and then hit the SPACE bar. The computer will then have a think and take its move.

It is just like playing with real dominoes and just as much fun and I can't understand why it hasn't been done before.

The only fault with the game is that you have to play against the computer which is a pity as I'm sure a two player feature would enhance the game no end.

Graphically this game is by no means anything special and could easily be mistaken for a reader's listing, nonetheless it is still a good game.

The sound effects are minimal and merely functional in other words you hear a helpful 'ping' when it is your or the computer's turn to move.

This is the first dominoes game I've come across for MSX and it rates very highly.

At £5.95 it's priced well within the budgets of most people's pockets and is good value. This title is well worth adding to your collection if you like playing traditional games and is sure to be a great hit on rainy Sunday afternoons when there's nothing but sport on the television and you are at a loss for something to do.

## THE WAY OF THE TIGER

£9.95

Martial arts fans will be in their element with this latest title from Gremlin Graphics.

The setting takes place on the magical world of Orb where you were brought up by monks of the Temple of the Rock.

The monks worship their God Kwon, supreme master of unarmed combat and you are adopted by Naijishi the Grand Master of the dawn who trains you to become a Ninja.

However before becoming a fully fledged Ninja you have to pass a series of tests against the master's chosen adversaries.

You are given levels of endurance and Inner Force and for every complete circle of endurance that you use up one point of inner force is ducted. As you fight your way through the challenges you'll soon realise that the less inner force you have the less effective the blows to your opponent will be.

If you have played Konami's *Yie Ar Kung Fu* and *Yie Ar Kung Fu 2* then you'll appreciate how difficult *The Way of The Tiger* is to play. Not only do you have to be very nimble on your feet but you need to anticipate your opponent's actions.

The actual storyline of the game is very weak and it's the graphics that make the game stand out.

Gremlin Graphics is one of the first software houses to incorporate triple scroll-

ing action in a game.

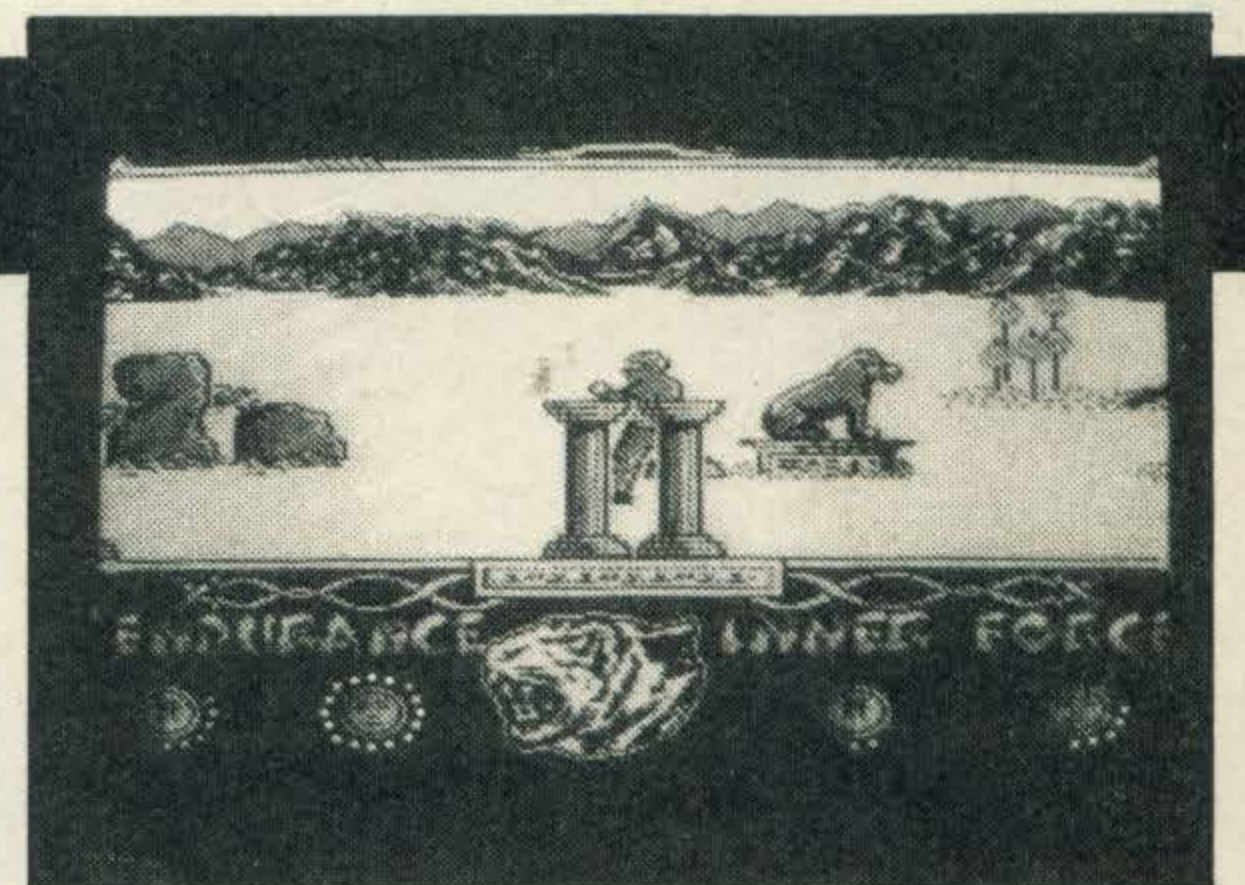
In other words while you're attacking your opponent clouds will float past, ducks will skim across the lake and an old woman can be seen wiping her nose and pushing a pram across the screen. The effect is as if you are viewing the events through a movie camera.

The game comes in the form of two cassettes. The first contains the master tape which has to be loaded before you can play any of the game. The other side of it contains the first level, Unarmed Combat and the other levels Pole Fighting and Samurai Sword Fighting are on the other tape. Which is all very well except when you come to re-playing a previous level and you have to re-load that entire section again.

*The Way of the Tiger* is an interesting game to play and would be even more appealing if the actual characters were clearer, half the time it looks as if your Ninja is wearing a sack cloth and suffers from rickets!

It's a lot more expensive than most cassette based games but then you are getting two cassettes for your money and a very detailed instruction manual.

This isn't a title to rave about despite the superb graphics, unless you are a Kung Fu fanatic, nevertheless it's bound to be a big hit with children.



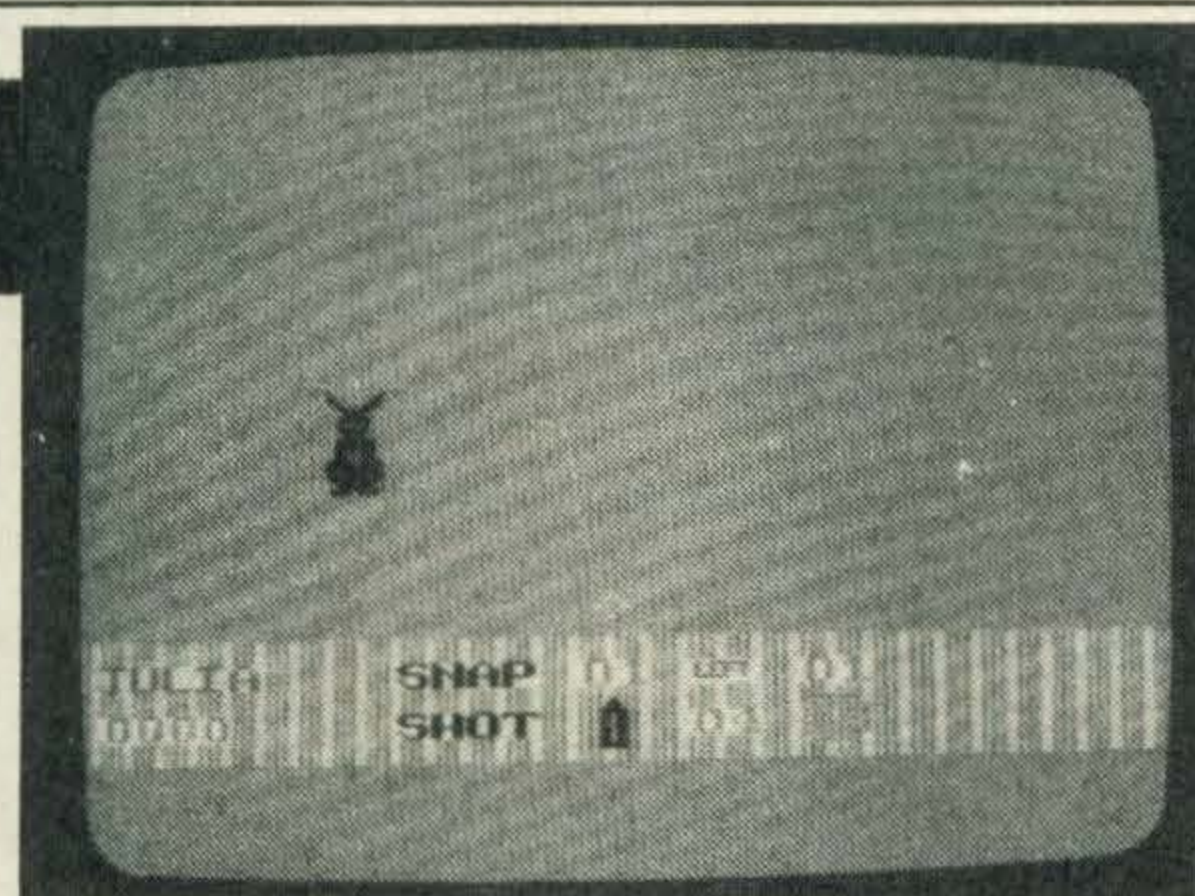
**SUPPLIER:** Gremlin Graphics  
(0742) 753423  
**TYPE:** Arcade  
**FORMAT:** Cassette  
**RAM NEEDED:** 64K

**GRAPHICS** ★★

**SOUND** ★★

**VALUE** ★★★

**VERDICT** ★★★



## HOTSHOT

£5.95

**SUPPLIER:** Microteknix  
(0272) 517679  
**TYPE:** Arcade  
**FORMAT:** Cassette  
**RAM NEEDED:** 64K

**GRAPHICS** ★★

**SOUND** ★

**VALUE** ★★★

**VERDICT** ★★

The blurb that goes with this game is totally uninspiring and makes *Hotshot* sound extremely boring.

However once we started playing the game we realised just how deceiving game descriptions can be.

*Hotshot* comprises five different games in the one tape they are all the same type of game ie., the shoot 'em up variety but all are exceedingly. So good in fact that we had great problems tearing our advertisement manager away and convincing him that it really was about time he did some 'real' work.

The four games are Shooting Gallery, Snap Shoot, Duck Shoot, and Clay Pigeon.

Shooting Gallery is a big standard target game whereby you simply have to fire at a moving target. It's a simply idea but the game itself is by no means easy to play.

Snap Shoot involves taking pot shots at rabbits. The bunnies pop up with alarming regularity and the idea is that you shoot them down as fast as you can thus scoring more points.

The duck shoot is one of the most difficult games to play as you need to get the timing right in order to successfully shoot down a duck. It starts off relatively easy with the ducks flying across one at a

time but as you progress they start appearing in twos and threes. And it's not just enough to fire at the body — you have to hit them right between the eyes before they fall out of the sky into the lake.

The final game on the tape, Clay Pigeon is equally difficult as you are only allowed two bullets for each clay.

Again it's all down to timing and after some considerable practice we managed to notch up a fairly respectable score.

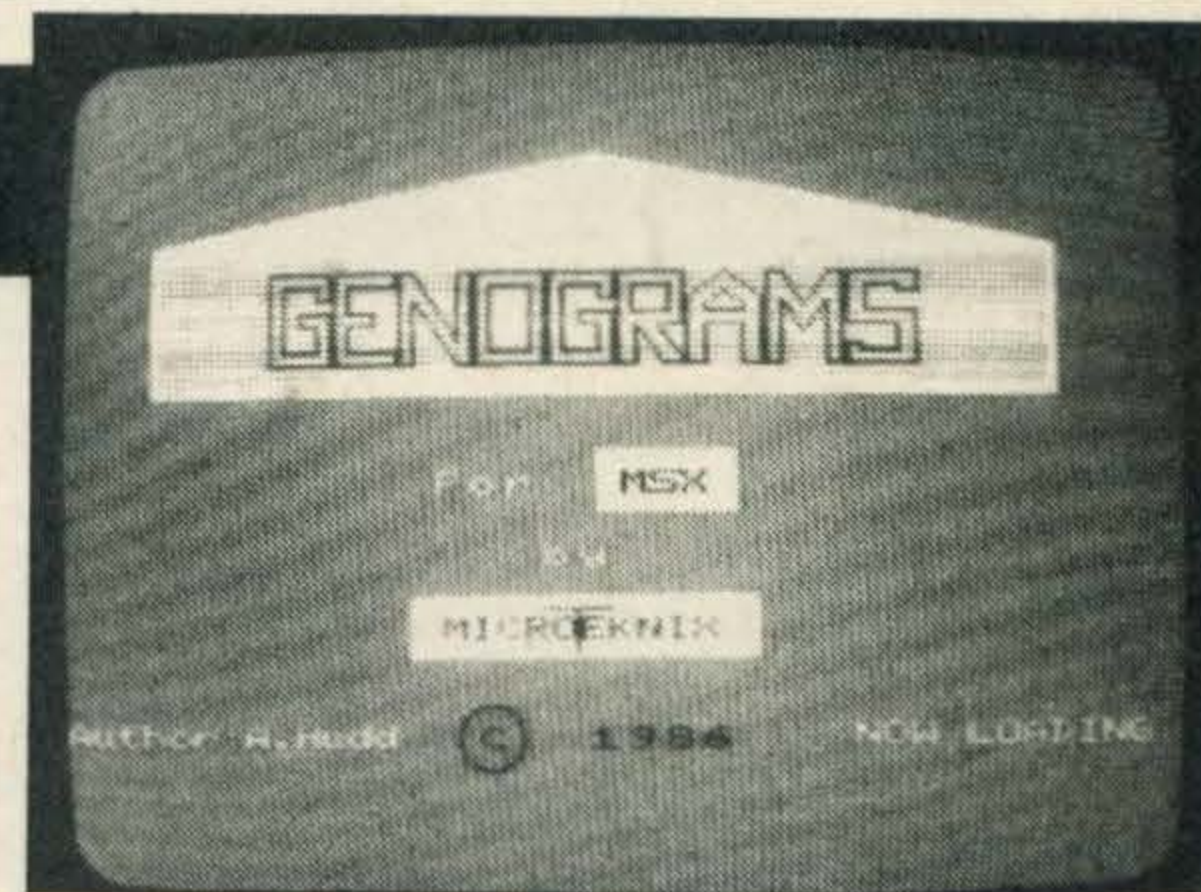
It should be mentioned at this stage that the tape we had was a pre-production copy and the final copies will have a fifth game on them called Rear Gunner and should be available by the time you read this issue of *MSX Computing*.

Graphically the game is of the same quality of the majority of reader's listings we receive. However the games are all equally addictive and it makes a change to find a compilation of games on the one tape.

If you're looking for a low cost game with plenty of action and your budget won't quite stretch to a Konami cartridge, you could do a lot worse than forking out £5.95 for *Hotshot*. Like us you'll find it fun to play, very addictive and value for money which can't be said for money of the games we reviewed in the past.

## GENOGRAMS

£5.95



General knowledge games are few and far between for MSX and most other micros for that matter. Maybe it's because they're not very popular or that software houses can't be bothered to devise them.

Whatever the reason it looks as if Microteknix could be onto a winner with its latest offering for MSX.

Most children of all ages and even adults enjoy general knowledge games if only to outwit the opposition and show off their supposed intelligence.

*Genograms* is a straightforward quiz game based on anagrams, a simple idea but very effective.

Up to four players can take part and you can choose from one to nine rounds.

Each round displays three words in enlarged bold graphics related to a particular topic but with all the letters randomly jumbled up. All you have to do is sort out the letters decide on what the word is and arrange them in the correct order. The faster you get the word the more points awarded.

Just to make the game harder it is split up into two levels of difficulty. The first level selects words containing four to six letters and the second level selects one six letter word and two of seven to nine letters.

It sounds easy doesn't it but it isn't. Some of the words are immediately obvious but

now and again a couple crop up which we just couldn't figure out.

There are over 31 different topics to choose from and over 1750 words so there's quite a lot of material to keep even the most tiresome youngster at bay!

Full instructions come with the game and it's worth taking time out to read them thoroughly as it is not immediately obvious which keys should be pressed and when.

A couple of nice features added to the game are the high score table and the highest round score, not found in many games these days, and an alarm bell starts clanging when you run out of time.

Also included in the instructions is a warning that the company has taken precautions to exclude words which may form 'naughties'. Needless to say we didn't come across any . . . more's the pity.

The only fault with this title lies in the loading time which is just over three minutes other than that it comes highly recommended despite the fact that it is not one of the most brilliantly presented games that we've reviewed.

At £5.95 it is cheap, fun to play and makes a welcome change from alien zapping and adventure playing and is the sort of title that will keep boredom at bay and provide hours of endless fun.

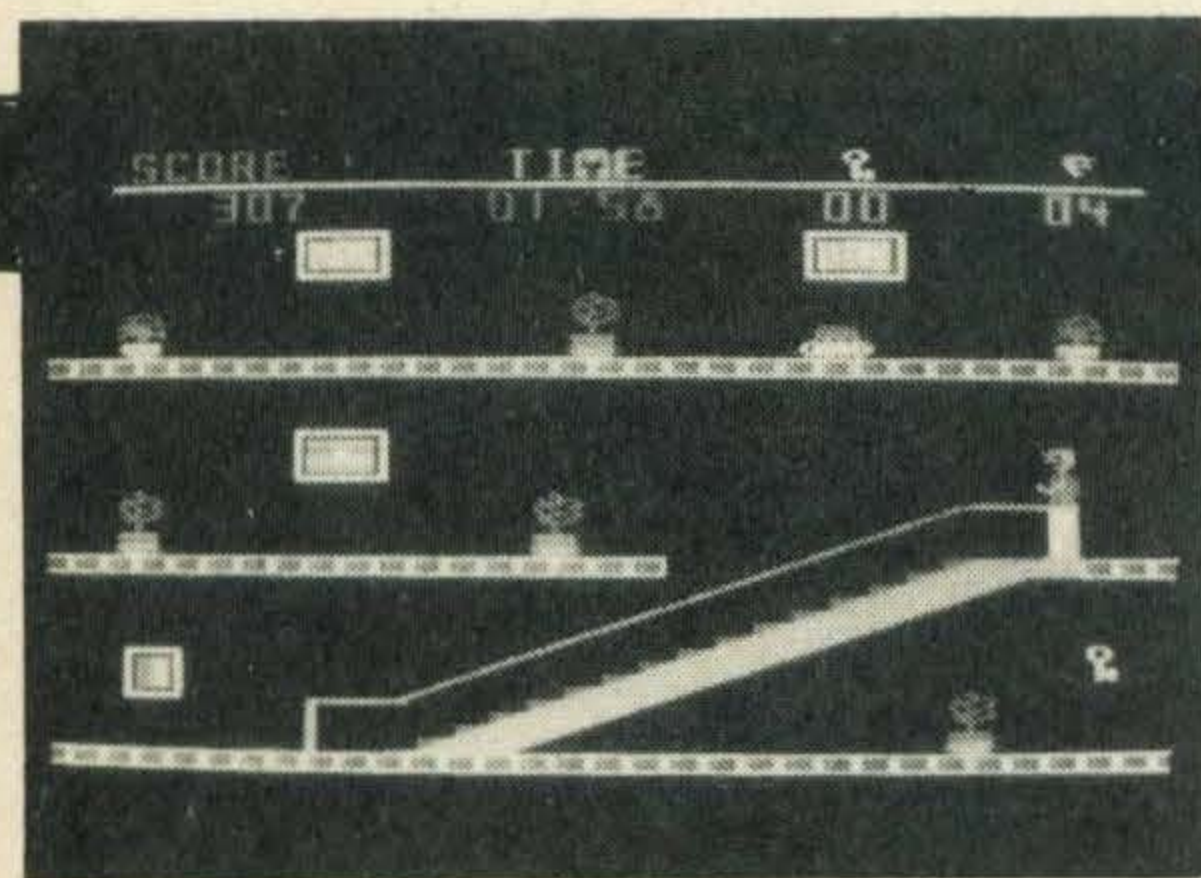
**SUPPLIER:** Microteknix  
(0272) 571679  
**TYPE:** Question and answer  
**FORMAT:** Cassette  
**RAM NEEDED:** 64K

**GRAPHICS** ★★

**SOUND** ★★

**VALUE** ★★★

**VERDICT** ★★★



## THE HEIST

£7.95

**SUPPLIER:** Nemesis  
01-741 2299  
**TYPE:** Arcade  
**FORMAT:** Cassette  
**RAM NEEDED:** 64K

**GRAPHICS** ★★

**SOUND** ★★

**VALUE** ★★

**VERDICT** ★★

Looking for a fun game with the same warped humour as the infamous Clouseau films which starred the inimitable Peter Sellers, then look no further this is it!

Never before have we come across such a game that has instant appeal and is so compellingly addictive.

You play the role of the world's super agent Graham Crackers (and he doesn't half look it) and have to face the terrors of international espionage.

The idea is to infiltrate a museum that is a front for a terrorist organisation, filch all the artwork and try and track down the secret micro dot that will save the world from death and destruction.

There are over 90 rooms to explore and plunder and the author has written in some neat procedures that give you a rough ride.

Not only do you have to avoid the man-eating robots but you need to keep a look-out for the sweeper drones which mean certain death.

While all this is going it helps if you grab the odd painting or two as that's the only way to boost your score and try to uncover the micro dot.

Many of the rooms are locked so you'll need to grab some keys, try and collect as many as you can because by golly you'll need them all! And some rooms are

cordoned off by brick walls and you may well have to retrace your steps before finding a way in.

It is also worth your while reading the instructions fully otherwise like us you'll waste valuable time trying to figure out how to get onto the escalators.

This game is very reminiscent of PSS's *Les Flics* so if you enjoyed that then *The Heist* will definitely appeal.

The graphics are far from outstanding but colourful and perfectly adequate and Graham Crackers looks very much like Basil Fawley the lead character in that popular BBC series *Fawlty Towers*. The accompanying sound is a jolly tune that fits in very well with the storyline but it could get on your nerves after prolonged playing . . . just as well there's a facility for turning it off.

It looks easy to play but *The Heist* is one of the best platform type games we've come across in a long time. It is extremely simple to play, highly imaginative and sure to be a big hit with all the family. Not a level goes by without something unexpected happening and it's at times like this that the pause facility comes in very handy.

At £7.95 it is reasonably priced to suit most pockets and should provide you with many hours of addictive fun. Buy it and we guarantee you won't be disappointed.

## THE BOSS

£6.95

Is it an adventure, is it an arcade, is it a platform game no it's a sort of question and answer type game.

In fact it's fairly non-descript and despite the colourful cassette cover we were somewhat disappointed.

*The Boss* is one of the first MSX titles from Peaksoft and to be perfectly honest we had to make several telephone calls to the company before we could get the game to load.

Having said that once the game did load it was perfectly playable.

It is basically a football management game so if you don't like soccer you're going to loathe it. The idea is to pick a team and play league matches trying to get as far up in the table as possible. At the same time you can buy, sell or transfer players, and swap their positions.

And as in real life football you have to pit your wits against other teams, worry about the suspensions, injuries, promotions, relegations and of course the bank manager who lent you the money to buy your goalie.

The game comes with minimal instructions and it's up to you to figure the rest out, which is where we went wrong. Whatever you do don't forget to make sure that the CAPS LOCK is off and when asked a question type in a Y for yes and N for no and

nothing else. Sounds perfectly straightforward but when the programme asked us if we wanted to play one of the list of teams we typed in the number of that team instead of a simple Y, and of course the game crashed. It also crashed when we decided not to borrow any money and typed in £0000.

Also in the instructions it says that if an injury crisis occurs and new players can't be afforded you can play a goalkeeper out of position . . . you just try doing it!

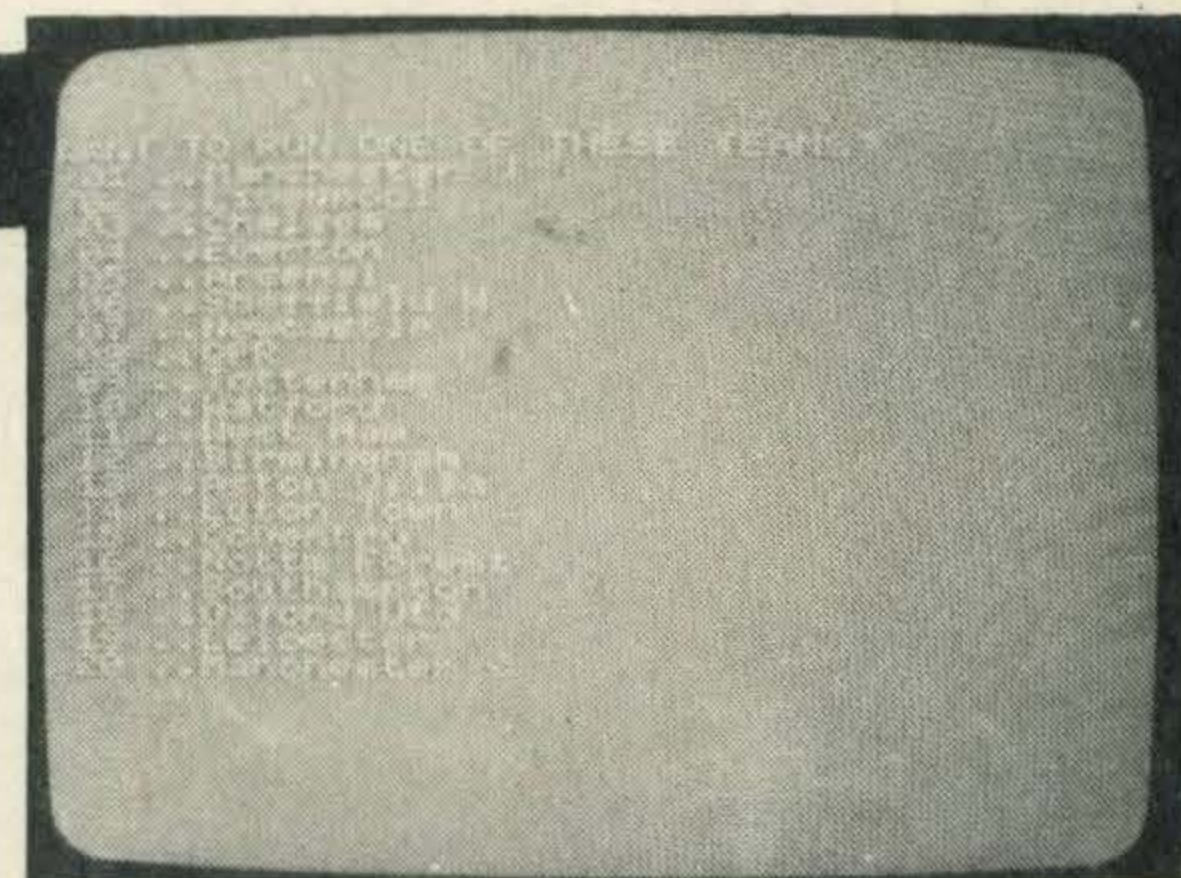
As for the sound it is that familiar jangle for Match of the Day and very catchy and goes a long way to enhance the game.

The lack of detailed instructions took a lot of the enjoyment out of this title and we reckon few children will have the patience to sit down and work out how to get started.

*The Boss* isn't one of the best titles we've reviewed and is by no means the worst.

If you're keen on football and the management side interests you more than physically playing the game then go for it otherwise there are other titles with more action that don't cost half as much. To be honest we didn't enjoy this game as much as we thought we would.

Having said that as this is the first title Peaksoft has produced for MSX maybe its next title will be a smash hit and one that's hard to leave alone.



**SUPPLIER:** Peaksoft  
(0636) 705230  
**TYPE:** Strategy  
**FORMAT:** Cassette  
**RAM NEEDED:** 64K

5

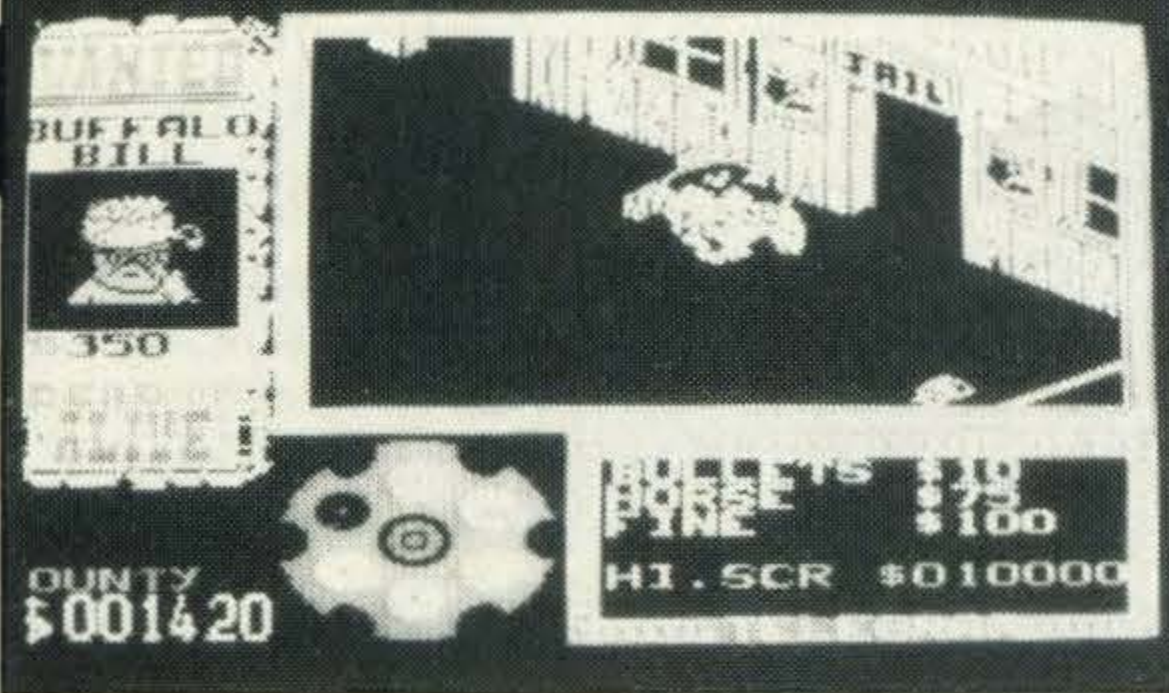
**GRAPHICS** ★★

**SOUND** ★

**VALUE** ★★

**VERDICT** ★





## GUNFRIGHT

£9.95

**SUPPLIER:** US Gold  
021-359 3020  
**TYPE:** Arcade  
**FORMAT:** Cassette  
**RAM NEEDED:** 64K

The technical sophistication of Ultimate's games is never in doubt. Indeed, some of the recent releases have been so complicated that we ageing, fumble-fingered software reviewers have found it difficult to get beyond the opening screens or even figure out what the game is really about.

*Gunfright* is slightly different. It is much more a pure reflex action arcade game than Ultimate's previous mystical epics, and it can offer a challenging game to players at any level of manual dexterity.

The task in hand is simple enough. The sleepy town of Black Rock is under threat from a desperate gang of killers. You as the sheriff must hunt them down.

The town is drawn in beautiful perspective views which scrolls around as your cartoon character walks up and down the streets. Keeping track of your location and surroundings is made easier by the ability to change viewing angles and a cunning bit of programming which makes any wall transparent when it would otherwise block the view.

Otherwise you get a pretty rough deal from Black Rock. The townsfolk have the nerve to charge you for your ammunition, and they insist on cluttering up the streets. In true sexist Western tradition, the womenfolk are completely useless — given half a

chance they will walk straight into you, costing you a life. At least the men in the town (complete wimps though they be) justify their miserable existences by jumping up and down pointing in the direction the nearest bandit was last seen. Shooting up the local residents may be a highly relaxing way to spend the afternoon and help you survive the kamikaze old ladies, but you get fined for doing so. The Mayor of Carmel would not approve.

When you do catch up with one of the outlaws your first accurate shot will not kill him — it just attracts his attention. The screen clears and you suddenly find yourself plunged into a face-to-face shoot-out, in which the first to draw, aim and get off his shot will win. Early in the game your opponents are easily dealt with, but after the first two they become quick draw experts.

There is no scoring as such. Every time you kill a bandit you pick up a handsome bounty, but this is usually absorbed by the costs of taking on the next opponent. The objective is just to kill as many of the outlaws as possible before you meet your inevitable demise.

*Gunfright* is good fun and very playable, but might disappoint the committed Ultimate player by being rather less complicated than some previous offerings.

**GRAPHICS** ★★☆☆

**SOUND** ★★☆☆

**VALUE** ★★☆☆

**VERDICT** ★★☆☆

## BILLIARDS

£17.45

Regular readers will recall that way back in November 1984 when we first launched *MSX Computing*, one of the first games to be reviewed was a title called *Computer Billiards* by Sony. That program was written and packaged by Konami who has now decided to launch an almost identical game under the title *Billiards*.

Only almost identical because unlike the Sony version when you switch on a watch the demo mode the cue ball doesn't get potted as it did in the original version.

Anyway enough griping and back to the game. You are presented with a standard billiard table and all the appropriate tools and its you against the computer or another opponent.

To play your shot you have to move a small white blob around the edge of the table by using either a joystick or the cursor keys.

Having used both we found that a joystick is much faster and more responsive, but does give you slightly less control. For instance you often find yourself shuffling from side to side trying to find the exact spot you want to pot the ball from.

When you hit the fire button or the space bar the cue ball heads for this mark and hits any of the balls that happen to be in the way.

The strength of your shot can be varied on a scale of one to three. This is shown by a line

of dashes. You shoot when the required number of dashes are showing.

We kept using the middle setting, which meant having to wait very patiently each time for the right dash to appear before we could take our shot. It doesn't take very long but when you are engaged in a match with the adrenalin flowing and eager to see the results of your shot, it seems like an age.

The reaction of the balls is fairly accurate, however some of the pockets look slightly oversized, but this could be the effects of staring at the screen for hours on end!

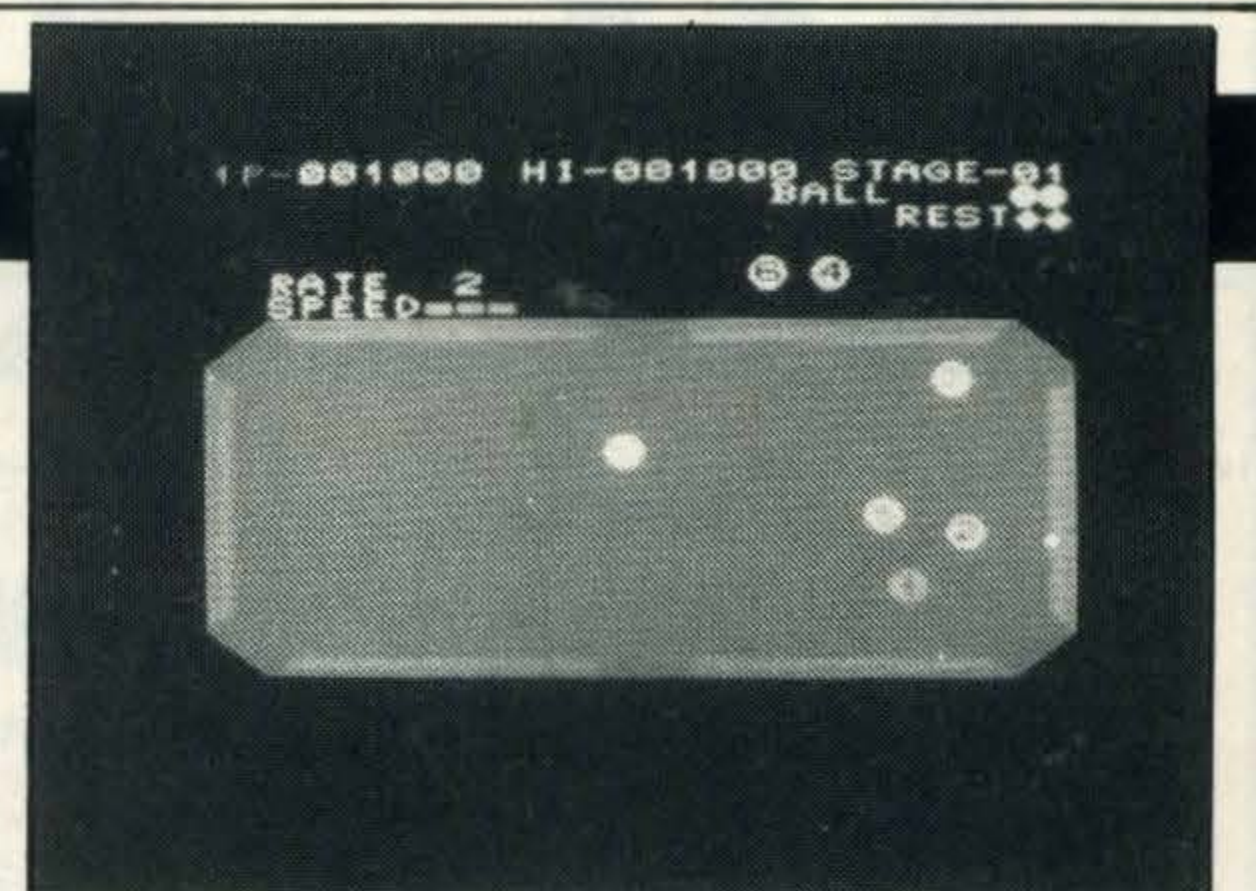
Also, some of the balls appeared to have hit the cushion yet they still went in. All the same most of the potted balls went in by sheer fluke after bouncing round the table.

Sound effects are good, there's an amazing plinking sound as the balls collide which tends to make them sound as if they are made of ultra thin aluminium.

As for the graphics well, they are plain but then a billiards table isn't exactly scenic at the best of times.

At £17.45 it's a bit on the pricey side even for a cartridge as there are several good billiards games already available on tape. Buy it but only if you are a *Pot Black* fanatic.

Overall we were disappointed with *Billiards* maybe that's because Konami is associated with more action-packed titles.



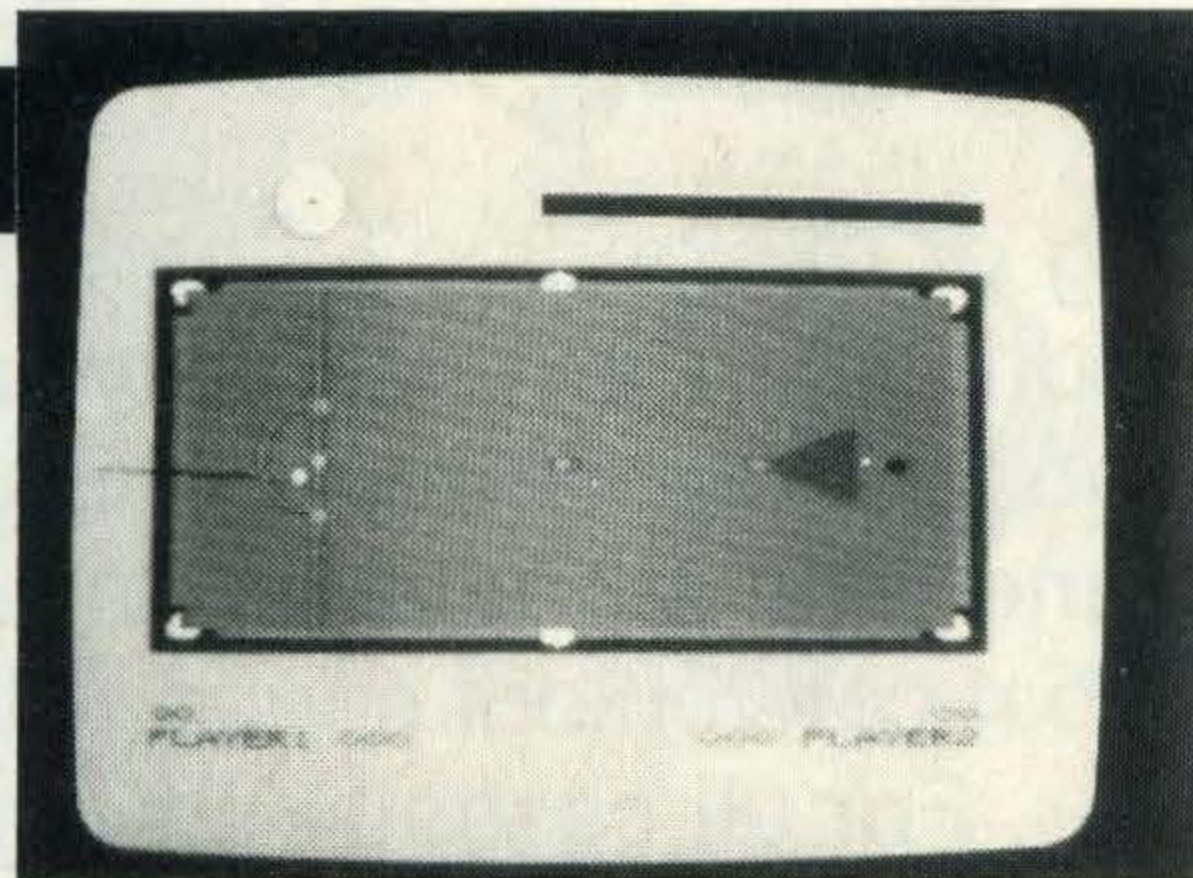
**SUPPLIER:** Konami  
01-429 2446  
**TYPE:** Simulation  
**FORMAT:** Cartridge  
**RAM NEEDED:** 32K

**GRAPHICS** ★★☆☆

**SOUND** ★★☆☆

**VALUE** ★★☆☆

**VERDICT** ★★☆☆



**SUPPLIER:** Magnificent 7  
(0293) 786083  
**TYPE:** Simulation  
**FORMAT:** Cassette



**GRAPHICS** ★★

**SOUND** ★

**VALUE** ★★★

**VERDICT** ★★

## TOURNAMENT SNOOKER

£4.95

Just in case you aren't quite comprehensively fed up with snooker on TV you can now play it on your MSX machine after the broadcasts finish. This program from Magnificent 7 lets you play a computer version of the game with a friend—there is no option to play against the machine.

Each player gets comprehensive control over the course of the cue ball. Pressing the Q key brings a line on to the screen, representing the cue. Holding down the Q key rotates the line around the cue ball, giving coarse control of its intended path. To make finer adjustments, SHIFT-Q and ALT-Q must be used to move the line clockwise or anticlockwise in very small steps.

Pressing the 'fire' key (the space bar or ENTER key depending on which player you are) twice play the shot. The power behind the stroke depends on the timing of the two key depressions, with a very rapid double tap giving the strongest effect.

Multiple collisions appear to be handled accurately, with the speeds and trajectories of the various balls calculated realistically. The program code seems to be well written, as it does not slow down significantly when suddenly thrown a large number of trigonometry problems.

This repertoire of commands should keep

inexperienced players happy, and it is certainly enough to think about as you struggle through your first few games. More advanced players can try slippery spin shots by adding spin in any amount they wish just before making the shot.

One potential problem with the game is the small size of the balls on the screen. Unlike some similar games (Konami's *Billiards* springs to mind) the balls show up as blurred dots, and unless your colour display is of a very high quality you may have difficulty deciding exactly where the centre of any given ball is supposed to be.

Although the initial aiming system is rather cumbersome, aiming your shots accurately is made much easier by a window on the screen which shows you the view 'down the cue', revealing how squarely your cue ball will hit its target and giving you a good idea of the angle at which the target ball will be deflected.

As well as the two-player game mode there is a practice mode which lets users set up any position they like on the screen and replay shots over and over.

Diehard snooker addicts will find this worth the money, but to an ordinary game player looking for something along these lines Konami's *Billiards* may prove more satisfying.

## AACKOPRESTO

£14.95

*Aackopresto* is an electronic card filing system for MSX 1 and MSX 2 machines, concentrating on ease of use and a reasonable selection of search and sorting features.

Each record in a given database can be thought of as a card in a traditional card index. Information is categorised according to various headings. For example, if you are a newsagent keeping a database of your customers you might have headings such as each person's name, address, post-code and the newspapers they order. The number of headings used to order information can be altered. Each heading is called a *field*. Although each line of information in *Aackopresto* can be made up of any number of fields of any size, there is one restriction to remember. Each line has to be less than 201 characters. There are cases where you may want to limit the type of information entered into a field. It doesn't make sense to enter a letter as part of a telephone number or a number in a name—anyone called Hen3ry (the 3 is silent) would have to be the last of the rugged individualists.

Once you've got information into *Aackopresto* you'll want to get it out again. The program allows a variety of *masks* to be used to determine which columns of a line should or should not be displayed, allowing

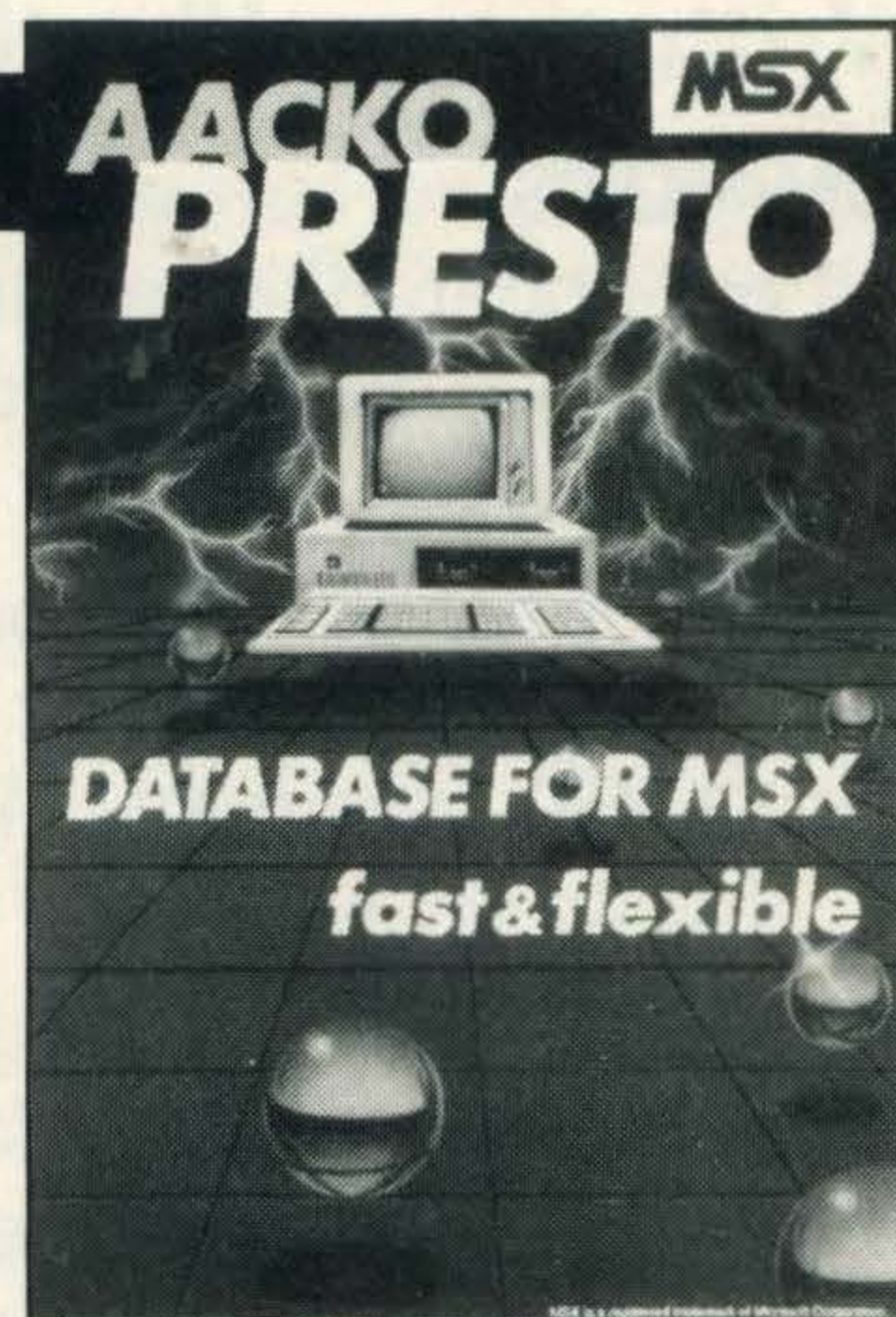
you to make specific fields of your list visible on screen. This feature is useful in designing address labels, for example.

Seven different masks are provided. The first mask displays all of the columns in a line and cannot be changed. Another two of the masks have special jobs and also cannot be changed. One displays the fields which make a record down the screen rather than across it. The other also prints fields on consecutive screen lines but displays field descriptions alongside the data.

Colour is liberally used throughout *Aackopresto* to make the user's job an easy one, the colour showing what can be done next and highlighting any warnings or errors. When stored information is being displayed the screen is green. When your entering information into *Aackopresto*, the screen is black. If the program needs to display any warning messages the screen is coloured yellow and red if you make an error.

Although offering relatively limited functions, *Aackopresto* is effective and succeeds in its aim of being easy to use.

However, if it turns out that MSX 2 has to compete on price with the cheaper IBM PC clones in the UK, companies like *Aackosoft* may have to consider sacrificing some of that ease of use in the interests of more features.



**SUPPLIER:** Nemesis  
01-741 2299  
**TYPE:** Database  
**FORMAT:** Cassette/disk

**GRAPHICS** N/A

**SOUND** N/A

**VALUE** ★★

**VERDICT** ★★

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# PROGRAMMING PITFALLS

*Miner genius Steve Mansfield  
digs into the seamier side  
of entering listings*

**A** computer without software is about as exciting as a Ford Mustang without wheels. You can admire the smooth lines but what do you actually do with it? Of course, getting hold of software isn't a problem. You can spend all that money you would otherwise waste on food and clothes on buying programs. But there is also a good supply of free software, and you're holding it right now.

Somewhere between the covers of this hallowed publication you will find page after page of listings — ranging from games, through utilities and business programmes to . . . well, back to games again. You might like to submit some programmes yourself, in which case we'll give you some tips. But if you just want to try out other readers' programs, all you have to do is type them in.

Well, perhaps that's not all. Entering listings into your micro can teach you a lot about computing, but it teaches you even more about how bad your

typing is. Unless you have a typing proficiency certificate or triple check each character as you enter it, there will almost certainly be a mistake in there somewhere. And your computer, being the dumb beast that it is will not just shrug off the mistakes, putting them down to human fallibility. Oh no. Instead it will go off in a sulk, refusing to work until you correct the error.

Occasionally the mistake will not be yours. Hard-pressed journalists, slaving to produce the magazine in the few precious minutes between working lunches and filling in expenses forms have been known to miss an error, especially as programming mistakes are notoriously hard to spot in a printed listing. All the programs printed in this magazine are tried first, of course, and then the listing is dumped to a printer. That printout is then photographically reproduced in the magazine, so there is no means for typesetting errors. Even so, the very act of printing out a listing can produce errors that don't exist in the computer. Printers can occasionally have

trouble with certain character codes.

But ruling out the possibility of intelligent and malicious intervention on the part of the printer, the major source of problems is going to be when you type the program into your machine. If you know what the main errors are, however, you can watch out for them.

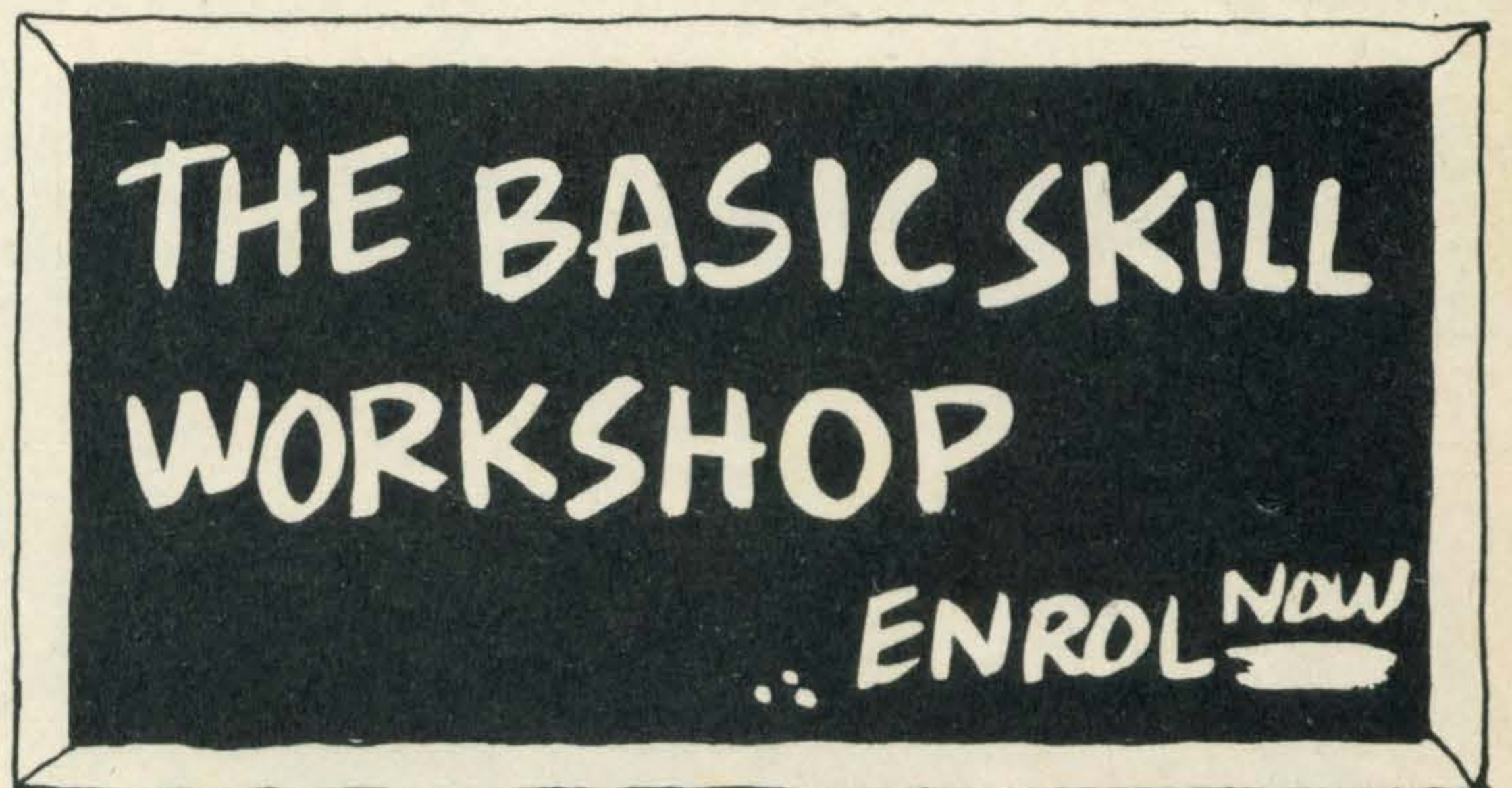
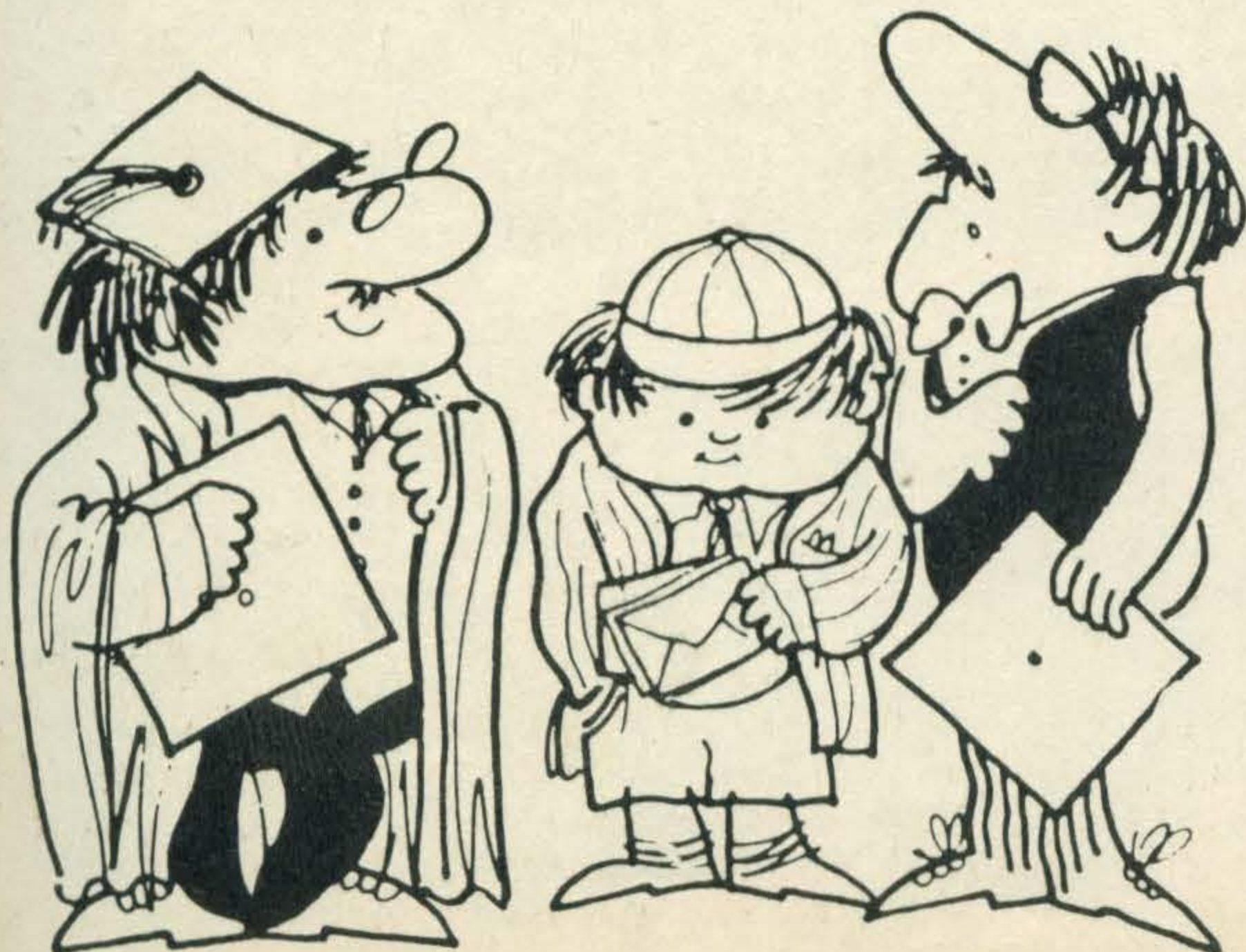
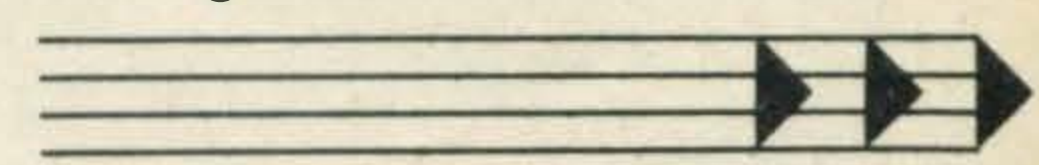
Let's run quickly through the most common errors. Mixing up letters with similar looking numbers is a frequent problem. The lower case letter l is often confused with the number 1. Similarly, upper case Os are confused with number 0, even though the latter usually has a slash through it.

## Common errors

Mistaking data entries for line numbers is another good one, worth at least a few hours of head scratching. If you have a DATA statement containing numbers which runs on to another line it's easy to read the first item of data on the new line as a program line number. If you type it in as such several things can happen. The line can

wind up elsewhere in the program and, because it has no BASIC command or statement will produce a syntax error. If, by some unimaginable but sadly not unknown fluke the line stays with the rest of the DATA lines, you could end up with an 'out of data' error. Either way you're left with a dead program.

One strange error which cropped up recently involved lines that exactly fitted across the screen. When LISTed the program looked perfect. But what had happened was that when the typist had come to the end of a program line, which was the same width as the screen, the cursor had automatically wrapped round on to the next line. The typist then proceeded to type the next program line, without typing a carriage return to end the previous one. This happened a couple of times. The result was one line where there should have been three, and that line had numbers in the middle of it which, to the computer, were pure gibberish.



By now some of you may be feeling pretty smug. I don't copy programs, you're thinking, I write them. Well that's highly commendable and we're very proud of you. But when some people decide to share their genius with the rest of the world, by sending programs in to magazines like this, problems can easily crop up even before the software gets to our offices.

The first thing to consider is whether the program is original or interesting enough to make it worth the postage. If there is ever a referendum on capital punishment the result will be a foregone conclusion judging by the number of Hangman listings that get sent in. Mind you, death by hanging often seems preferable to the death by boredom which is a real possi-

bility when faced with yet another 'draw pictures on your computer screens' utility. You know the type—where you see a joystick or cursor keys to draw lines and shapes on the screen. And the world has once and for all been saved from the curse of the Space Invaders, thank you very much.

True, it's difficult to be completely original with games. What we look for there are good graphics and smart programming — particular ways of producing reasonably fast games in BASIC. An educational slant can also help a game win a place on our pages. Incidentally, as well-written, imaginative and witty game scenario is no substitute for a good program. On the whole, any game that is good to look at,

### TYPING YOUR LISTINGS

However careful you are there will be times when PRINT ends up as PRINY and FOR becomes FIR. But there are a few precautions you can take, and a few simple debugging tips to try out before you start the long haul of bug hunting. Often as not the mistake is simple.

- \* Make sure there is no program already in the machine, as stray lines from this may survive into your listing. Always do a reset before you start typing.

- \* Put a ruler under the line you are copying. This stops you accidentally reading the wrong line.

- \* After typing in a DATA line, count the number of data items and compare it with the number in the original listing. Then do it again, counting commas.

- \* Check that every FOR command has a corresponding NEXT and that there is a RETURN at the end of each GOSUB routine.

- \* REM statements can usually be left out. But make sure there isn't command line nestling among the REMs. And if you delete whole lines make sure that there are no GOTOs or GOSUBs that point to the lines you are deleting.

- \* SAVE the program to tape or disk every ten minutes or so. This saves you having to start from scratch should the cat jump on the reset button.

- \* SAVE the completed program to tape or disk before running it. This is especially important with programs containing POKEs which, if incorrect, might cause the machine to hang up or the program to commit hara kiri. Programs that try to talk to unconnected peripherals can get equally suicidal.

- \* If you feel like modifying the program, wait until you have a copy of the original SAVED on tape or disk before you make any alterations.



Try to be original when thinking up ideas for your own programs.

entertaining and not so slow that it would put a snail to sleep stands a good chance.

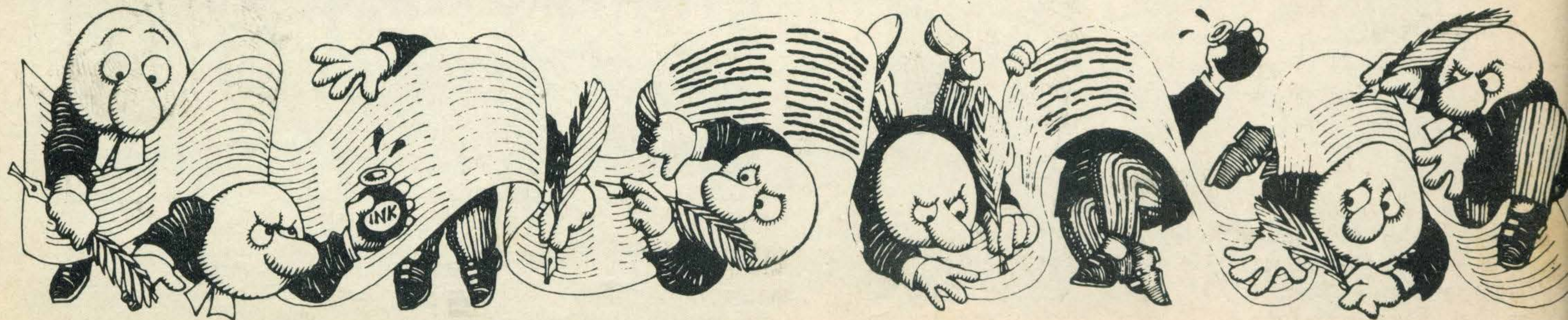
Utilities are one of the strongest areas. Having roundly slagged off drawing programs we would be prepared to eat those words if we saw a drawing program that made full use of icons, allowed replication of parts of the image, had a good stock of cross hatchings and patterns, allowed dumping to a printer and tape or disk, and so on. In other words, a program that isn't original but is very, very good.

That sort of program is likely to be quite long. That doesn't mean that short listings are out, however. Brief demonstration routines are interesting if they show something useful—like a

very compact screen dump — or previously unknown. Routines that just draw a few pretty patterns on the screen don't really fall into this category.

Business programs need to be realistic. It's all very well storing names, addresses and phone numbers on a computer. But if it takes ten minutes to find one number you're likely to think that perhaps the micro revolution wasn't such a good idea after all.

At the risk of sounding obvious, it's important that the program should actually work! You might know that names in the high score table can be only four characters long. But if the game crashes every time a player types in SIMON after yet another personal best the





**SENDING LISTINGS IN**  
 If, after all this, you are still keen to share your genius with the world — and why not — there are a few things you can do to help the program make it safely on to our pages.

\* Include a covering letter saying what the program is all about, outlining any special features and any particular requirements — if, for example, the program is for disk-based systems only, or if it needs a particular peripheral such as joysticks.

\* Include extensive documentation outlining what the program user has to do. A breakdown of the program highlighting any special features or nifty programming techniques is also a good idea, along with a list of the main variables.

\* Include a copy of the program! This should preferably be on cassette — indeed it should be on cassette several times. A slight tape fault can mean that the program won't load, so it's a good idea to record it on the tape several times. An indication (in the covering letter) of how long the program takes to load is helpful.

\* If you have a printer, send us a listing too. This helps us sort things out in the case of a tape fault. We can't accept paper listings without an accompanying cassette, though.

\* Put your name, address and telephone number, if possible a daytime one, on *everything* in the package — cassette or disk, letter, listing and any other relevant documentation.

program is likely to be consigned to the 'File and Forget' drawer. That doesn't mean we expect every eventuality to be error-trapped — just think about the more obvious possible problems and trap any predictable errors.

The program must contain

everything necessary to set up the machine. By this we mean that it should contain the necessary instructions to select the screen mode and graphics colours. Someone who is typing in your program may have forgotten to reset the screen mode, text width and colours to

the default values after running another program. Yes, we know that's their problem, but it would help if your program did all this.

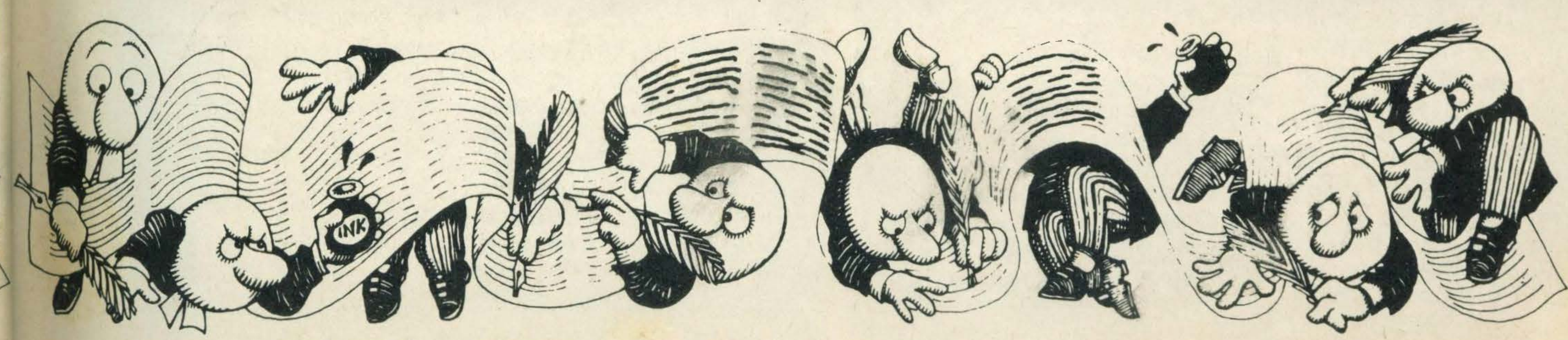
It also helps if the program is well-documented — not just with an accompanying letter but also in the program itself. Copious REM statements outlining what's going on, and areas where the program may be altered to suit individual requirements make it more interesting and more useful. But don't rely on this. Send a letter too.

You may be feeling a little put off by all the don'ts. Well, here's another one — don't be put off. We are always keen to see what our readers are up to, and something the least likely program turns out to be of interest.

**DON'T CALL US WE'LL CALL YOU!**

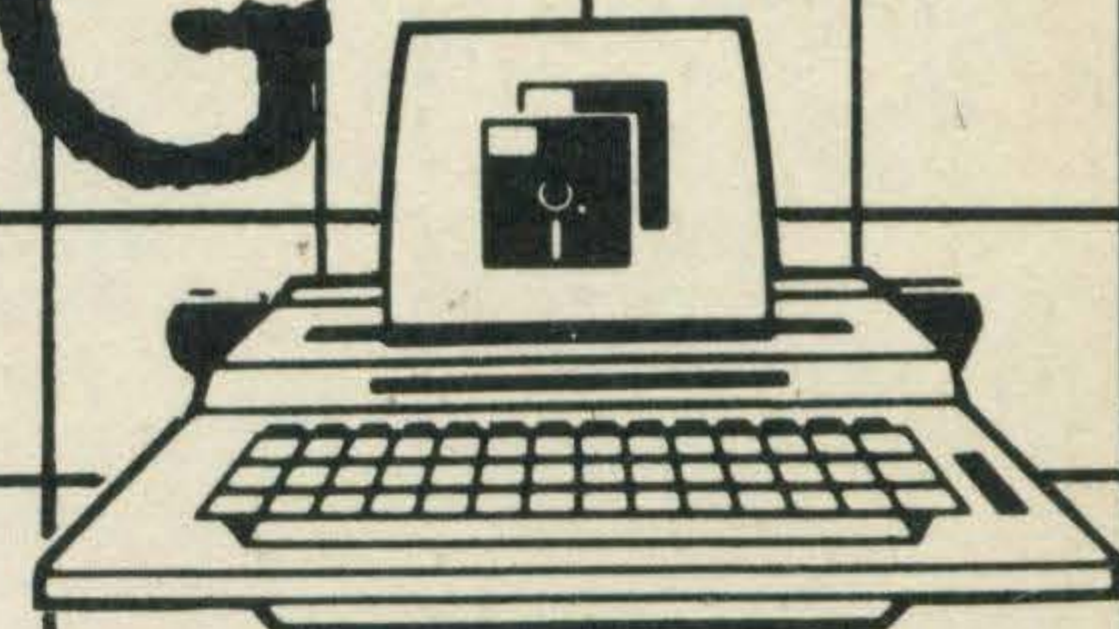
You shouldn't expect your program to appear in the magazine immediately. We receive a lot of listings of a generally high standard. Each month we try to present a reasonable cross-section of program types. Just because your program hasn't appeared does not necessarily mean that we're not interested — just that we

haven't found a place for it yet. The decision whether to use a program is made shortly before going to press, so we can't give a definite yes or no. If, for any reason, you want the program back, tell us. You should also let us know if the program is being used anywhere else. Unused programs are returned.



## GET TYPING

Feel like doing it yourself? Get your teeth into our readers' programs



### BALLOON RESCUE by David Philpott

Despite its relatively short length, this ballooning game from David Philpott of Chaddesden is one of the best designed games we have seen for a long time. You only have one control — the space bar — which operates the burner of a hot air balloon. Use the wind currents available at different altitudes to manoeuvre to the top of the skyscraper, wait for your passenger to hop in, and land gently on the other pad. Sounds easy? Well, there are a few hidden problems . . .

#### Variables

C1%, C2% CLOUD STARTING POSITION  
P1% PLANE STARTING POSITION  
P2% COPTER STARTING POSITION  
BX%, BY% BALLOON STARTING POSITION  
X1, Y1 BALLOON VELOCITY  
BL NUMBER OF BALLOONS

Line	Function
90	OPENING MUSIC
110-130	SET UP VARIABLES
160-420	MAIN GAME LOOP
430-470	SPRITE COLLISION ROUTINE
480-550	BALLOON LOST ROUTINE
560-640	LANDED AND SCORE ROUTINE
650-720	PLAY AGAIN
730-900	SET UP BACKGROUND

```

10 REM**BALLOON RESCUE**
20 REM**BY D.PHILPOTT**
30 REM**SEPTEMBER 1985**
40 OPEN"GRP:"AS#1
50 GOSUB 1070
60 COLOR1,5,1:SCREEN2,2,0
70 GOSUB 910
80 SOUND 7,60
90 PLAY"V12T17004D2.C#DFA#2.A#AA#05CO
4A#AA#DFA2.", "V10T17003DR2C#R2FR202A#
R203FR2ER2FR2CR2"
100 BL=5:GOSUB 730
110 C1%=220:C2%=40:P1%=250
120 P2%=0:KB%=0:BX%=45
130 BY%=152:X1=0:Y1=0
140 PUTSPRITE6,(129,17),10,5
150 SPRITE ON
160 IF STRIG(0)=-1 THEN U=-.2:SOUND7,
51:SOUND 6,31:SOUND 8,10:KB%=KB%+1:IF
KB%>950 THEN KB%=950

```

```

170 IF STRIG(0)=0 THEN U=.2:SOUND8,0
180 Y1=Y1+U
190 BY%=BY%+Y1
200 IF BY%>12 AND BY%<36 THEN F=-.2EL
SEIF BY%>58 AND BY%<84 THEN F=.2ELSE
F=0
210 IF F=0 AND X1>0 THEN X1=X1-.2 ELS
E IF F=0 AND X1<0 THEN X1=X1+.2
220 X1=X1+F:IF X1>3 THEN X1=3
230 IF X1<-3 THEN X1=-3
240 BX%=BX%+X1
250 FOR N=1TO25:NEXT
260 IF BY%<-5 OR BY%>160 THEN 480
270 IF BX%<5THEN BX%=250
280 IF BX%>250 THEN BX%=5
290 PUT SPRITE 5,(BX%,BY%),11,4
300 PUT SPRITE 4,(C1%,24),15,3
310 PUT SPRITE 3,(C2%,70),14,3
320 C1%=C1%-3:C2%=C2%+3
330 IF C1%<5 THEN C1%=250
340 PUT SPRITE 2,(P1%,144),10,2
350 IF SC>1500 THEN PUT SPRITE 1,(P2%
,105),15,1
360 P1%=P1%-4:IF P1%<0 THEN P1%=255
370 P2%=P2%+2:IF P2%>250 THEN P2%=5
380 ON SPRITE GOSUB430
390 SPRITE ON
400 IF M<>1 THEN GOTO 160
410 IF BY%>152 AND BY%<156 AND BX%<21
1 AND BX%>199 THEN 560
420 GOTO 160
430 SPRITE OFF
440 IF BY%>133 AND BY%<153 AND BX%+10
>P1% AND BX%<P1%+10 THEN 480
450 IF BX%<134 AND BX%>119 AND BY%>1
AND BY%<11 THEN PUT SPRITE 6,,0:M=1
460 IF BY%>93 AND BY%<115 AND BX%+10>
P2% AND BX%<P2%+10 THEN 480
470 RETURN
480 SOUND8,0:SOUND1,15:SOUND6,4:SOUND
7,54:SOUND8,16:SOUND12,12:SOUND13,0:F
ORN=1TO200:NEXT
490 SOUND 8,0:PUT SPRITE5,(BX%,BY%),1
1,6
500 BL=BL-1:IF BL=0 THEN SC=0:GOTO 65
0
510 PRESET(85,180)
520 COLOR2,2:PRINT#1,SC$
530 PRESET(89,180)
540 COLOR1,5:PRINT#1,BL
550 FOR Q=1TO500:NEXTQ:GOTO110
560 SC=SC+1000-KB%
570 PRESET(195,180)

```

```

580 COLOR2,2
590 PRINT#1,SC$
600 PRESET(195,180)
610 COLOR1,5
620 PRINT#1,SC
630 FOR Q=1TO500:NEXT
640 GOTO110
650 PRESET(30,50)
660 PRINT#1,"GAME OVER"
670 PRESET(20,66)
680 PRINT#1,"PLAY AGAIN ?      (Y/N) "
690 R$=INKEY$
700 IF R$="Y" OR R$="y" THEN 60
710 IF R$<>"N"AND R$<>"n" THEN 690
720 KEYON:SCREEN,,1:COLOR15,4,4:END
730 REM BACKGROUND
740 LINE(0,176)-(255,191),2,BF
750 CIRCLE(200,40),10,9,,,1.4
760 PAINT(200,40),9,9
770 LINE(120,26)-(144,176),1,BF
780 FOR N=0TO24 STEP 6
790 FOR M=0TO148 STEP10
800 LINE(120+N,26)-(120+N,176),14
810 LINE(120,26+M)-(144,26+M),14
820 NEXTM,N
830 LINE(48,170)-(56,176),6,BF
840 LINE(206,170)-(218,176),6,BF
850 PRESET(18,180)
860 PRINT#1,"BALLOONS ";BL
870 PRESET(150,180)
880 PRINT#1,"SCORE"
890 SC$=STRING$(6,CHR$(219))
900 RETURN
910 REM SET UP SPRITES
920 RESTORE:FOR SP=1TO6
930 SP$=""
940 FOR N= 1TO32
950 READ D$
960 SP$=SP$+CHR$(VAL("&H"+D$))
970 NEXT
980 SPRITE$(SP)=SP$
990 NEXT
1000 RETURN
1010 DATA0,0,0,0,0,F,0,0,43,FF,47,0,0
,0,0,0,0,0,0,0,FF,20,F8,C4,C4,FC,78
,0,0,0,0 'COPTER
1020 DATA0,0,0,0,1F,1F,8A,BF,FF,BF,88
,1C,08,0,0,0,0,0,0,80,6,E,FE,FC,E0,
10,0,0,0,0,0 'PLANE
1030 DATA0,0,0,0,0,1F,3F,7F,FF,FF,7F,
7F,1F,3,0,0,0,0,0,0,0,F8,FC,FE,FF,F
E,F8,F0,C0,0,0 'CLOUD
1040 DATA3,7,F,F,F,F,F,7,7,7,3,3,0,0,
3,3,80,C0,E0,E0,E0,E0,E0,C0,C0,C0,80,
80,0,0,80,80 'BALLOON
1050 DATA10,38,92,7C,38,38,28,28,0,0,
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
,0,0,0 'MAN
1060 DATA9,4,42,11,52,C,C,7,7,7,3,3,2
,7,3,1,80,8,80,24,28,60,40,C0,C0,C0,8
0,80,0,0,80,0 'POPPED BALLOON
1070 REM OPENING SCREEN
1080 KEYOFF:SCREEN0:COLOR1,5
1090 LOCATE10,5
1100 PRINT"BALLOON  RESCUE";
1110 LOCATE10,7
1120 PRINT"BY  D. PHILPOTT";

```

```

1130 LOCATE5,11
1140 PRINT"PRESS (I) FOR INSTRUCTIONS
";
1150 LOCATE5,13
1160 PRINT"PRESS (P) TO PLAY";
1170 R$=INKEY$
1180 IF R$="I"OR R$="i"THEN1200
1190 IF R$="P"OR R$="p"THEN60 ELSE117
0
1200 SCREEN0:COLOR1,5
1210 LOCATE10,1:PRINT"BALLOON  RESCUE
"
1220 LOCATE0,5
1230 PRINT"You have to rescue the man
by flying the balloon near to him."
1240 PRINT"Then land the balloon on t
he right- hand base to score points.
"
1250 PRINT:PRINT"To gain height press
the spacebar."
1260 PRINT:PRINT"To lose height relea
se the spacebar."
1270 PRINT:PRINT"To move across the s
creen, fly into one of the airstream
s indicated by the clouds."
1280 PRINT:PRINT"Don't fly too high!"
1290 PRINT:PRINT"          PRESS (P) T
O PLAY"
1300 GOTO1170

```

## **MAZES OF CARDON** *by Alexander Bean*

A maze game with a difference all the way from Walthamstow. Work your way down to the bottom of the maze, taking care not to encounter a monster or an explosive square. As you move, you leave a trail of bricks, so walling yourself in is a possibility. When (or if) you get to the bottom, you enter a different maze.

Alex points out that you must ensure that lower case x and y characters are used in the long print statements. It's also important to get the number of spaces right, otherwise you may end up with an impossible maze. Adding your own stages should be pretty straightforward.

```

10 REM MAZES OF CARDON BY ALEX BEAN
20 CLEAR 500
30 ON STOP GOSUB 1780:STOPON
40 N=RND(-TIME):CO=8192
50 DEFUSR0=&H41:DEFUSR1=&H44
60 SCREEN1,0:WIDTH 32
70 KEYOFF
80 LI=3:TI=999
90 GOSUB 630:GOSUB 710
100 M(0)=9:N(0)=10
110 M(1)=9:N(1)=20
120 M(2)=19:N(2)=5
130 M(3)=19:N(3)=22
140 U=USR1(0)
150 ON RO GOSUB 920,1080,1240,750,140
0,1530
160 V=6223:VPOKE V,96
170 CR(0)=8:CR(1)=13
180 CR(2)=8:CR(3)=1
190 FOR B=0 TO 3:PUTSPRITE B,(N(B)*8,

```

# LISTINGS

```

M(B)*8-1),CR(B),0:NEXT B
200 S=STICK(0)
210 X=32*(S=1)-(S=3)-32*(S=5)+(S=7)
220 IFS<>0 THEN SC=SC+1
230 IFS=0 THEN290
240 W=VPEEK(V+X)
250 IFW=120 OR W=121 THEN290
260 IFW=122 THEN540
270 VPOKE V,121:V=V+X:VPOKE V,96
280 IFV=>6860 THEN470
290 IFBB=0 THEND=D+1:IFD=4 THENBB=1
300 IFBB=1 THEND=D-1:IFD=0 THENBB=0
310 TI=TI-1:IFTI=0 THEN GOTO 880
320 IFSTRIG(0) THEN540
330 IFVPEEK(32*M(0)+N(0)+6144)=96 THE
N540
340 IFVPEEK(32*M(1)+N(1)+6144)=96 THE
N540
350 IFVPEEK(32*M(2)+N(2)+6144)=96 THE
N540
360 IFVPEEK(32*M(3)+N(3)+6144)=96 THE
N540
370 A=RND(-TIME)
380 A=INT(RND(1)*6)+1:GOTO490
390 P=VPEEK(32*(M(D)+H)+N(D)+6+6144)
400 IFP=96 THEN540
410 IFP>119THEN460
420 M(D)=M(D)+H:N(D)=N(D)+G
430 PUTSPRITE D,(N(D)*8,M(D)*8-1)
440 LOCATE 16,0:PRINT SC
450 LOCATE 26,0:PRINT TI
460 GOTO 200
470 RO=RO+1:SC=SC+50:V=6191:R2=1:ON R
0 GOSUB920,1080,1240,750,1400,1530
480 V=6223:VPOKE V,96:GOTO200
490 ON A GOTO 500,510,500,510,520,530
500 G=1:H=0:GOTO390
510 G=-1:H=0:GOTO390
520 H=-1:G=0:GOTO390
530 H=1:G=0:GOTO390
540 REM
550 SOUND 6,31:SOUND 7,1:SOUND 8,16
560 SOUND 12,100:SOUND 13,8
570 FOR T=1 TO 600:NEXT T
580 SOUND 8,0
590 VPOKE V,32:LI=LI-1:FOR TL=1 TO 25
0:NEXT TL:LOCATE 6,0:PRINT LI
600 FOR TL=1 TO 500:NEXT TL
610 FOR S=0 TO 2:PUTSPRITE S,(-24,0):
NEXT S:IFLI=0 THEN880
620 GOTO140
630 FOR Q=1 TO 4:H$="":C=0:READ M,H$
640 FOR W=1 TO LEN(H$) STEP 2
650 VPOKE M*8+C,VAL("&H"+MID$(H$,W,2)
):C=C+1:NEXT W,Q
660 DATA 122,FF81bdA5A5A5bdFF,121,3C6
2FDFDFDFD7E3C,96,183c183C5A182466,120
,7E83FDFDFDFDFD7E
670 H$(0)="3C7EDBFFE77E5AA5"
680 FOR Q=0 TO 1:SP$=""
690 FOR W=1 TO LEN(H$(Q)) STEP 2
700 SP$=SP$+CHR$(VAL("&H"+MID$(H$(Q),
W,2))):NEXT W:SPRITE$(Q)=SP$:NEXTQ:RE
TURN
710 U=USR0(0):COLOR1,15,15
720 VPOKE CO+12,96:VPOKE CO+12,64
730 VPOKE CO+15,&H47

```

```

740 REM SCREENS
750 LOCATE 0,22
760 IF R2=1 THEN N(0)=10:M(0)=9:N(1)=
20:M(1)=9
770 IF R2=1 THEN N(2)=5:M(2)=19:N(3)=
22:M(3)=19
780 PRINT"XXXXXXXXXXXXXXXXXXXXXXXXXX
XXX X
X XXXXXXXX XXXXXXXX XXXXXXXX X"
790 PRINT" X
X XXXXX XXXXXXXX XXXXXXXX XXXXX
X
X"
800 PRINT" X XXXXXXXXXXXX X X XXXXXXXXXXX
X X X XXXXXXXXXXXX X X XXXXXXXXXXXX X
X X X
X"
810 PRINT" XXXXX XXXXXXXX XXXXXXXX XX
XXX X
XXXXXXXXXXXXXXXXXXXXXXXXX XXXXXX"
820 PRINT" X X
X X X XXXXXXXXXXXXXXX XXXXXXXXXXXX X
XXX XXX"
830 PRINT" X XXX XXXXXXXXXXXXXXXXXXXX XX
X X X XXX XXXXXXXXXXXXXXXXXXXX XXX X
X
X"
840 PRINT" X XX XX XXXXXX XXXXXX XX X
X X XXXXXX XXXXXXXXXXXX
X XX XX X
X"
850 PRINT" XXXXXXXXXXXXXXXXXXX XXXXXXXXXXX
XXX"
860 GOSUB1690
870 RETURN
880 COLOR 7,1,1:CLS:LOCATE 7,5:PRINT"
THE END OF THE GAME!"
890 FOR B=0 TO 3:PUTSPRITE B,(255,0):
NEXT B
900 LOCATE 2,18:PRINT"PRESS SPACE-BAR
TO PLAY AGAIN"
910 IFSTRIG(0) THEN10 ELSE GOTO910
920 N(0)=2:M(0)=4:N(1)=28:M(1)=4
930 N(2)=11:M(2)=17:N(3)=18:M(3)=17
940 LOCATE 0,22
950 PRINT"XXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXX"
960 PRINT" X
X XXXXXX XXXXXXXXXXXXXXXXXXX XXXXXX
X
X"
970 PRINT"XXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXX X
X XX XX XX X X X X"
980 PRINT" X X X X X X X X X X
X X X X X X X X X X
X X X X X X X X X X
990 PRINT" X X X X X X X X X X
X X X X X X X X X X
X X X X X X X X X X
1000 PRINT" X X X X X X X X X X
X X X X X X X X X X
X X X X X X X X X X
1010 PRINT" X X X X X X X X X X
X X X X X X X X X X
X X X X X X X X X X
1020 PRINT" X Z Z Z Z
X X Z Z Z X
XXXXXXXXXXXXXXXXXXXXXXXXX"
1030 GOSUB1690
1040 RN=RND(-TIME):RN=INT(RND(1)*3)
1050 IFRN<2 THEN VPOKE 6263,122

```

```

1060 IFRN=2 THEN VPOKE 6247,122
1070 RETURN
1080 N(0)=2:M(0)=4:N(1)=28:M(1)=4
1090 N(2)=6:M(2)=17:N(3)=24:M(3)=17
1100 LOCATE 0,22
1110 PRINT"XXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXX"
1120 PRINT" X
X XXXXXXXX XXXXXXXXXXXXXXX XXXXXXXX
XZ X XXXXXXXXXXXXXXX X ZX"
1130 PRINT" XZ XX X X XX
ZX XZ XX XX XX XX ZX
XXXXXXXX X XX X XX X XXXXXXX"
1140 PRINT" X X XXXXXXXX X
X XXXXXXXX X XXXXX X XXXXXXXX
XZ X X XXXXXXXX X X ZX"
1150 PRINT" XZ X XXXXXXXX X
ZX XZ XXXX XXXXXXXX XXXX ZX
XXXXXXXXXZX XZXXXXXXXXXX"
1160 PRINT"XXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXX XXXXXXXX XXXXXXXX
XZ X XXXXXXXXXXXXXXX X ZX"
1170 PRINT" XZ XXXXXXXXXXXXXXXX
ZX XZ X XXXXXXXXXXXXXXXX X ZX
XXXXXXXX XXXXXXXXXXXXXXXX XXXXXXX"
1180 PRINT" X X X X XXXXXXXXXXXXXXXX X X
X X X X X X X X X X X X
XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXX"
1190 GOSUB1690
1200 RN=RND(-TIME):RN=INT(RND(1)*3)
1210 IFRN<2 THEN VPOKE 6832,122
1220 IFRN=2 THEN VPOKE 6830,122
1230 RETURN
1240 N(0)=22:M(0)=21:N(1)=23:M(1)=8
1250 N(2)=9:M(2)=8:N(3)=22:M(3)=14
1260 LOCATE 0,22
1270 PRINT"XXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXX"
1280 PRINT" X
X X XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX X
X X X X"
1290 PRINT" X X XXXXXXXXXXXXXXX XXXXXXXX
XX X X X X X X
X XXXXXXXXXXXXXXX XXXXXXX"
1300 PRINT" X X X X
X X X X X X X X
XXX XXXXXXXXXXXXXXX XXXXXXX"
1310 PRINT" X
X X XXXXXXXXXXXXXXX X X X X X X
X XXXXXXXXXXXXXXX X X X X X X"
1320 PRINT" X XZXZXZXZZZXZ
ZXZX XXXXXXXX XXXXZXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXX"
1330 PRINT" X
X XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX XX
X X"
1340 PRINT" XX XXXXXXXXXXXXXXX XXXXXXXX
XXXX X X
XXXXXXXXXXXXXXXXXXXX XXXXXXX"
1350 GOSUB1690
1360 RN=RND(-TIME):RN=INT(RND(1)*3)
1370 IFRN<2 THEN VPOKE 6490,32
1380 IFRN=2 THEN VPOKE 6492,32
1390 RETURN
1400 N(0)=15:M(0)=12:N(1)=15:M(1)=4
1410 N(2)=3:M(2)=19:N(3)=27:M(3)=19

```

```

1420 LOCATE 0,22
1430 PRINT"XXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXX"
1440 PRINT" XZXZXZXZXZXZXZX XZXZXZXZXZ
XZX XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX
X X"
1450 PRINT" XX XXXXXXXXXXXXXXX XXXXXXXX
X XX XZ XXXXXXX XXXXXXX ZX
XX X XXXX XXXX X XX"
1460 PRINT" XXXXXXXX X XZZ ZZX X XXX
XXXX XZZZZZX X XZX ZX X XZZZZZX
XXXXXXXX X X X X X XXXXXXX"
1470 PRINT" X X XXXX XXXX X
X XX XXXXXXX X XX XX X XXXXXXX XX
X X XXXX XXXX X X"
1480 PRINT" XXXXXXXX X X X X X X XXX
XXXX XZZZZZX X XX X XX X XZZZZZX
XXXXXXXX X X XXX X X XXXXXXX"
1490 PRINT" XZZZ X X XXXXX X X
ZZZX XXXX XXXX X XXX X XXXX XXXX
X X XX X XX X X"
1500 PRINT" X XXXXXXX XXX XXX XXXXX
XX X X X XX XX X X
XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXX"
1510 GOSUB1690
1520 RETURN
1530 FOR B=0 TO 3:PUTSPRITE B,(C(B),R
(B)):NEXT B
1540 FOR B=1 TO 5:FOR T=5 TO 9
1550 FOR R=1 TO 50:NEXT R:COLOR T,T,T
1560 NEXT T,B
1570 COLOR 15,4,4
1580 LOCATE 0,22
1590 PRINT"WELL DONE YOU FOUND THE WA
Y OUT!"
1600 PRINT:PRINT
1610 FOR R=1 TO 8:FOR T=0 TO 31
1620 LOCATE T,22:PRINT"X"
1630 NEXT T,R
1640 LOCATE 0,25
1650 LOCATE 8,23:PRINT"YOUR SCORE=";S
C
1660 PRINT:PRINT:PRINT:PRINT:PRINT
1670 PRINT:PRINT
1680 END
1690 LOCATE 1,0:PRINT"LIVES";LI
1700 D#=STRING$(25,32)
1710 LOCATE 8,0:PRINT D#
1720 LOCATE 10,0:PRINT"SCORE=";SC
1730 LOCATE 21,0:PRINT"TIME=";TI
1740 FOR B=0 TO 3
1750 PUTSPRITE B,(N(B)*8,M(B)*8-1)
1760 NEXT B
1770 RETURN
1780 COLOR 15,4,4:SCREEN 0
1790 END

```

# LISTINGS

## SOS NORTH SEA by John Bruce

Living in Aberdeen, John sees a lot of helicopters flying to and from oil rigs, so instead of complaining about the noise, he has recreated the sound in this game. Pick up the two survivors from the stricken ship and land them on the helipad. Unpredictable gusts of wind make flying difficult. You need a joystick to play

```
2 GOSUB 5000
4 FOR I=6 TO 13
5 READ J
6 SOUND I,J
7 NEXT I
8 DATA 31
9 DATA 7
10 DATA 16,16,16
11 DATA 71,2
12 DATA 12
14 COLOR,5,4
16 SCREEN 2,2
18 GOSUB 640
20 A$=CHR$(&HFF)+CHR$(&H1)+CHR$(&H1)+
CHR$(&H3)+CHR$(&H7)+CHR$(&HF)+CHR$(&H
1C)+CHR$(&H18)
21 B$=CHR$(&H18)+CHR$(&H1C)+CHR$(&HF)
+CHR$(&HF)+CHR$(&H8)+CHR$(&H8)+CHR$(&
H18)+CHR$(&H18)
22 C$=CHR$(&HFF)+CHR$(&H80)+CHR$(&H80)
+CHR$(&HC0)+CHR$(&HE0)+CHR$(&HF0)+CH
R$(&H38)+CHR$(&H18)
23 D$=CHR$(&H18)+CHR$(&H38)+CHR$(&HF0)
+CHR$(&HF0)+CHR$(&H10)+CHR$(&H10)+CH
R$(&H18)+CHR$(&H18)
24 SPRITE$(1)=A$+B$+C$+D$
25 E$=CHR$(&H1F)+CHR$(&H7F)+CHR$(&HFF)
+CHR$(&H7F)+CHR$(&H3F)+CHR$(&H3F)+CH
R$(&H3F)+CHR$(&H1F)
26 F$=CHR$(&H1F)+CHR$(&H3F)+CHR$(&H3F)
+CHR$(&H7F)+CHR$(&HFF)+CHR$(&H7F)+CH
R$(&H3F)+CHR$(&H1F)
27 G$=CHR$(&HC0)+CHR$(&HF8)+CHR$(&HFF)
+CHR$(&HFF)+CHR$(&HFF)+CHR$(&HFE)+CH
R$(&HFC)+CHR$(&HF8)
28 H$=CHR$(&HC0)+CHR$(&HF8)+CHR$(&HFF)
+CHR$(&HFF)+CHR$(&HFF)+CHR$(&HFE)+CH
R$(&HFC)+CHR$(&HF8)
29 SPRITE$(3)=E$+F$+G$+H$
30 SPRITE$(4)=CHR$(&H18)+CHR$(&HF7)+C
HR$(&HAB)+CHR$(&HFF)+CHR$(&HFF)+CHR$(&
H3F)+CHR$(&H3)+CHR$(&H0)
33 X=20:Y=5:M=30:N=90:N2=140
35 A=160:B=122:PM=2:PN=1:QM=-1:QN=1
40 Z=1:V=1
50 T=STICK(1)
60 IF T=3 THEN Z=Z+.2
70 IF T=7 THEN Z=Z-.2
75 X=X+Z
80 IF T=1 THEN V=V-.1
85 IF T=5 THEN V=V+.1
90 Y=Y+V
100 LET A=A-1
120 PUT SPRITE 1,(X,Y),10,1
125 PUT SPRITE2,(M,N),14,1
130 IF X>230 OR X<19 THEN LET Y=Y+5
140 IF Y>180 THEN GOTO 500
145 IF X>172 AND Y>66 AND Y<70 THEN G
```

```
OTO 500
146 IF X>170 AND Y>64 THEN LET Y=Y+5
147 IF Y>74 AND Y<80 THEN LET X=X-2
148 IF Y>124 AND Y<140 THEN LET X=X-2
150 IF X>46 AND X<48 AND Y>165 AND Y<
168 THEN GOSUB 2000
155 IF X>142 AND X<145 AND Y>170 THEN
GOSUB 3000
160 IF X>192 AND X<196 AND Y>60 AND Y
<63 THEN GOSUB 1000
170 ON SPRITE GOSUB 400
175 SPRITE ON
200 PUT SPRITE 3,(A,B+66),4,3
210 PUT SPRITE 4,(A-80,B+65),4,3
220 PUT SPRITE 5,(A+90,B+66),4,3
230 PUT SPRITE 6,(A-100,B-125),14,3
240 PUT SPRITE 7,(A-84,B-124),15,3
250 PUT SPRITE 8,(A,B-125),15,3
255 PUT SPRITE9,(66,178),15,4
260 M=M+PM:N=N+PN:N2=N2+QN
270 IF M<320RM>160 THEN PM=-PM
280 IF N<680RN>155 THEN PN=-PN
290 IF N2<680RN2>155 THEN QN=-QN
300 GOTO 50
400 SPRITE ON
405 SOUND 2,127:SOUND 7,30:SOUND 8,11
:SOUND 9,7:SOUND 10,11
410 N=N+.3
420 Y=Y+.4
430 PUT SPRITE 1,(X,Y),10,1
440 PUT SPRITE 2,(M,N),14,1
450 IF Y>180 THEN GOTO 500
460 GOTO 410
500 PLAY""
510 FOR I=9TO6 STEP-1
515 FOR K=1TO15
520 CIRCLE(X,Y),K,I,,.1.4
530 NEXT K:NEXT I
630 GOTO 520
640 PSET(0,2):DRAW"C12F18D6L14U18"
650 PAINT(5,30),12
660 PSET(0,46):DRAW"C1R18D113F10D15F1
5"
670 PSET(247,80):DRAW"C9R8"
675 PSET(250,55):DRAW"C9R5"
680 PAINT(3,60),1
685 PSET(10,50):DRAW"C15D60F4G6D50E8F
8D13G10U28G10"
686 PSET(10,50):DRAW"C15E2"
690 CIRCLE(50,2),25,15,,.2
695 CIRCLE(170,2),30,15,,.2
700 PAINT(50,2),15
705 PAINT(150,2),15
710 CIRCLE(110,2),30,15,,.2
715 PAINT(110,2),15
720 CIRCLE(220,2),30,15,,.2
725 PAINT(220,2),15
750 PSET(180,80):DRAW"C1R40G10H10G10H
10"
760 PSET(180,78):DRAW "C1R40"
770 PSET(220,78):DRAW"C1F10"
780 LINE(252,0)-(244,90),9:LINE(242,9
0)-(247,90),9
790 LINE(255,0)-(247,90),9:LINE(250,0
)-(255,0),9
795 PAINT(245,85),9
800 LINE(180,100)-(255,100),9
810 LINE(180,100)-(180,90),9
```



# BUGBUSTERS

by Hugh Creed

You keep asking for shorter listings, but still with plenty of action. Good job Hugh from Lancaster came up with a couple for this issue. In this game, as Boris the Spider you have to stay alive by catching enough of the flies which cross your web. Unfortunately the web has iced up (in June???) making it difficult to stay on course. Movement is by the cursor keys. Last long enough and you could be Bugbuster of the Year.

## Variables

FO	FOOD
AM	TIME
A	SPIDER'S X COORDINATE
B	SPIDER'S Y COORDINATE
C	FLY'S X COORDINATE
D	FLY'S Y COORDINATE
E	FLY DIRECTION
CC	FLY X ACCELERATION COORD
DC	FLY Y ACCELERATION COORD
AC	SPIDER X ACCELERATION COORD
BC	SPIDER Y ACCELERATION COORD

```

820 LINE(180,90)-(255,90),9
825 LINE(200,100)-(210,120),9
830 PAINT(250,95),9
840 LINE(210,120)-(255,120),9
850 LINE(210,120)-(210,200),9
860 LINE(230,120)-(230,200),9
870 LINE(236,120)-(236,200),9
875 LINE(230,120)-(236,120),9
880 PAINT(220,140),9
890 PAINT(210,110),9
900 PSET(60,200)
910 DRAW"C12U20F20U"
920 PSET(60,180):DRAW"C12G4M60,200"
930 PAINT(62,190),12
940 PSET(180,102):DRAW"C12D80F3D4L4U4
E3"
950 PSET(231,200):DRAW"C1U78R5D78"
960 PAINT(233,190),1
965 PSET(60,180):DRAW"C9U4F1"
970 PSET(150,194):DRAW"C11U4R7D4L7"
980 PSET(153,190):DRAW"C10U4F1"
990 RETURN
1000 PSET(207,76):DRAW"C15U4F1"
1010 PSET(210,76):DRAW"C10U4F1"
1015 CIRCLE(50,50),10,15
1020 PAINT(50,50),15
1025 PLAY""
1030 FORI=0TO180:BEEP:NEXTI
1100 GOTO 6000
2000 PSET(60,180):DRAW"C5U4F1"
2010 RETURN
3000 PSET(153,190):DRAW"C5U4F1"
3010 RETURN
5000 CLS
5010 SCREEN0
5020 LOCATE 8,0:PRINT"WWW SOS NORTH S
EA WWW"
5030 LOCATE 4,2:PRINT"* BY JOHN BRUCE
ABERDEEN *"
5040 LOCATE1,4:PRINT"AN OIL RIG AND S
UPPLY SHIP DRIVEN ASHORE BY STORM. AS
PILOT OF THE YELLOWHELICOPTER,YOUR D
UTY IS TO RESCUE THE LAST TWO SURVIVO
RS OF THE SHIPS CREW ,ONE ON THE SHIP
,ONE ON THE LIFERAFT.
5050 LOCATE 1,10:PRINT" GUSTING WIND
MAKES FLYING HAZARDOUS.CONTACT WITH W
AVE TOPS OR ANY OTHER SOLID OBJECTS I
NCLUDING THE GREY CHOPPER USUALLY PRO
VES FATAL.
5060 LOCATE 1,15:PRINT"YOU WILL HAVE
TO FLY CLOSE ENOUGH TO ALLOW SURVIVOR
S TO JUMP ABOARD.LAND THEM SAFELY ON
THE CENTRE OF THE RIGS HELEPAD
5065 LOCATE 4,19:PRINT"CONTROL WITH J
OYSTICK."
5070 LOCATE 4,21:PRINT"PRESS SPACE BA
R TO START"
5080 A$=INKEY$:IFA$<>" THENGOTO5080
5100 RETURN
5200 CLS
5210 SCREEN0
5220 LOCATE 2,2:PRINT"AFTER YOU HAVE
RECOVERED AND TAKEN SOME FLYING LESS
ONS PRESS SPACE BAR.
5230 A$=INKEY$:IF A$<>" THENGOTO 523
0
5240 RUN
6000 SCREEN0
6010 LOCATE8,8:PRINT"WELL DONE"

```

```

10 COLOR15,0,0:KEYOFF
20 GOSUB1080
30 SCREEN2,2,0
40 GOSUB1000
50 '*SCREEN DISPLAY*
60 FORM=0TO200STEP20
70 LINE(M,0)-(200-M,191),14
80 NEXT
90 FORN=0TO190STEP20
100 LINE(0,N)-(200,191-N),14
110 NEXT
120 LINE(201,0)-(256,191),4,BF
130 FORO=20TO100STEP20
140 CIRCLE(100,95),0,14
150 NEXT
160 FO=600
170 AM=0:CH=1
180 CX=15:FOR S=1TO190STEP13:LINE(225,
S)-(231,S+12),CX,BF: CX=CX-1:NEXT
190 OPEN"grp:"FOROUTPUTAS#1
200 PRESET(208,24):PRINT#1,"T F"
RESET(208,32):PRINT#1,"I O":PRESET
(208,40):PRINT#1,"M O":PRESET(208,
48):PRINT#1,"E D":CLOSE#1
210 '*SET UP VARIABLES*
220 R=RND(-TIME)
230 A=20:B=20
240 MI=113
250 T=RND(-TIME)
260 C=INT(RND(T)*200)
270 D=INT(RND(T)*191)
280 E=INT(RND(T)*8)+1
290 IFE=8ORE=10RE=2THENDC=-2
300 IFE=20RE=30RE=4THENCC=2
310 IFE=40RE=50RE=6THENDC=2
320 IFE=60RE=70RE=8THENCC=-2
330 '*MAIN LOOP*
340 SOUND6,2:SOUND8,8:SOUND7,55
350 PUTSPRITE1,(A,B),8,1
360 PUTSPRITE2,(C,D),7,2

```

# LISTINGS

```
370 C=C+CC:D=D+DC
380 J=STICK(V)
390 K=STRIG(V)
400 \AM=AM+.25
410 IFJ=8ORJ=1ORJ=2THENBC=BC-.5
420 IFJ=2ORJ=3ORJ=4THENAC=AC+.5
430 IFJ=4ORJ=5ORJ=6THENBC=BC+.5
440 IFJ=6ORJ=7ORJ=8THENAC=AC-.5
450 FO=FO-5
460 IFK=-1THENAC=AC\2:BC=BC\2:FO=FO-5
470 A=A+AC:B=B+BC
480 IFFO\100=INT(FO\100)THENGOSUB600
490 SPRITEON
500 ONSPRITEGOSUB620
510 IFCV=1THENCV=0:GOTO250
520 IFC>184ORC<0ORD>183ORD<0THENGOTO2
60
530 IFA>184THENA=0
540 IFA<0THENA=184
550 IFB>183THENB=0
560 IFB<0THENB=183
570 IFFO<1ORAM>183THENFORTG=15TO0STEP
-.025:SOUND6,29:SOUND8,TG:SOUND7,55:N
EXT:SOUND7,56:GOTO890
580 GOTO350
590 '*MOVE TIME & FOOD SPRITES*
600 MX=180-((FO/100)*13):PUTSPRITE3,(
236,MX),8,4:PUTSPRITE4,(206,AM),2,5:R
ETURN
610 '*ADDS ON FOOD*
620 BEEP:IFFO<1500THENFO=FO+100
630 IFFO>1450THENGOTO660
640 GOTO250
650 '*WINNING SEQUENCE*
660 SCREEN2:SOUND8,0
670 LINE(96,124)-(112,140),10,BF
680 LINE(112,108)-(128,140),10,BF
690 LINE(128,116)-(144,140),10,BF
700 PUTSPRITE1,(96,106),2,1
710 PUTSPRITE2,(129,98),5,1
720 FORAW=0TO90:PSET(119,AW),14
730 PUTSPRITE3,(112,AW),8,1
740 NEXT
750 LINE(119,0)-(119,90),1
760 PRESET(48,160):OPEN"grp:"FOROUTPU
TAS#1
770 PRINT#1,"BUGBUSTER OF THE YEAR!":
CLOSE#1
780 SX=92:MP=1:FORDS=1TO50
790 PUTSPRITE3,(112,SX),8,1
800 IFMP=1THENSX=SX-2ELSESX=SX+2
810 SOUND6,29:SOUND8,12:SOUND7,55
820 FORTH=1TO60:NEXT
830 IFSX=94THENMP=1
840 IFSX<90THENMP=0
850 NEXT
860 SOUND7,56:SOUND8,0
870 RUN
880 '*LOSING SEQUENCE*
890 SPRITEOFF:SCREEN2:COLOR10:FORAZ=1
TO32:F=F+CHR$(255):NEXT:SPRITE$(4)=
F$
900 LINE(128,0)-(128,31),14
910 PUTSPRITE9,(120,32),8,1
920 PUTSPRITE7,(120,144),10,4
930 PUTSPRITE8,(120,88),10,3
```

```
940 OPEN"grp:"FOROUTPUTAS#1:PRESET(12
0,160):PRINT#1,"[[["
950 PLAY"v15o1c1.V8":FORSC=32TO144:PU
TSPRITE9,(120,SC),8,1:FORHJ=1TO12:NEX
T:NEXT
960 FORLE=88TO128:PUTSPRITE8,(120,LE)
,10,3:NEXT:FORVR=12TO0STEP-.05:SCUND6
,20:SOUND8,VR:SOUND7,55:NEXT:SOUND7,5
6
970 PRESET(96,170):PRINT#1,"GAME OVER
":CLOSE#1
980 FORNJ=1TO1000:NEXT:RUN
990 '*DESIGN SPRITES*
1000 RESTORE1020:FORZ=1TO5:FORX=1TO32
:READQ:S=S+CHR$(Q):NEXT:SPRITE$(Z)=
S$:S$="":NEXT
1010 RETURN
1020 DATA0,80,80,120,107,175,175,167,
159,199,127,63,63,255,135,129,0,16,20
,20,164,237,233,235,218,246,252,252,2
52,255,225,129
1030 DATA0,17,19,11,39,57,15,7,9,19,1
01,77,72,112,0,0,0,136,200,216,180,25
2,224,184,204,198,163,145,13,6,0,0
1040 DATA0,0,0,0,0,0,0,0,0,0,15,12,63
,127,255,0,0,0,0,0,0,0,0,0,0,240,48
,252,254,255,0
1050 DATA0,1,3,7,15,31,63,127,255,127
,63,31,15,7,3,1,0,0,0,0,0,0,0,0,0,0
,0,0,0,0,0
1060 DATA0,0,0,0,0,0,0,0,0,0,0,0,0,0,
0,0,128,192,224,240,248,252,254,255,2
54,252,248,240,224,192,128,0
1070 '*OPENING SEQUENCE*
1080 SCREEN2,0,0:STRIG(0)ON:ONSTRIGGO
SUB1380
1090 RESTORE1100:FORZ=3TO5:FORX=1TO8:
READQ:S=S+CHR$(Q):NEXT:SPRITE$(Z)=S
$:S$="":NEXT
1100 DATA0,60,34,60,34,34,60,0,0,34,3
4,34,34,34,28,0,0,56,68,64,92,68,56,0
1110 DIMG(5):FORL=3TO5:G(L)=1:NEXT:G(
4)=60:G(5)=60:OPEN"grp:"FOROUTPUTAS#1
:CH=0:PRESET(104,64):PRINT#1,"BUSTER"
:PRESET(40,180):PRINT#1,"PRESS 'SPACE
' TO START":PRESET(64,88):PRINT#1,"BY
HUGH CREED":CLOSE#1:CH=1
1120 FORQ=1TO191STEP4:LINE(0,Q)-(255,
Q),4:NEXT
1130 FORM=0TO62
1140 PSET(92,M),15
1150 PUTSPRITE3,(80,G(1)),10,3
1160 PUTSPRITE4,(88,G(2)),10,4
1170 PUTSPRITE5,(96,G(3)),10,5
1180 G(1)=G(1)+1:G(2)=G(2)+1:G(3)=G(3
)+1
1190 NEXT
1200 G(3)=G(3)-2:PUTSPRITE5,(96,G(3))
,10,5
1210 LINE(92,0)-(92,62),1
1220 FORW=1TO62STEP4:PSET(92,W),4:NEX
T
1230 DIMZ$(8)
1240 Z$(1)="L805E16DC1604BAG+4":Z$(2)
="L803CR4.D802R16ER32E"
1250 Z$(3)="04L8E16F+G+16AB05C":Z$(4)
="L803DR4.C8R1602ER32E"
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```

1260 Z$(5)="L805E1604B05D1604A05C04B+
4":Z$(6)="03L8CR4.D02R16ER32E"
1270 Z$(7)="L804E16G+B1605ER3204EA2":
Z$(8)="03L8D4R802ER32ER16E1601A2"
1280 FORZ=1TO8STEP2:PLAYZ$(Z),Z$(Z+1)
1290 NEXT
1300 FORPL=1TO25:FORK0=1TO100:NEXT:G(
1)=G(1)-3:G(2)=G(2)+3:G(3)=G(3)-3:DE=
80:FORCD=3TO5:PUTSPRITECD,(DE,G(CD-2)
),10,CD:DE=DE+8:NEXT:FORYH=1TO70:NEXT
:G(1)=G(1)+3:G(2)=G(2)-3:G(3)=G(3)+3:
DE=80:FORCD=3TO5:PUTSPRITECD,(DE,G(CD
-2)):DE=DE+8:NEXT:NEXT
1310 STRIG(0)OFF
1320 '*CURSOR/JOYSTICK OPTION*
1330 SCREEN0:LOCATE5,10:PRINT"CURSOR
OR JOYSTICK?(C\J)":IFCH=0THENCLOSE#1
1340 SX$=INKEY$
1350 IFSX$="C"ORSX$="c"THENV=0:RETURN
1360 IFSX$="j"ORSX$="J"THENV=1:RETURN
1370 GOTO1340
1380 SOUND7,63:STRIG(0)OFF:FORDX=1TO1
00:NEXT:RETURN1330

```

## DRIFTERS by Hugh Creed

Beat your opponent around the course in Hugh Creed's two player game. Player 1 uses cursor keys, player 2 the joystick.

### Variables

A,B	PLAYER 1 X,Y COORDS
C,D	PLAYER 2 X,Y COORDS
AM,BM	PLAYER 1 ACCELERATION
CM,DM	PLAYER 2 ACCELERATION
J	PLAYER 1 MOVEMENT
K	PLAYER 2 MOVEMENT

```

10 GOSUB 630
20 COLOR 15,4,4
30 SCREEN2
40 GOSUB420
50 GOSUB540
60 'MAIN LOOP
70 FORYH=1TO40:SOUND0,255:SOUND1,12:S
OUND3,3:SOUND4,252:SOUND9,15:SOUND7,6
3:SOUND8,10:SOUND0,21:SOUND9,9:NEXT
80 A=8:B=16:C=24:D=16
90 IFPOINT(A+7,B)=7THENGOSUB570
100 IFPOINT(C+7,D)=7THENGOSUB570
110 J=STICK(0)
120 K=STICK(1)
130 IFJ=1ORJ=8ORJ=2THENBM=BM-.4
140 IFJ=2ORJ=3ORJ=4THENAM=AM+.4
150 IFJ=4ORJ=5ORJ=6THENBM=BM+.4
160 IFJ=6ORJ=7ORJ=8THENAM=AM-.4
170 IFK=1ORK=8ORK=2THENDM=DM-.4
180 IFK=2ORK=3ORK=4THENCM=CM+.4
190 IFK=4ORK=5ORK=6THENDM=DM+.4
200 IFK=6ORK=7ORK=8THENCM=CM-.4
210 A=A+AM: B=B+BM: C=C+CM: D=D+DM
220 IFA>252THENA=244

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230 IFA<2THENA=9
240 IFB<7THENB=17
250 IFC>252THENC=244
260 IFC<2THENC=8
270 IFD<7THEND=17
280 PUTSPRITE1,(A,B),6,1
290 PUTSPRITE2,(C,D),12,1
300 IFPOINT(A,B)=4THENA=A-AM: B=B-BM: A
M=-AM\2: BM=-BM\2
310 IFPOINT(A+7,B)=4THENA=A-AM: B=B-BM
: AM=-AM\2: BM=-BM\2
320 IFPOINT(A+7,B+7)=4THENA=A-AM: B=B-
BM: AM=-AM\2: BM=-BM\2
330 IFPOINT(A,B+7)=4THENA=A-AM: B=B-BM
: AM=-AM\2: BM=-BM\2
340 IFPOINT(C,D)=4THENC=C-CM: D=D-DM: C
M=-CM\2: DM=-DM\2
350 IFPOINT(C+7,D)=4THENC=C-CM: D=D-DM
: CM=-CM\2: DM=-DM\2
360 IFPOINT(C+7,D+7)=4THENC=C-CM: D=D-
DM: CM=-CM\2: DM=-DM\2
370 IFPOINT(C,D+7)=4THENC=C-CM: D=D-DM
: CM=-CM\2: DM=-DM\2
380 IFB>180THENB=177
390 IFD>180THEND=177
400 GOTO90
410 'DRAW SCREEN DISPLAY
420 DRAW"BMS,16"
430 DRAW"D168R88U56R16D40R8D!6R72U64L
32U16R48D80R44"
440 DRAW"U120M224,32U16L216"
450 DRAW"BM32,32D128R48U16L32U80R80D8
8R6D20R34U36L24U48"
460 DRAW"R76D80R20U96M224,56D16L80U32
L16U8L96"
470 CIRCLE(88,104),24,15
480 CIRCLE(176,40),16,15
490 PAINT(16,24),15
500 LINE(33,16)-(47,32),4,BF
510 LINE(48,16)-(64,32),7,BF
520 RETURN
530 'DESIGN SPRITES
540 SPRITE$(1)=CHR$(24)+CHR$(24)+CHR$(
60)+CHR$(255)+CHR$(255)+CHR$(60)+CHR
$(24)+CHR$(24)
550 RETURN
560 'VICTORY TUNE
570 SOUND7,56:A$="L32CR64CDEDCDE8C8R6
4C8"
580 PLAY"06"+A$
590 PLAY"04"+A$
600 PLAY"02"+A$
610 FORT=1TO300:NEXT:RUN
620 'OPENING SEQUENCE
630 COLOR 14,1,1
640 SCREEN2
650 OPEN"grp:"FOROUTPUTAS#1
660 PRESET(80,80):PRINT#1,"DRIFTERS"
670 PRESET(64,56):PRINT#1,"BY HUGH CR
EED"
680 X=55:Y=20:FORB=80TO88
690 FORA=80TO144
700 IFPOINT(A,B)=14THENPSET(X,Y),8:PS
ET(X+1,Y),8
710 X=X+2
720 NEXT:Y=Y+1:X=55
730 NEXT
740 FORIU=1TO255
750 SOUND0,IU

```

# LISTINGS

```

760 SOUND1,12
770 SOUND3,3
780 SOUND4,IU
790 SOUND9,15
800 SOUND7,IU
810 SOUND8,10
820 SOUND0,21
830 SOUND9,9
840 NEXT
850 CLOSE#1
860 RETURN

```

## MANIC CHEATER by B LaPersonne

A quick and self-explanatory "cheat" program giving any number of lives on Manic Miner. Use at your own risk!

```

10 CLS
20 COLOR 7,1
30 KEYOFF
40 PRINT "          -MANIC MINER CHEAT PROG
RAM-"
50 PRINT
60 PRINT
70 PRINT "NUMBERS OVER 32 MAY HAVE ODD
EFFECTS ON THE GAME!"
80 PRINT
90 PRINT "ENTER NUMBER OF LIVES 0-255"
100 INPUT N
110 POKE-31489,N
120 CLEAR100,&H8500
130 PRINT:PRINT "INSERT MANIC MINER I
N DATA RECORDER AND PRESS PLAY"
140 PRINT:PRINT "LOADING....."
150 BLOAD"CAS:"
160 SCREEN1
170 POKE-25841,PEEK(-31489)
180 DEFUSR=&H98FB
190 A=USR(0)

```

## TIME TUNNEL by Anthony Tipton

The aim is to fly from one end of the tunnel to the other, avoiding oncoming swords, comets and arrows without hitting the walls of the tunnel.

### Variables

A\$,B\$,C\$,D\$	MUSIC
SPRITE0,1	MAN
SPRITE2	SWORDS
SPRITE3	COMET
SPRITE4	ARROWS
A	YEAR
X,Y	SPRITE0 X,Y COORDS
X1,Y1	SPRITE1 X,Y COORDS
C	RANDOM COLOUR

```

1 REM *** TIME TUNNEL ***
3 REM *** BY A TIPTON ***
10 SCREEN1,2:KEYOFF
20 GOSUB400
30 REM * OPENING SCREEN *
40 SCREEN2
50 OPEN"GRP:"AS#1
60 COLOR15,1,1:CLS
70 FORJ=8TO50
80 PRESET(J,J)
90 PRINT#1,"TIME TUNNEL"
100 NEXTJ
110 PRESET(J+8,J+8)
120 PRINT#1,"TIME TUNNEL"
130 PRESET(J,J+16)
140 PRINT#1,"BY ANTHONY TIPTON"
150 FORD=1TO1000:NEXTD
160 CLOSE
170 REM * INSTRUCTIONS *
180 PRINT:CLS:SCREEN1
190 PRINT"YOU HAVE FOUND A CAPE AND O
N"
200 PRINT"TRYING IT ON YOU FIND YOU"
210 PRINT"ARE TRAPPED IN A TIME TUNNE
L":PRINT
220 PRINT"TO RETURN BACK TO YOUR OWN"
230 PRINT"TIME YOU MUST FLY SAFELY"
240 PRINT"THROUGH THE TIME TUNNEL":PR
INT
250 PRINT"BEWARE OF THE TUNNEL WALLS"
260 PRINT"BECAUSE THEY ARE EXPLOSIVE"
:PRINT
270 PRINT"AVOID THE SWORDS, THE ARROW
S"
280 PRINT"AND THE COMETS"
290 PRINT"THEY WILL PREVENT YOU FROM"
300 PRINT"COMPLETING YOUR JOURNEY"
310 PRINT"THROUGH THE TIME TUNNEL":PR
INT
320 PRINT"USE CURSOR KEYS OR JOYSTICK
":PRINT
330 GOSUB1320
340 PLAYA$,B$
350 FORD=1TO2000:NEXTD
360 PRINT"PRESS ANY KEY TO PLAY"
370 IFINKEY$=""THEN370
380 T=RND(-TIME)
390 GOTO500
400 REM * DEFINE SPRITES *
410 FORSP=0TO4
420 C$=""
430 FORS=1TO32
440 READA
450 C$=C$+CHR$(A)
460 NEXTS
470 SPRITE$(SP)=C$
480 NEXTSP
490 RETURN
500 REM * LEVEL OF DIFFICULTY *
510 SPRITEOFF:A=636:CLS:PRINT:PRINT"1
=EASY 2= NORMAL 3= HARD"
520 LD$=INPUT$(1)
530 IFLD$="1"THENDL$="30":GOTO590
540 IFLD$="2"THENDL$="20":GOTO590
550 IFLD$="3"THENDL$="10":GOTO590
560 GOTO520
570 GOTO510
580 REM * MAIN LOOP *
590 CLS:X=200:X1=216:Y=50

```

```

600 SOUND0,241:SOUND1,15:SOUND2,159:S
OUND3,2:SOUND4,218:SOUND5,5:SOUND6,2:
SOUND7,49:SOUND8,13:SOUND9,5:SOUND10,
16:SOUND11,240:SOUND12,47:SOUND13,8
610 C=INT(RND(1)*13)+2
620 COLORC
630 FORJ=1TO27
640 G=INT(RND(1)*VAL(DL$))
650 IFG=3THENGOSUB1010
660 LOCATEJ,0:PRINTCHR$(219);
670 LOCATEJ,1:PRINTCHR$(219)
680 LOCATE(J-1),1:PRINT" "
690 LOCATEJ,23:PRINTCHR$(219);
700 LOCATEJ,22:PRINTCHR$(219)
710 LOCATE(J-1),22:PRINT" "
720 LOCATE27,1:PRINT" "
730 LOCATE27,22:PRINT" "
740 LOCATEJ,11:PRINTA;
750 LOCATE23,11:PRINT" "
760 PUTSPRITE0,(X,Y),8
770 PUTSPRITE1,(X1,Y),8
780 IFSTICK(0)=1THENY=Y-4:IFY<6THEN83
0
790 IFSTICK(1)=1THENY=Y-4:IFY<6THEN83
0
800 IFSTICK(0)=5THENY=Y+4:IFY>169THEN
830
810 IFSTICK(1)=5THENY=Y+4:IFY>169THEN
830
820 GOTO840
830 RESTORE980:FORJ=0TO13:READA:SOUND
J,A:NEXTJ:GOTO1060
840 X=X-.25:X1=X1-.25
850 IFX<16THEN1200
860 ONSPRITEGOSUB1110
870 SPRITEON
880 NEXTJ
890 A=A+50
900 GOTO610
910 REM * SPRITE DATA *
920 DATA 96,127,255,0,0,30,63,63,63,6
3,30,0,0,255,127,96,0,0,131,207,127,1
27,127,255,255,127,127,127,207,131,0,
0
930 DATA 0,124,254,254,255,255,254,25
4,254,254,255,255,254,254,124,0,0,3,1
23,255,128,0,0,0,0,0,128,255,123,3,
0
940 DATA 152,100,114,58,28,12,2,1,1,2
,12,28,58,114,100,152,1,2,4,8,16,32,6
4,128,128,64,32,16,8,4,2,1
950 DATA 1,0,1,2,21,42,85,170,85,42,2
1,2,1,0,1,0,80,168,84,170,125,254,127
,255,127,254,125,170,84,168,80,160
960 DATA 0,0,4,2,255,2,4,0,3,0,4,2,25
5,2,4,0,4,2,255,2,4,0,16,8,252,8,16,4
,2,255,2,4
970 REM * SOUND DATA *
980 DATA 108,13,57,4,198,8,16,55,16,1
,1,51,98,1
990 DATA 16,9,62,4,249,15,22,57,15,16
,10,17,78,2
1000 REM * TUNNEL SPRITES *
1010 I=INT(RND(1)*3)+2
1020 C=INT(RND(1)*13)+2
1030 PUTSPRITE3,(X-17,Y),C,I

```

```

1040 RETURN
1050 REM * HIT WALL ROUTINE *
1060 SCREEN0:SCREEN1:COLOR15
1070 PRINT
1080 PRINT"YOU HIT THE TUNNEL WALL"
1090 PRINT
1100 GOTO1270
1110 FORJ=0TO13:SOUNDJ,0:NEXTJ
1120 RESTORE990:FORJ=0TO13:READA:SOUN
DJ,A:NEXTJ
1130 REM * COLLISION ROUTINE *
1140 SCREEN0:SCREEN1:COLOR15
1150 PRINT
1160 PRINT"YOU WERE HIT"
1170 PRINT
1180 GOTO1270
1190 REM * WIN ROUTINE *
1200 SCREEN0:SCREEN1:COLOR15
1210 PRINT"CONGRATULATIONS!!!"
1220 PRINT
1230 PRINT"YOU ARE BACK IN YOUR OWN T
IME"
1240 PRINT
1250 GOTO1360
1260 GOTO1270
1270 INPUT"ANOTHER GAME Y/N";AG$
1280 IFAG$="Y"ORAG$="y"THENCLS:GOTO51
0
1290 IFAG$="N"ORAG$="n"THENEND
1300 CLS:GOTO1270
1310 REM * TUNE *
1320 SOUND7,248
1330 A$="T240V1204L4DGGL8GEL4GG05DDL8
EDL4DCCO4L8GEGDL2DR4L8GEL4GL8GGGEL4GB
L8BBBGR8GL4AAL8BAL4AO5L2DL8DEDR8O4DL4
EL8GGGG05L8DDDEL4EL8DDL4CL8CCCO4GABL2
BR8L8GGEGGGEL4GL8GO5DDO4L4B.R8L8DDDO5
L4CCO4L8BL4AL8G"
1340 B$="T240V15S3M30000R2O2L4GR4DR4G
R4BR4O3CR4O2CR4L4GDEFGR4DR4GR4DR4ER4A
O3C#DO2DEF#GR4DR4GR4BR4O3CR4O2CR4GR4D
R4GR4DR4GR4DR4AR4DR4"
1350 RETURN
1360 RUN1370
1370 SOUND7,248
1380 C$="L1GR4L8DDL4EGGL8GDL4GG05DL8D
O4BL4AGR4GG.L8EGGGGL4GDR4GG.L8GL4BL8B
BL2BR8L8AAABL4AO5L8DL2DL8DEL4DO4DEGL8
AAO5DO4L4B.O5L8EO4L4B.GL8GEAL4G.GR8L8
DL4EGGL8GEL4GG05L8DO4BL4BR8DL8DO5CL4C
.O4BL8AGL1G"
1390 D$="T240S3V15O2GDEFGR4R2GR4DR4GR
4BR4O3CR4O2GR4O3CR4O2GO3DGR4DR4GR4DGE
R4AR4O3DO2DEF#GR4DR4GR4BR4O3CR4O2CR4G
R4DR4GR4DR4GR4DR4AR4DR4GDEF#"
1400 PLAYC$,D$
1410 GOTO1270

```

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	Alfred Lees	M Berriman	Bullocks HiFi & Video	Centro (Wiseman)	Charles A Shaw	Collingwood TV Services	S J Electronics	E & N French	Hi-Vu	Frank Platt (Electrics)	Henry's	Hislops
Aackosoft	●	●	●	●	●	●	●	●				●
A+F Software	●	●	●	●	●	●	●	●	●	●		●
Activision	●	●	●	●	●	●	●	●	●	●	●	●
Alligata	●	●	●	●	●	●	●	●	●	●	●	●
Amplesoft	●	●	●	●	●	●	●	●	●	●		●
Anirog	●	●	●	●	●	●	●	●	●	●	●	●
Artic Computing	●	●	●	●	●	●	●	●	●	●		●
Ask	●	●	●	●	●	●		●	●	●		●
Broker Bound Software	●	●	●	●	●			●				●
Bubble Bus	●	●	●	●	●	●	●	●	●	●		●
CDS	●	●	●	●	●	●		●	●	●		●
Cheshire Cat Leisure	●	●	●	●	●	●		●				●
Computer Mates	●	●	●	●	●	●		●	●	●	●	●
CRL	●	●	●	●	●			●				●
Cable	●	●	●	●	●			●				●
Century	●	●	●	●	●			●				●
D K Tronics	●	●	●	●	●	●	●	●	●	●		●
Domark	●	●	●	●	●	●	●	●				●
Electric Software	●	●	●	●	●	●	●	●	●	●	●	●
Eclipse	●	●	●	●	●	●	●	●	●	●		●
Global Software	●	●	●	●	●			●				●
Hal Software	●	●	●	●	●	●	●	●		●	●	●
Hisoft	●	●	●	●	●	●	●	●	●	●	●	●
Hudson Software	●	●	●	●	●			●		●		●
Haresoft	●	●	●	●	●			●				●
Icon Software	●	●	●	●	●			●				●
Intelligent Software	●	●	●	●	●			●				●
John Wiley Software	●	●	●	●	●	●		●				●
Knights	●	●	●	●	●	●	●	●				●
Kuma Computers	●	●	●	●	●	●	●	●	●	●	●	●
Konami	●	●	●	●	●	●	●	●	●	●	●	●
Kemp Software	●	●	●	●	●			●				●
Level 9 Computing	●	●	●	●	●	●	●	●	●	●	●	●
Live Wire	●	●	●	●	●	●	●	●	●	●		●
Llamasoft	●	●	●	●	●	●	●	●		●		●
Longman Software	●	●	●	●	●			●				●
Mastertronic Ltd	●	●	●	●	●	●	●	●		●		●
M C Lothlorien	●	●	●	●	●	●	●	●	●	●		●
Mentor	●	●	●	●	●	●	●	●		●		●
Megacycal Software	●	●	●	●	●	●		●	●	●		●
Micro Aid	●	●	●	●	●	●		●		●		●
Microcom	●	●	●	●	●	●		●	●	●		●
Mirrorsoft	●	●	●	●	●	●	●	●	●	●	●	●
MPL	●	●	●	●	●	●		●				●
Mr Micro Ltd	●	●	●	●	●	●	●	●	●	●		●
Martech	●	●	●	●	●	●	●	●		●		●
MST Technology	●	●	●	●	●	●		●		●		●
Melbourne House	●	●	●	●	●	●	●	●		●	●	●
Morwood	●	●	●	●	●	●	●	●	●	●		●
Ocean Software	●	●	●	●	●	●	●	●	●	●	●	●
Orpheus Software	●	●	●	●	●	●	●	●	●	●		●
Odin Consumer Graphics	●	●	●	●	●			●				●
Panasonic	●	●	●	●	●			●				●
Philips	●	●	●	●	●			●				●
Puddles	●	●	●	●	●	●		●				●
PSS	●	●	●	●	●	●	●	●	●	●		●
Quicksilva	●	●	●	●	●	●	●	●	●	●		●
Rittor Music Software	●	●	●	●	●	●	●	●		●		●
Sanyo	●	●	●	●	●		●	●				●
Silver Soft	●	●	●	●	●			●				●
Software Projects	●	●	●	●	●	●	●	●	●	●	●	●
Sony	●	●	●	●	●			●				●
Statesoft	●	●	●	●	●			●		●		●
Stell	●	●	●	●	●	●		●	●	●		●
Shield	●	●	●	●	●	●		●				●
Tasman	●	●	●	●	●			●	●	●		●
Terminal	●	●	●	●	●	●		●	●	●		●
Toshiba	●	●	●	●	●	●	●	●	●	●	●	●
Ultimate	●	●	●	●	●	●	●	●				●
Virgin Games	●	●	●	●	●	●	●	●	●	●	●	●
Visions	●	●	●	●	●			●				●

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Aackosoft	●	●	●		●	●	●	●	●	●	●	●
A+F Software	●	●	●	●	●	●	●	●	●	●	●	●
Activision	●	●	●	●	●	●	●	●	●	●	●	●
Alligata	●	●	●	●	●	●	●	●	●	●	●	●
Amplesoft	●	●	●	●	●	●	●	●	●	●	●	●
Anirog	●	●	●		●	●	●	●	●	●	●	●
Artic Computing	●	●	●		●	●	●	●	●	●	●	●
Ask	●	●	●	●	●	●	●	●	●	●	●	●
Broker Bound Software	●	●	●		●	●	●	●	●	●	●	●
Bubble Bus	●	●	●	●	●	●	●	●	●	●	●	●
CDS	●	●	●	●	●	●	●	●	●	●	●	●
Cheshire Cat Leisure	●	●	●	●	●	●	●	●	●	●	●	●
Computer Mates	●	●	●		●	●	●	●	●	●	●	●
CRL		●	●		●	●	●	●	●	●	●	●
Cable		●	●		●	●	●	●	●	●	●	●
Century		●	●		●	●	●	●	●	●	●	●
D K Tronics	●	●	●	●	●	●	●	●	●	●	●	●
Domark	●	●	●		●	●	●	●	●	●	●	●
Electric Software	●	●	●	●	●	●	●	●	●	●	●	●
Eclipse	●	●	●		●	●	●	●	●	●	●	●
Global Software	●	●	●		●	●	●	●	●	●	●	●
Hal Software	●	●	●		●	●	●	●	●	●	●	●
Hisoft	●	●	●	●	●	●	●	●	●	●	●	●
Hudson Software	●	●	●		●	●	●	●	●	●	●	●
Haresoft		●	●		●	●	●	●	●	●	●	●
Icon Software		●	●		●	●	●	●	●	●	●	●
Intelligent Software		●	●		●	●	●	●	●	●	●	●
John Wiley Software	●	●	●		●	●	●	●	●	●	●	●
Knights	●	●	●	●	●	●	●	●	●	●	●	●
Kuma Computers	●	●	●	●	●	●	●	●	●	●	●	●
Konami	●	●	●	●	●	●	●	●	●	●	●	●
Kemp Software		●	●	●	●	●	●	●	●	●	●	●
Level 9 Computing	●	●	●	●	●	●	●	●	●	●	●	●
Live Wire	●	●	●		●	●	●	●	●	●	●	●
Llamasoft	●	●	●	●	●	●	●	●	●	●	●	●
Longman Software		●	●		●	●	●	●	●	●	●	●
Mastertronic Ltd	●	●	●	●	●	●	●	●	●	●	●	●
M C Lothlorien	●	●	●	●	●	●	●	●	●	●	●	●
Mentor		●	●		●	●	●	●	●	●	●	●
Megacycal Software	●	●	●	●	●	●	●	●	●	●	●	●
Micro Aid		●	●		●	●	●	●	●	●	●	●
Microcom		●	●	●	●	●	●	●	●	●	●	●
Mirrorsoft	●	●	●	●	●	●	●	●	●	●	●	●
MPL	●	●	●		●	●	●	●	●	●	●	●
Mr Micro Ltd	●	●	●	●	●	●	●	●	●	●	●	●
Martech	●	●	●	●	●	●	●	●	●	●	●	●
MST Technology	●	●	●	●	●	●	●	●	●	●	●	●
Melbourne House	●	●	●	●	●	●	●	●	●	●	●	●
Morwood	●	●	●	●	●	●	●	●	●	●	●	●
Ocean Software	●	●	●	●	●	●	●	●	●	●	●	●
Orpheus Software	●	●	●	●	●	●	●	●	●	●	●	●
Odin Consumer Graphics		●	●		●	●	●	●	●	●	●	●
Panasonic	●	●	●		●	●	●	●	●	●	●	●
Philips	●	●	●		●	●	●	●	●	●	●	●
Puddles	●	●	●		●	●	●	●	●	●	●	●
PSS	●	●	●	●	●	●	●	●	●	●	●	●
Quicksilva	●	●	●	●	●	●	●	●	●	●	●	●
Rittor Music Software	●	●	●	●	●	●	●	●	●	●	●	●
Sanyo	●	●	●		●	●	●	●	●	●	●	●
Silver Soft		●	●		●	●	●	●	●	●	●	●
Software Projects	●	●	●		●	●	●	●	●	●	●	●
Sony		●	●		●	●	●	●	●	●	●	●
Statesoft		●	●		●	●	●	●	●	●	●	●
Stell	●	●	●	●	●	●	●	●	●	●	●	●
Shield	●	●	●	●	●	●	●	●	●	●	●	●
Tasman	●	●	●	●	●	●	●	●	●	●	●	●
Terminal	●	●	●	●	●	●	●	●	●	●	●	●
Toshiba	●	●	●	●	●	●	●	●	●	●	●	●
Ultimate	●	●	●		●	●	●	●	●	●	●	●
Virgin Games	●	●	●	●	●	●	●	●	●	●	●	●
Visions		●	●		●	●	●	●	●	●	●	●

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7. Cases of non-supply or wrong supply of goods should initially be taken up directly and as soon as possible with the supplier.
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This guarantee covers only advance payments sent in direct response to an advertisement in this magazine (not, for example, payments made in response to catalogues etc, received as a result of answering such advertisements). Classified advertisements are excluded.

Note: The sums referred to are annual amounts available for compensation and they will be divided equally amongst all valid claims received.

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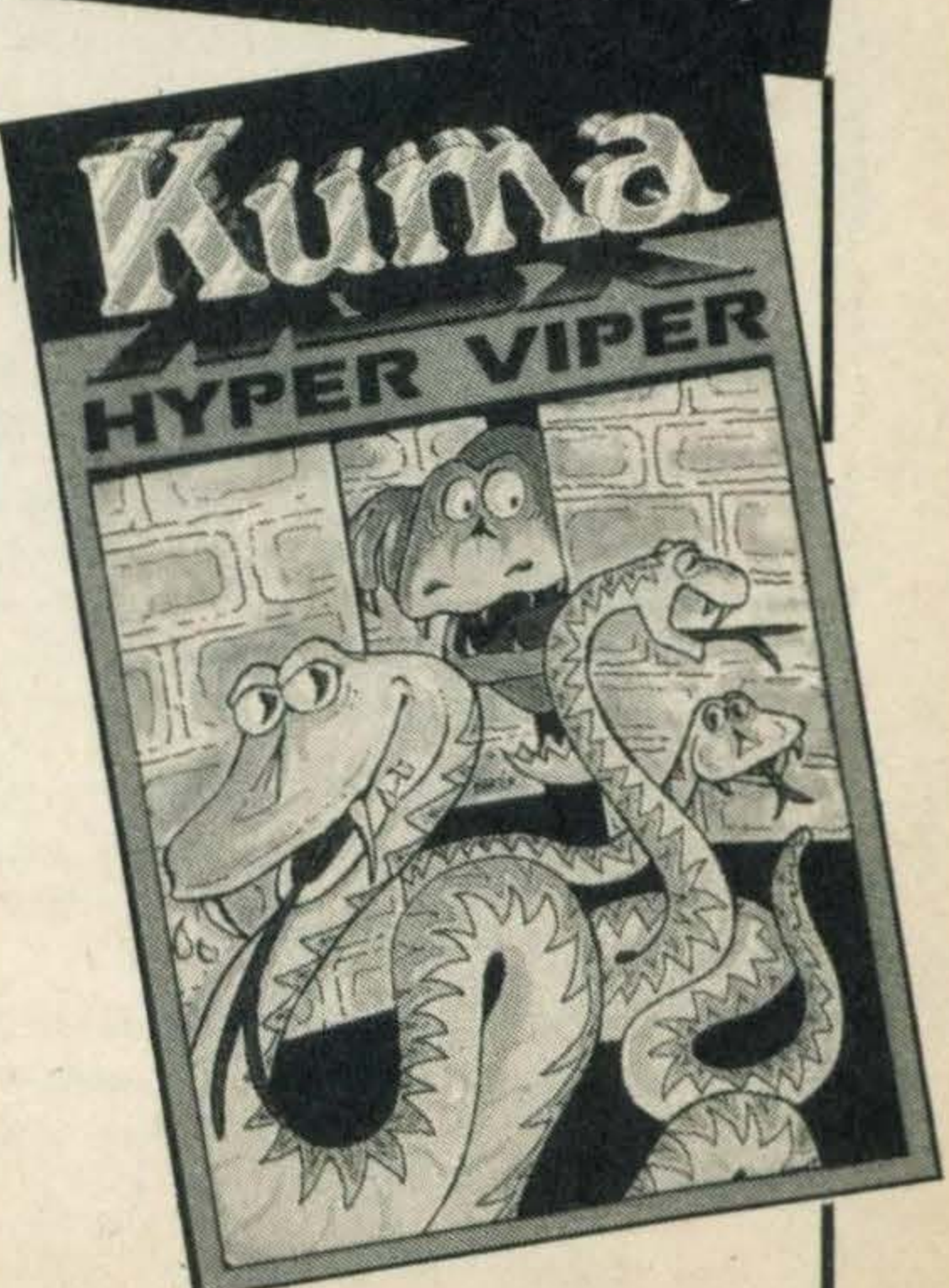
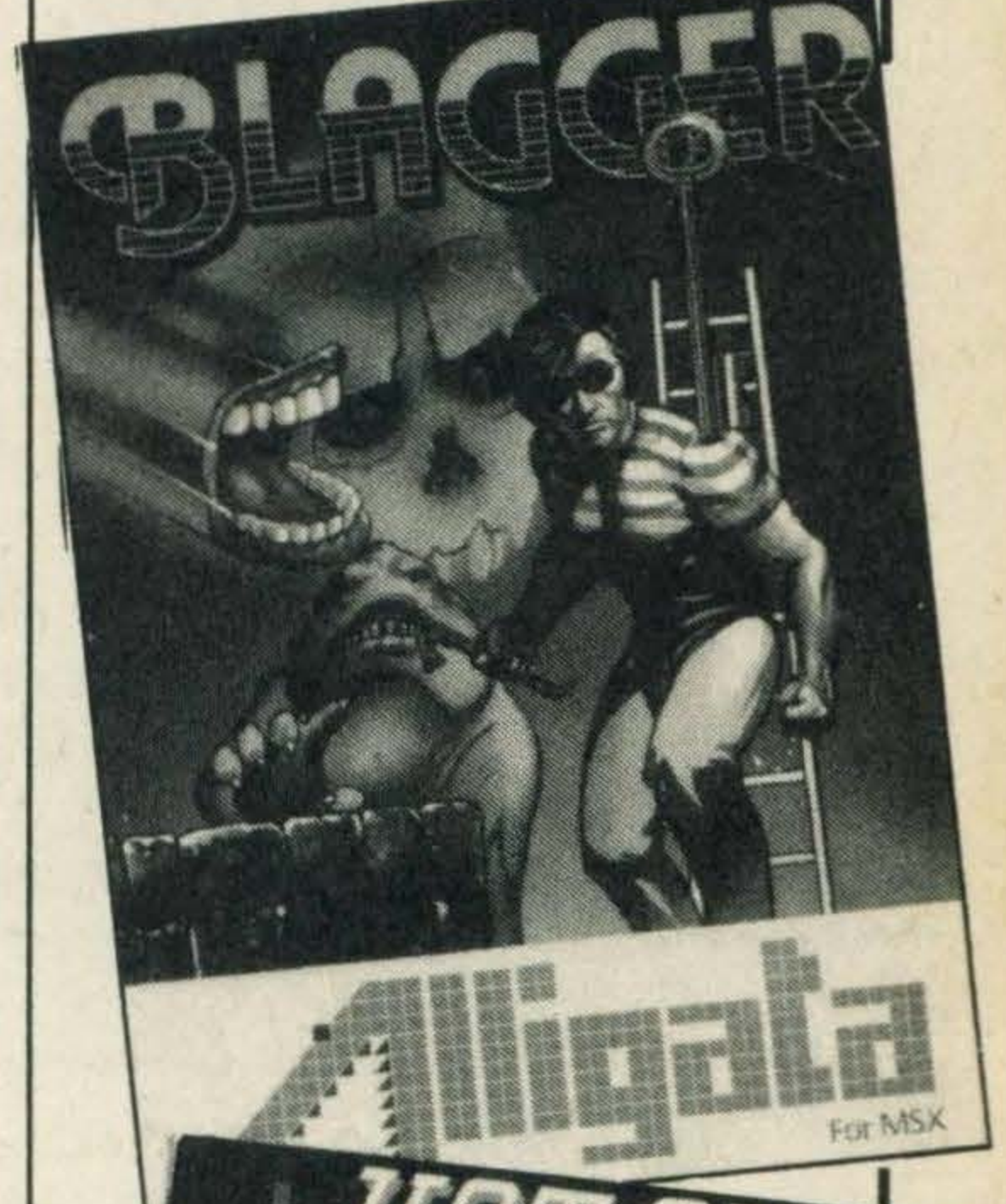
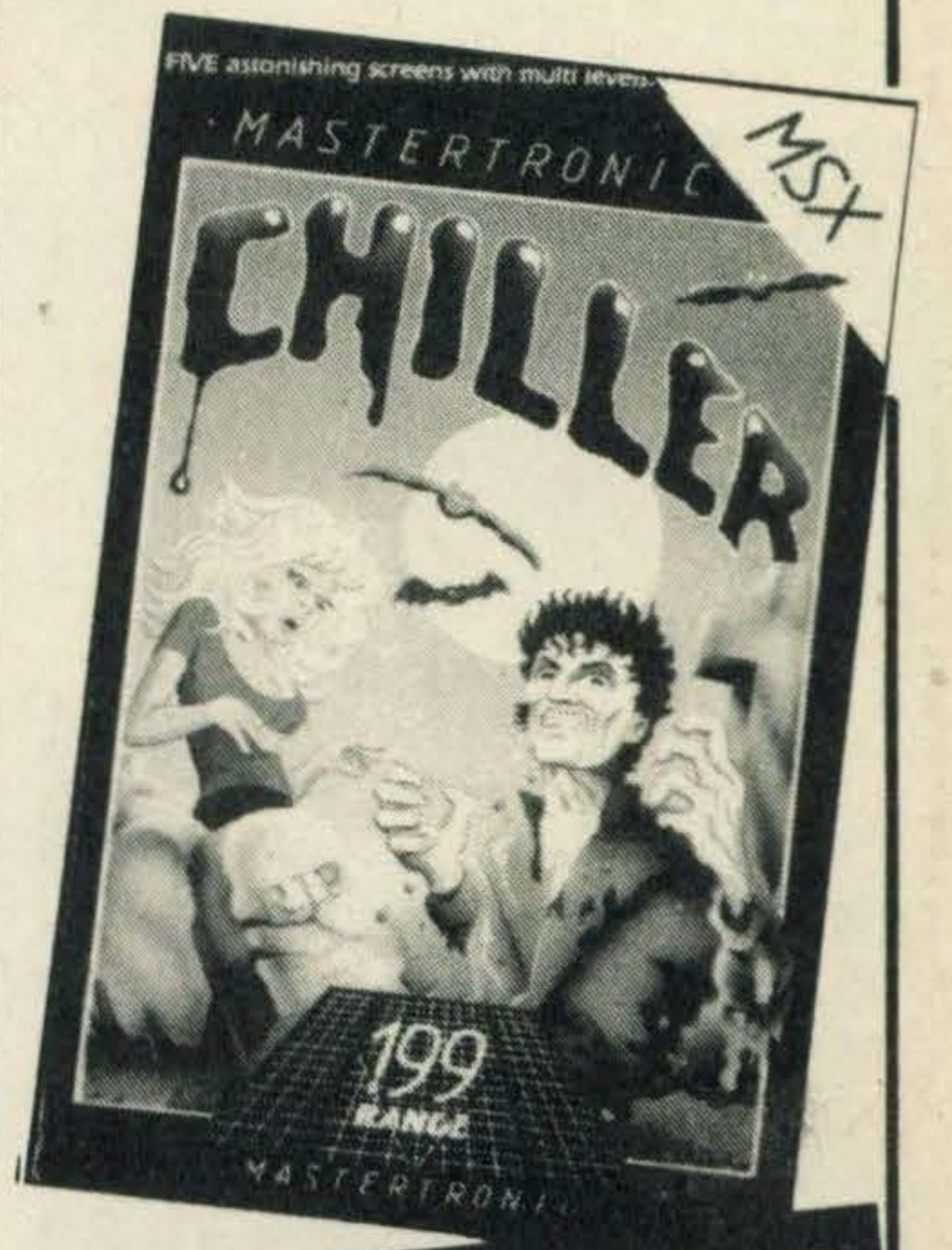
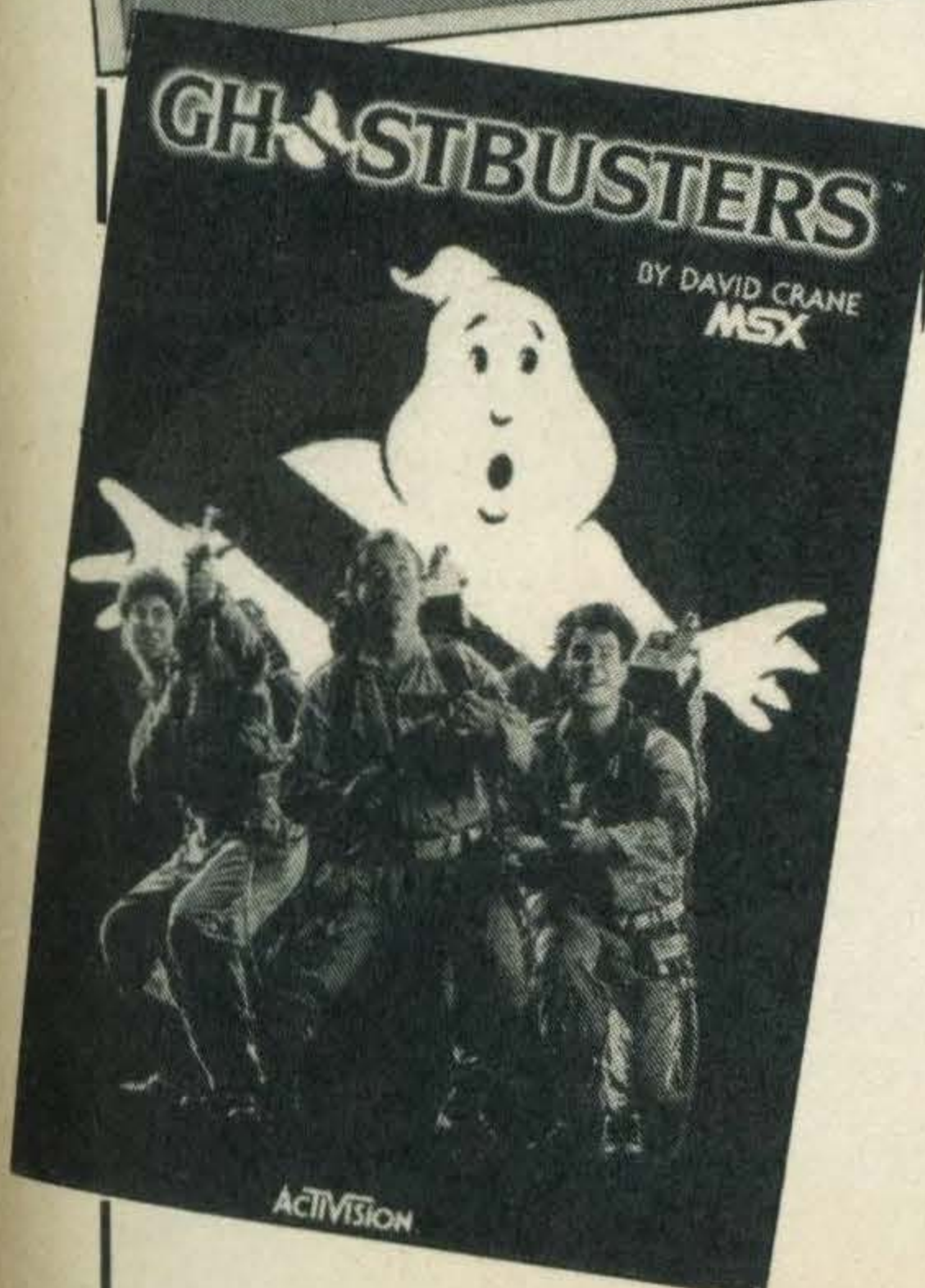
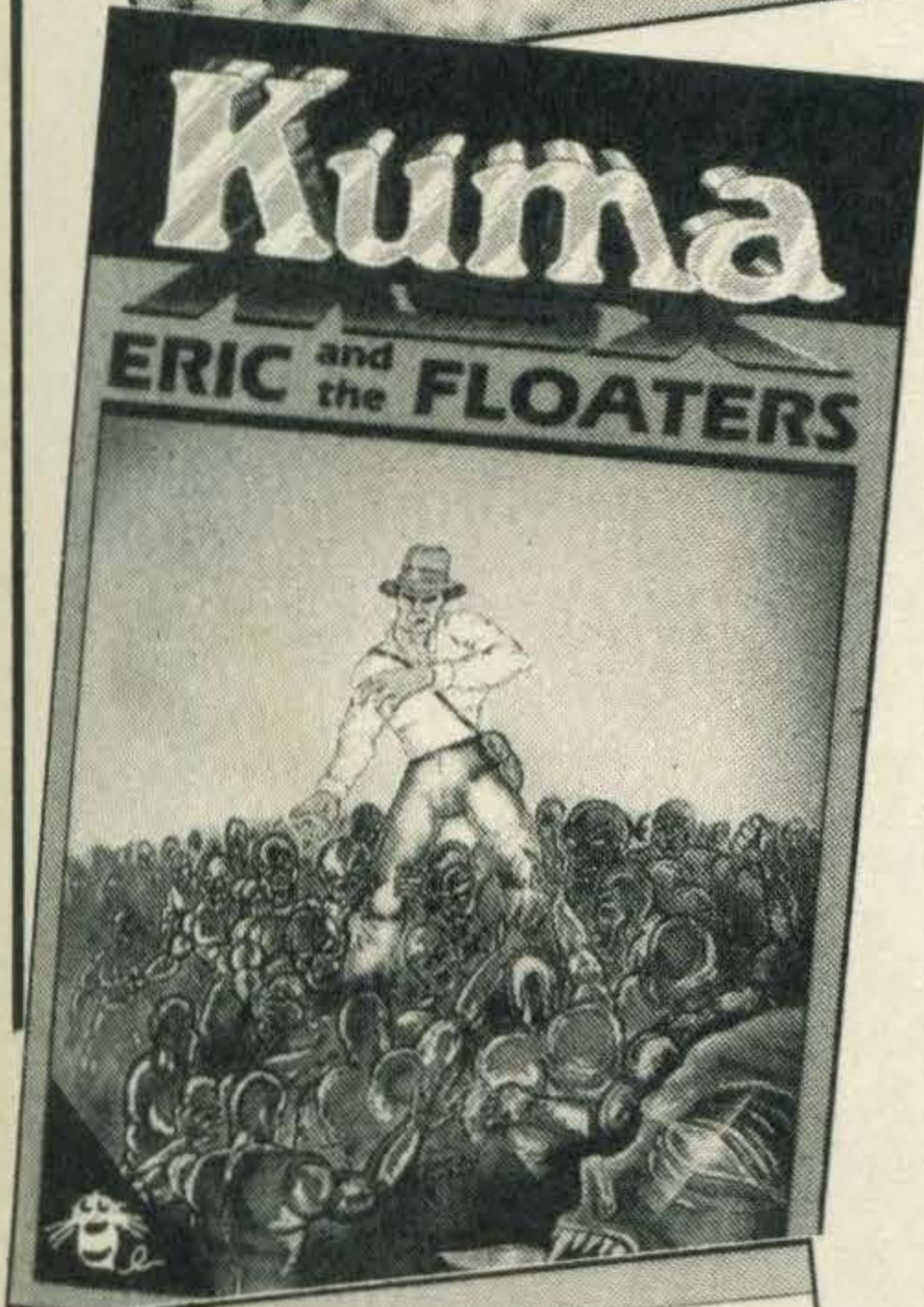
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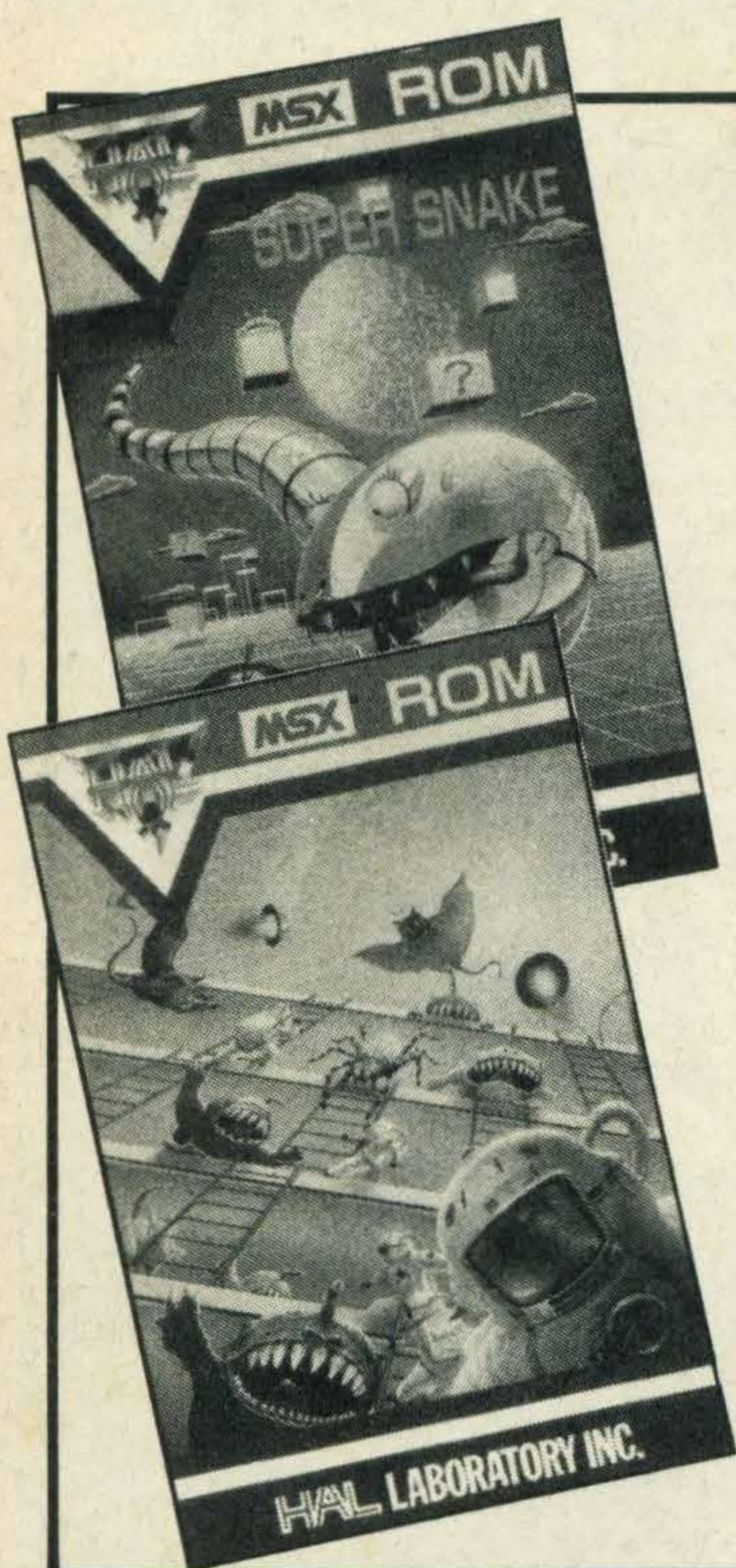
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Send your high scores to: High Scores, MSX Computing, 38-42 Hampton Road, Teddington, Middlesex TW11 0JE

Game	Name	Score	Stage
Alien 8	John Philpott (Derby)	23	
Alpha Blaster	Christopher Rutherford (Hexham)	29,125	
Antarctic Adventure	David McEwan (Lanarkshire)	16,934,200	
Barnstormer	Graham Dixon (Lincolnshire)	279,955	12
Battleship Clapton II	Nicholas Cole (Esher)	95,750	
Beamrider	Sean Baxter (Dyfed)	133,380	25
Blogger	David McEwan (Lanarkshire)	1,975,000	
Boom	Matthew Durkin (N. Yorks)	51,000	11
Boulderdash	Alan Jones (Streatham)	59,848	F/4
Brian Jacks	Steve Lewis (Billericay)	734	3
Superstar Challenge			
Buck Rogers	Neil Macfall	310,900	6
Centipede	Michelle Drabwell (Essex)	45,000	7
Chiller	Simon Dobson (Devon)	32,963	
Choro Q	Scott Fielding (Truro)	42,380	
Chuckie Egg	Andrew Talbot (Bridlington)	1,394,190	
Circus Charlie	Ian Bucklow (Worksop)	1,198,460	105
Comic Bakery	David Styles (Kent)	245,540	22
Decathlon	Neil Macfall	12,920	
Disk Warrior	Andrew Talbot (Bridlington)	1,020,740	8
Dogfighter	Neil Sims (Derbyshire)	10,100	
Elidon	Andrew Talbot (Bridlington)	37,350	26%
Eric and the Floaters	Sean Baxter (Dyfed)	1,844,160	
Finders Keepers	Paul Griffiths (Lincoln)	16,000	
Fire Rescue	Mark Lowles (Greenock)	29,540	
Formula One Simulator	Matthew Durkin (N. Yorks)	178mph	1st
Fruity Frank	Lesley Robinson (Blairgowrie)	21,000	7
Ghostbusters	Laurence Burke (Ireland)	\$999,900	
Golf	Joseph Gleeson (Ireland)	28 under par	
Gridtrap	James Brodie (Stirling)	354,900	23
Gunfricht	Neil Alldritt (Chessington)	\$150,000	51
Hero	Arild Tønnessen (Norway)	295,995	
Highway	Robin Emmons (London)	175,170	2
Hopper	Christopher Rutherford (Hexham)	100,050	3
Hotshoe	Dan Gavik (Denmark)	187,575	19
Hunchback	David McEwan (Lanarkshire)	2,700,000	
Hustler	Stewart Taylor (Witney)	8 shots	
Hyper Rally	Dermot Long (Limerick)	239,500	
Hyper Sports I	Mark Bosselli (Kenton)	2,050,800	51
Hyper Sports II	L Henry (Battersea)	500,500	
Hyper Viper	Helen Carter (Mkt Weighton)	127,500	8
Jet Fighter	Andrew Daly (Abingdon)	3,650	
Jet Set Willy II	J Alexander (Kew)	110 objects	
Kings Valley	A Baker (London)	1,004,300	68
Knightlore	Robert Elliott (Belfast)	96%	
Knightmare	Neil Alldritt (Chessington)	130,580	3
Lazy Jones	Mark Sutton (Rayleigh)	149,650	
Les Flics	Matthew Binyon	29,500	
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Manic Miner	Clive Marsh (Watford)	42,470	29
Maxima	Sean Mason (Ireland)	193,960	112
Monkey Academy	Jason Wopling (Essex)	203,600	
Mopiranger	Alan Sinclair (London)	162,300	21
Mutant	Mark Drabwell (Essex)	737	7
Ninja	John Philpott (Derby)	7,640	6
Oh Mummy	Mark Sellick (London)	1,045	
Oh No!	R Druce (Combe Martin)	54,720	
Oil's Well	Mark Burrows (N Devon)	83,600	
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Pitfall II	Arild Tønnessen (Norway)	199,000	
Polar Star	Neil Macfall	100,710	4
Punchy	Philip Pett (Havant)	377,198	
Pyramid Warp	Katie Smith (St Ives)	67,670	6
River Raid	Gary Pike (South Glamorgan)	62,750	37
Road Fighter	Daniel Tracey (Colchester)	884,528	65
Roller Ball	A Baker (London)	3,120,180	





Game	Name	Score	Stage
Sasa	Nigel Sims (Derbyshire)	200,195	
Shark Hunter	Baz Bowdidge (Catford)	16,802	7
Sky Jaguar	Arnfinnur Dor Jonsson (Iceland)	689,190	
Soccer	D Grant (Bridlington)	22-1	
Sorcery	John Philpott (Derby)	Comp'd	
Space Walk	Paul Lavoie (Crawley)	1,029,500	
Spooks and Ladders	Helen Carter (Mkt Weighton)	189,930	79
Step Up	Stephen Lam (Orpington)	14,000	
Stop The Express	Mark Sellick (London)	4,400	
Super Cobra	Ian West (Aylesbury)	501,100	62
Super Snake	Mark Sutton (Rayleigh)	43,600	
Sweet Acorn	Lesley Robison	820,040	
Tennis	Mark Drabwell (Essex)	6-0, 6-0	
The Snowman	Mark Drabwell (Essex)	30,030	
Time Bandits	Emma Rippin (Leicester)	9,550	
Time Curb	Amy Louise Goulsbra (Lincs)	176,050	
Time Pilot	Robin Emmons (London)	453,000	6
Turmoil	Kenny Kinghorn (Edinburgh)	3,160	
Vacumania	Peter Gillibrand (Blackburn)	19,350	5
Vicious Viper	David McEwan (Lanarkshire)	3,100	
Way of the Tiger	Christopher Rutherford (Hexham)	Comp'd	
Yie Ar Kung Fu	David McEwan (Lanarkshire)	12,109,700	734
Yie Ar Kung Fu II	Lee Kennedy (Morecambe)	140,500	15
Zaxxon	Martyn Groen (Holland)	1,052,300	



## JOIN THE CLUB

Judging by the number of calls and letters we get on the subject, MSX computer users often have difficulty getting in touch with like-minded enthusiasts. One way around this problem is to join a club or user group if there is one in your area.

Listed below are the clubs and user groups we know of. The information is that supplied by the organisers, and inclusion in this listing should not be taken as any form of endorsement or recommendation by *MSX Computing*. Readers are advised to satisfy themselves as to the value of the services offered by any organisation before making a commitment.

Some clubs actually meet at regular intervals, and this is probably the best kind to join if you can find one within a reasonable distance of home. However, you may find that a user group connected by the mail is the only option. The best user groups put out regular newsletters and some freely exchange software written by their own members.

If you run a user group, computer club or information source of interest to owners of MSX computers, please write with details to User Groups, *MSX Computing*, 38-42 Hampton Road, Teddington, Middlesex TW11 0JE.

### MSX'r

C/O Tony Brown  
23 Hall Street  
Foham  
Cambridgeshire  
CB7 5BN  
Tel: N/A

### Memory Alpha

C/O Ross Carter  
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North End, Portsmouth  
Hampshire  
Tel: (Portsmouth)  
696543

### MK-MSX

C/O Jeff Whiting  
8 Blackheath Crescent  
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### The MSX Club (Wales)

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Swansea  
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7SR

### MSX West

C/O Mark Smith  
14 Beech Hill  
Wellington  
Somerset  
Tel: N/A

### Yamaha DX/MSX Users Club

C/O Tony Wride  
PO Box 6  
Ripon  
North Yorks HG4 2QT

### MSX Link

C/O David Webb  
11 Ayscough Avenue  
Spalding  
Lincolnshire PE11 2QB  
Tel: N/A

### The MSX Computer Club

C/O Dean Adams  
173 Hampden Way  
Southgate  
London N14

### The MSX Club

C/O Lee Simpson  
3 Mayfair Place  
Tuxford, nr Newark  
Nottingham NF22 0JD  
Tel: (Tuxford) 870 485

### MSX User Group

C/O Andrew Phillips  
Room 5  
14 Moor Street  
Ormskirk  
Lancashire

### MSX (Scotland)

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3 Crauchan Place  
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# Kuma

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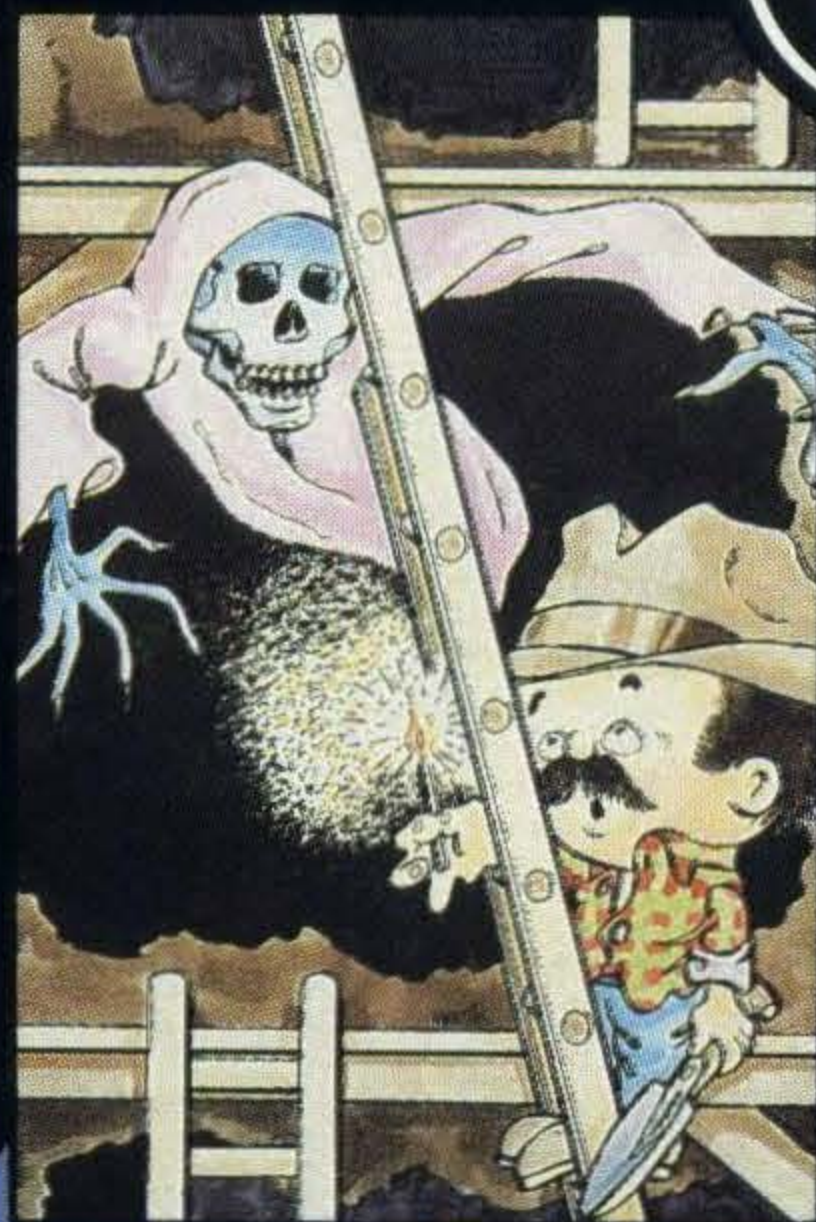
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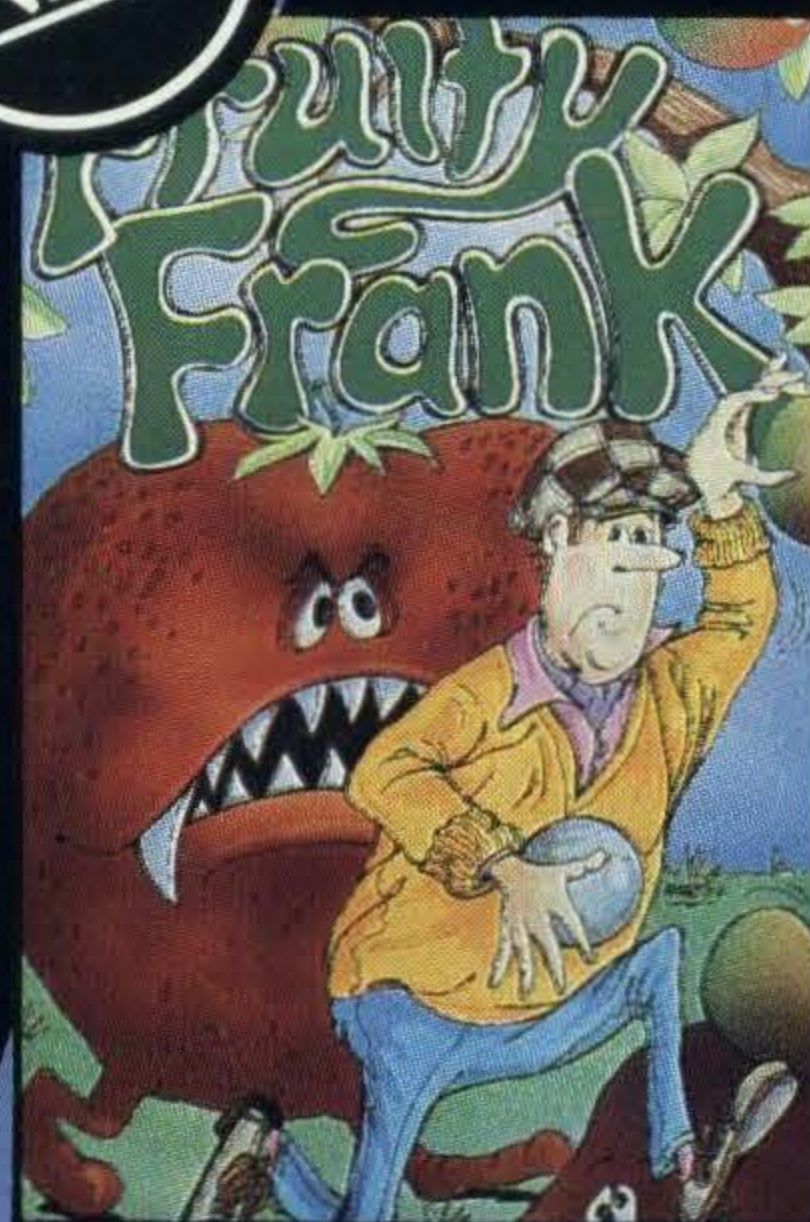
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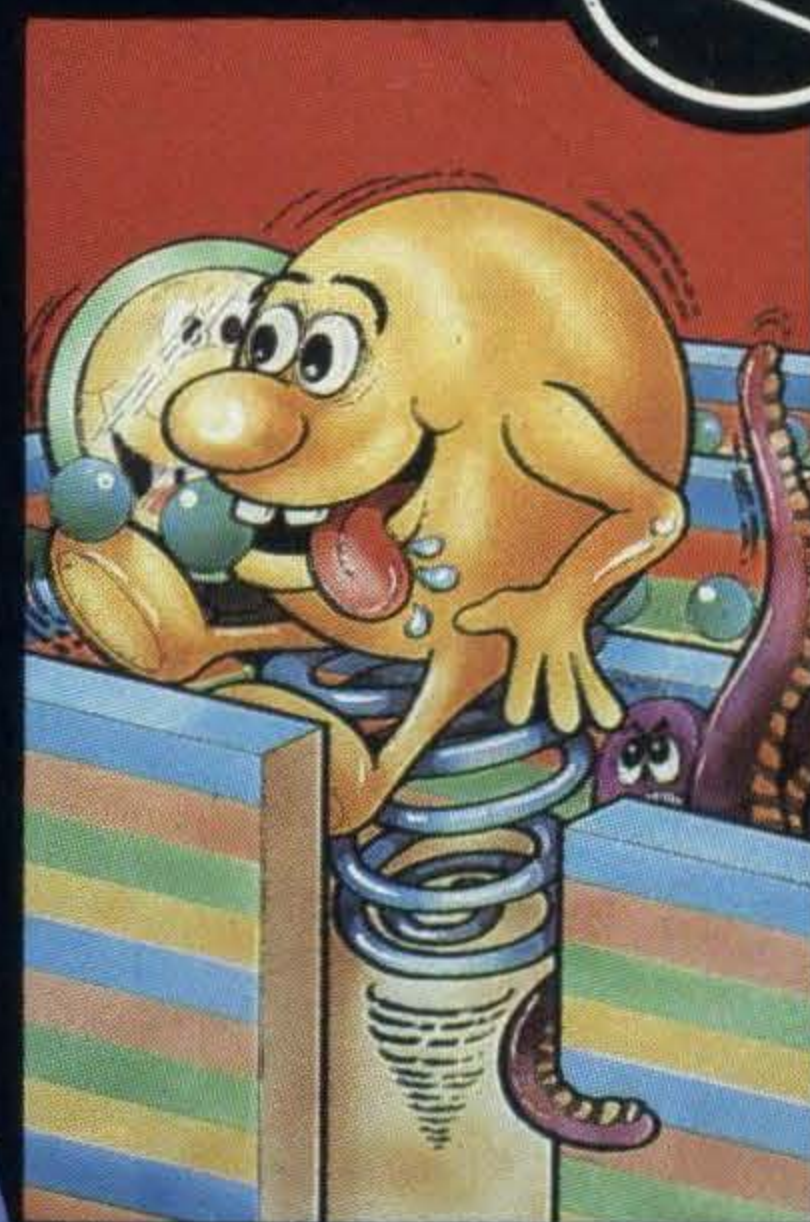
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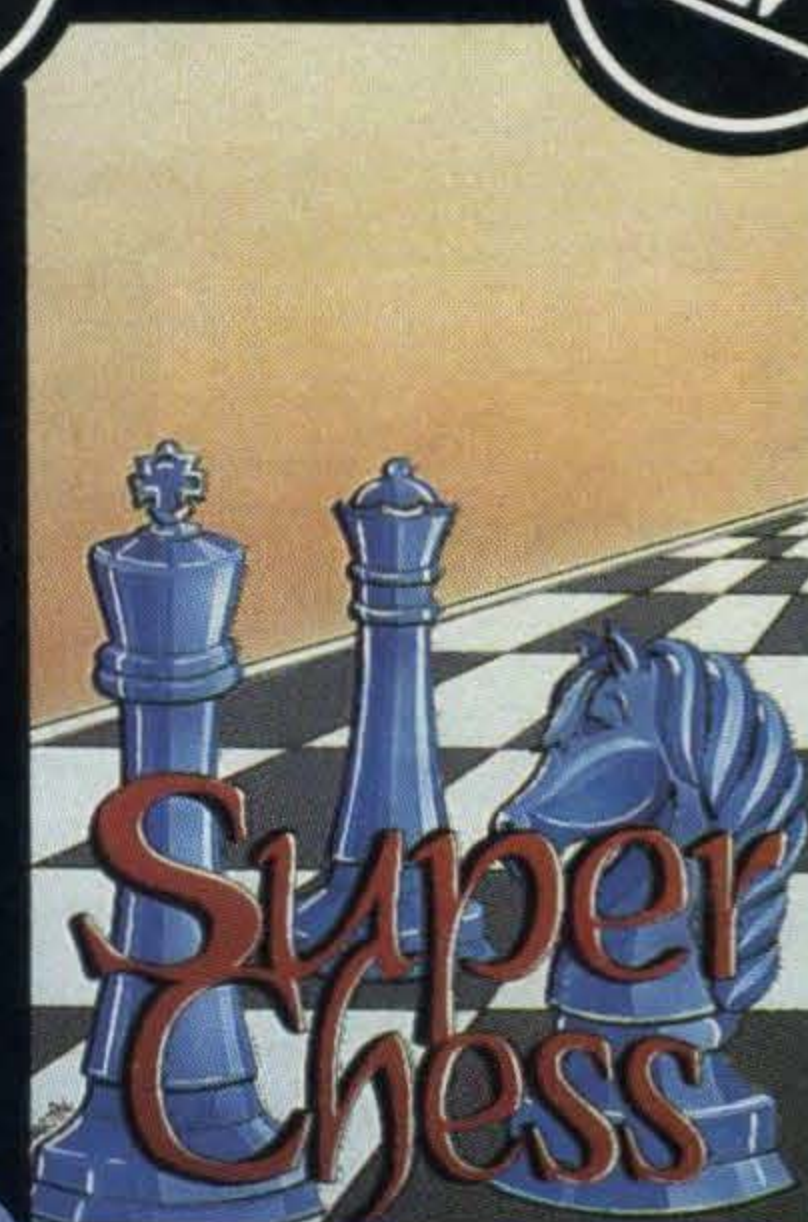
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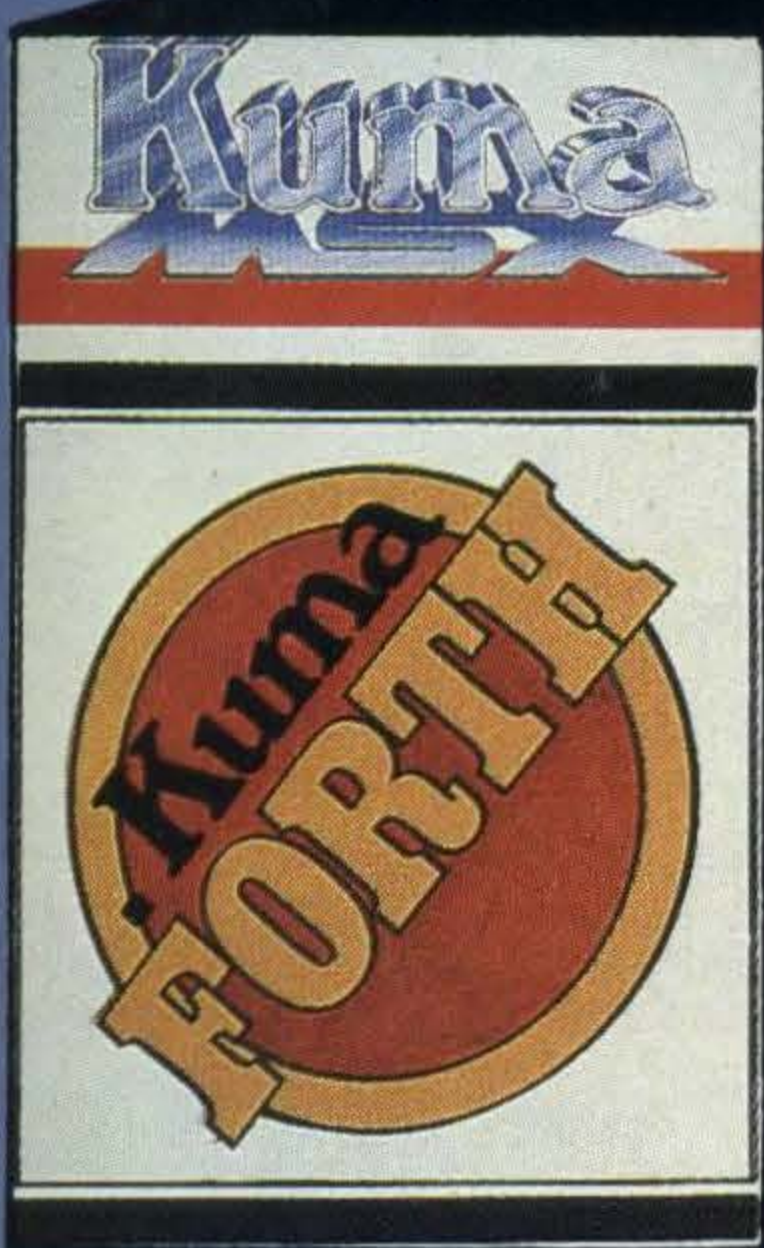
'Fruity Frank



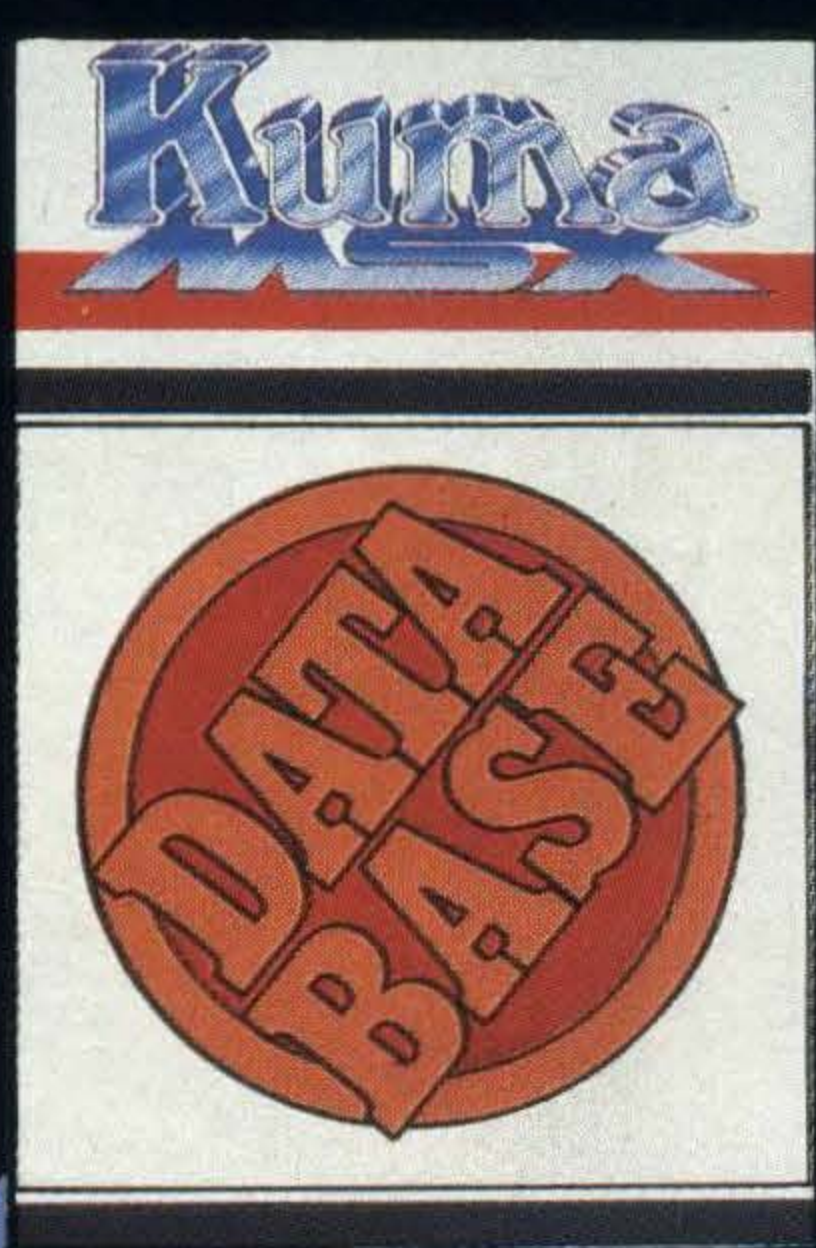
Shnax



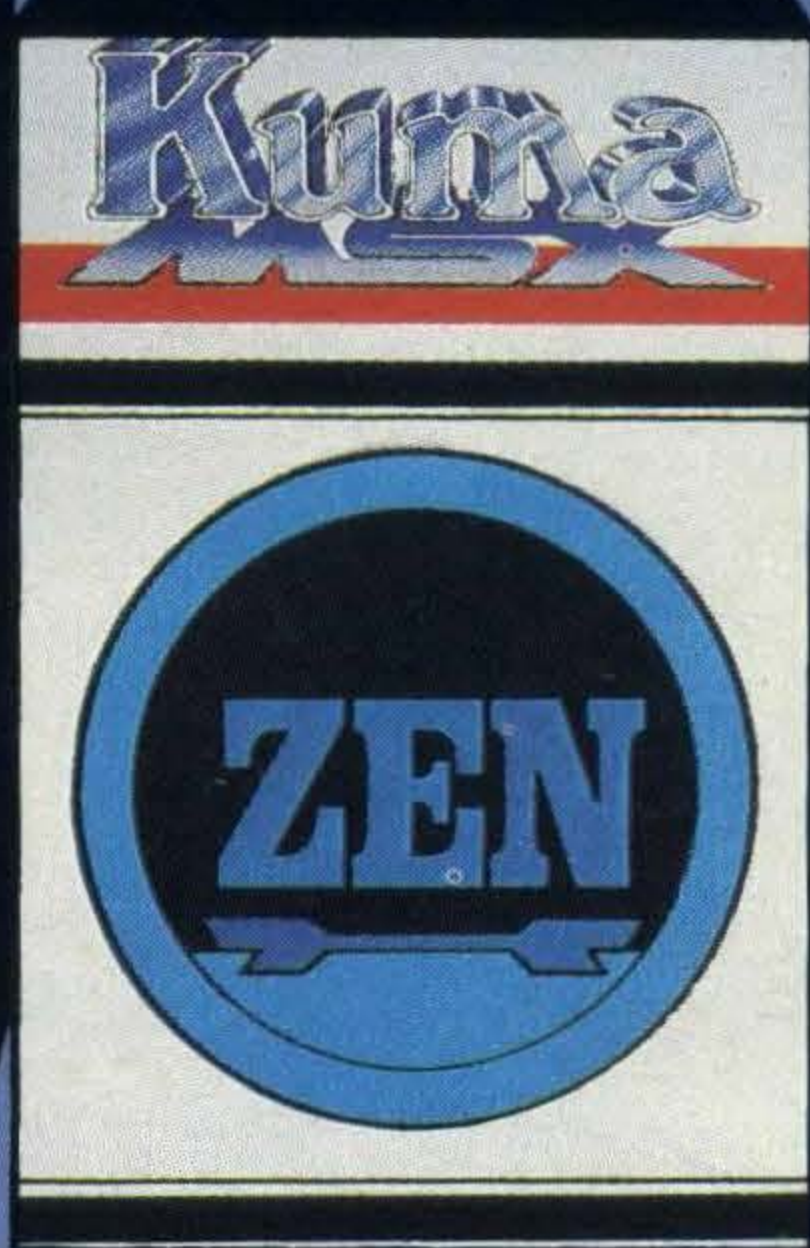
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## THE DAM

Avoid Tiredactyls and the mighty Grog! Follow the straight and narrow; cross each bridge as you come to it; take the high road and the low road and you can learn the Meaning of Life too!

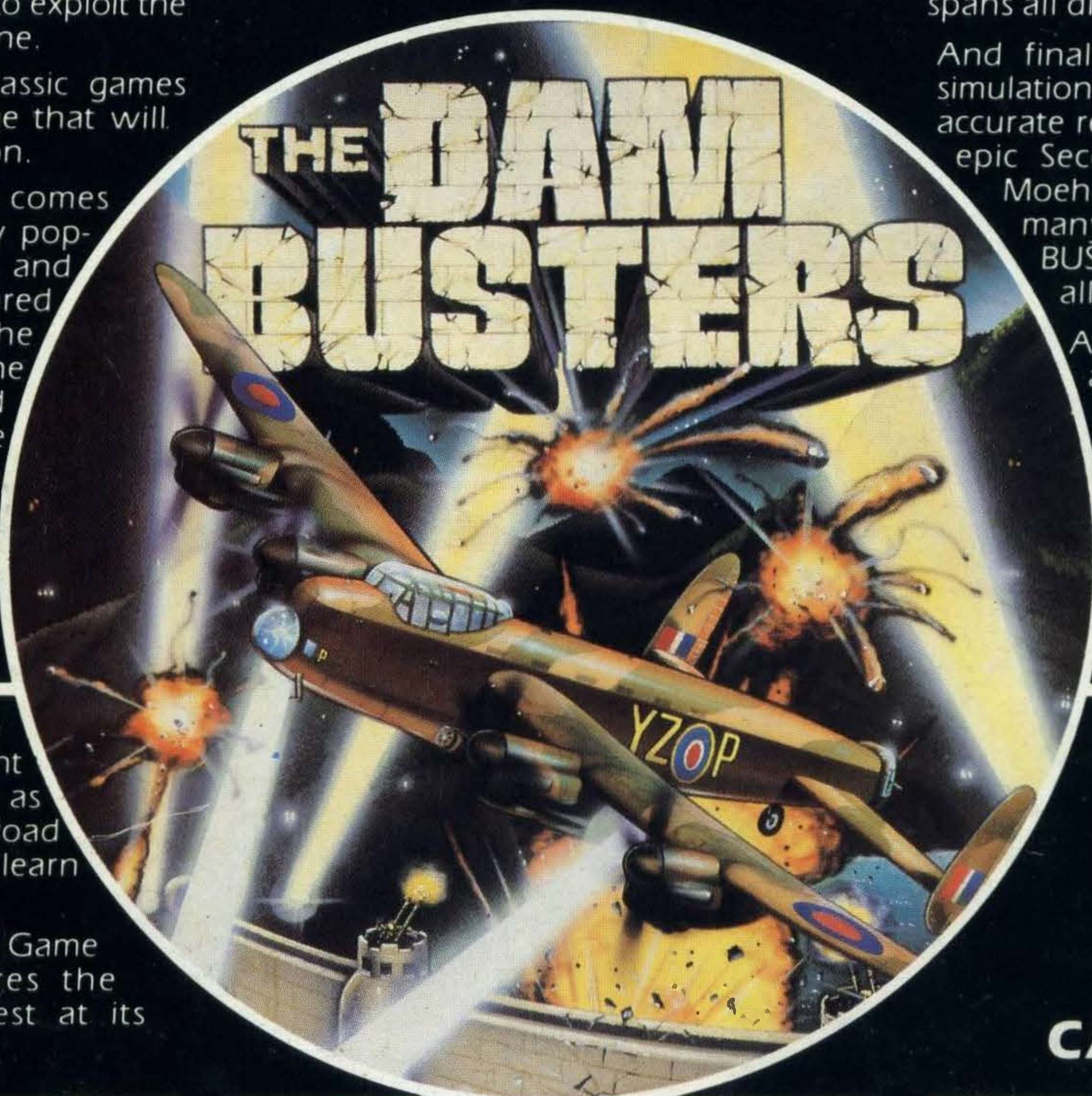
From the Ultimate Play the Game stable, GUNFRIGHT captures the atmosphere of the Old West at its wildest worst!

As Sheriff Quickdraw you'll have your hands full just keeping yourself and the townsfolk alive, never mind dealing with the likes of Quick Draw McGraw, fastest gun in the West!

Filmation is a technique developed by Ultimate to produce games of unique challenge and complexity. NIGHTSHADE employs Filmation II, and the result is an adventure of gargantuan proportions which spans all dimensions.

And finally there is DAMBUSTERS. This simulation really needs no introduction; an accurate reconstruction of 617 Squadron's epic Second World War raid on the Moehne, Eder and Sorpe Dams in Germany's industrial heartland; DAMBUSTERS is already regarded as an all-time software classic.

All these great games are available now especially for the MSX at better computer stores nationwide.

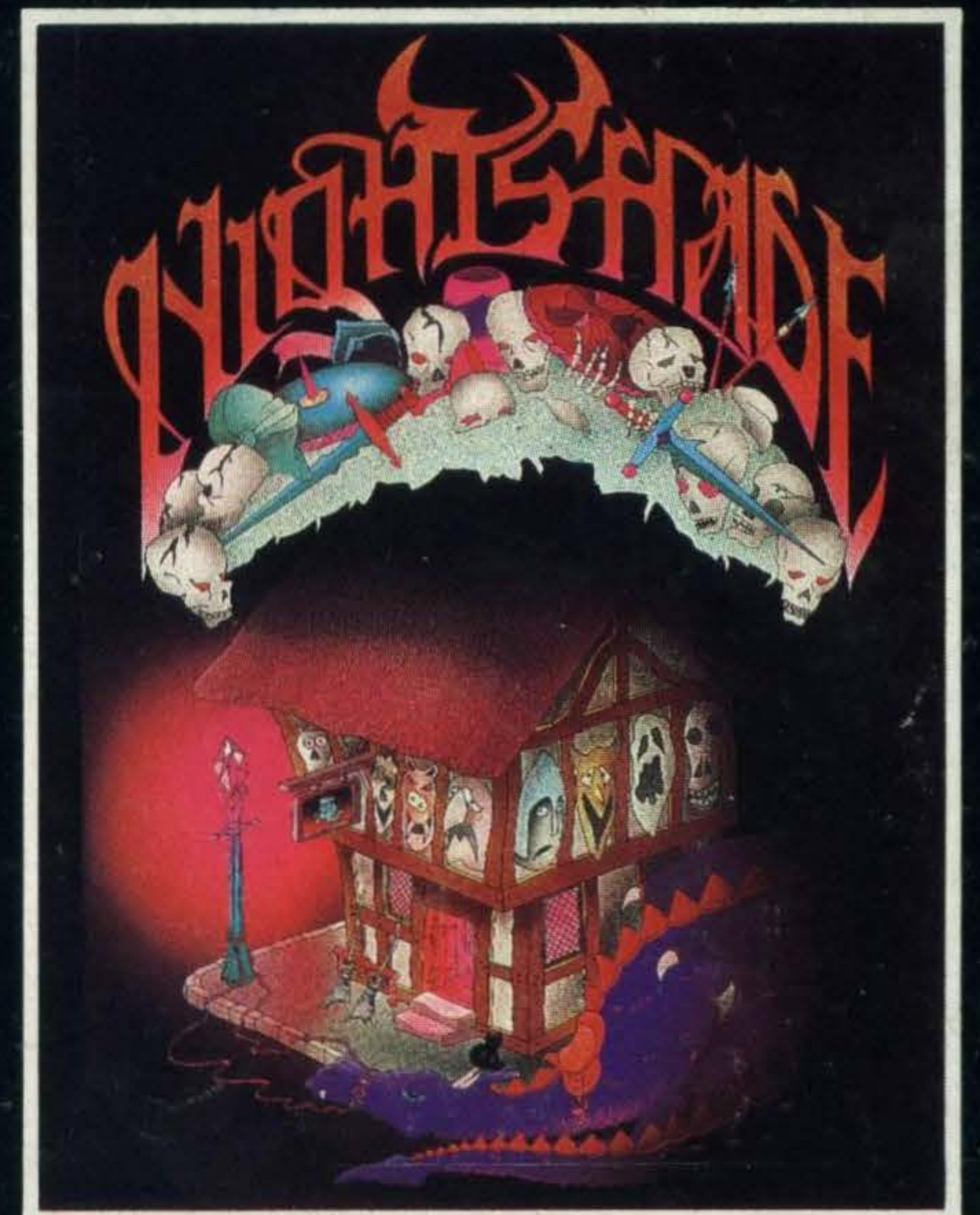
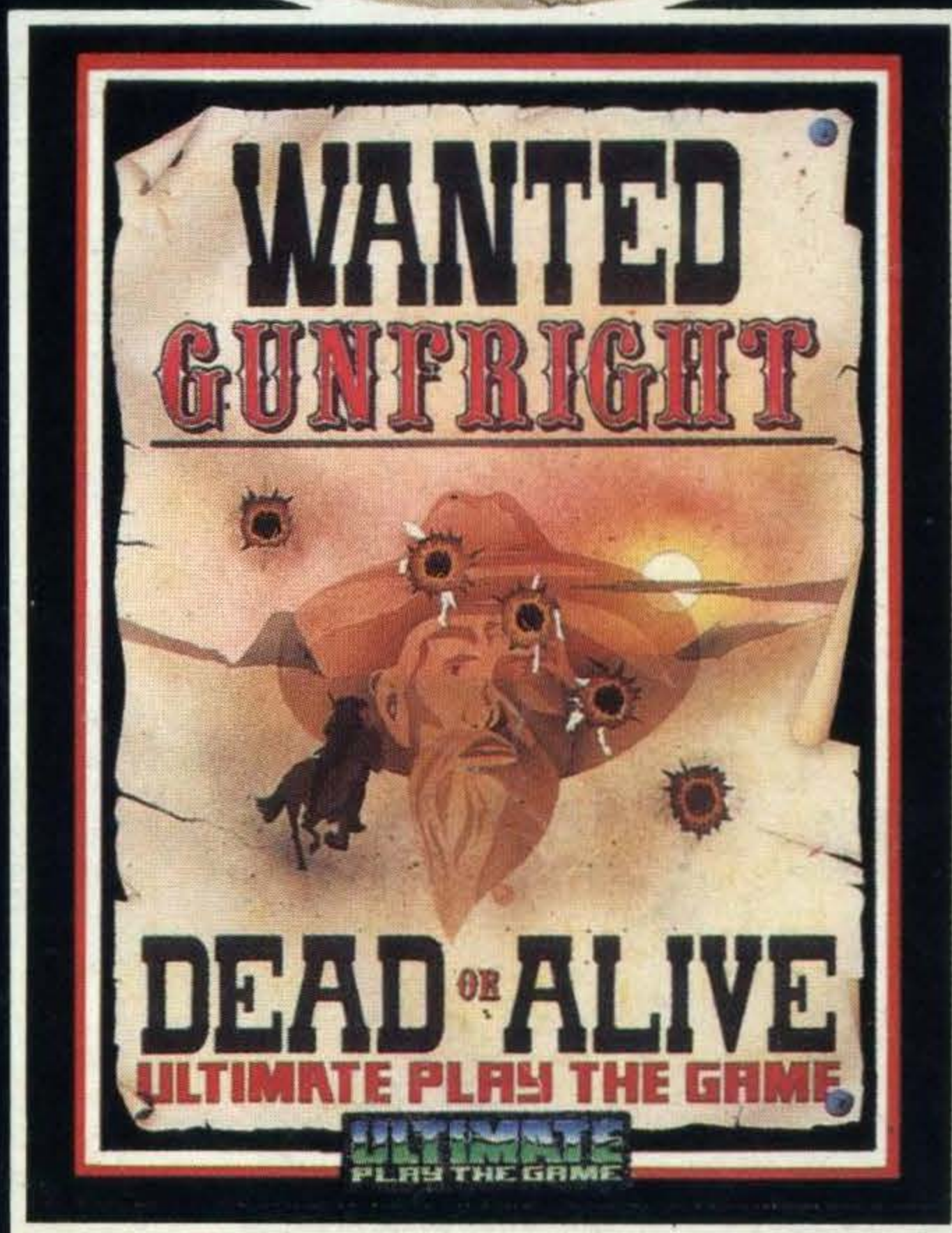
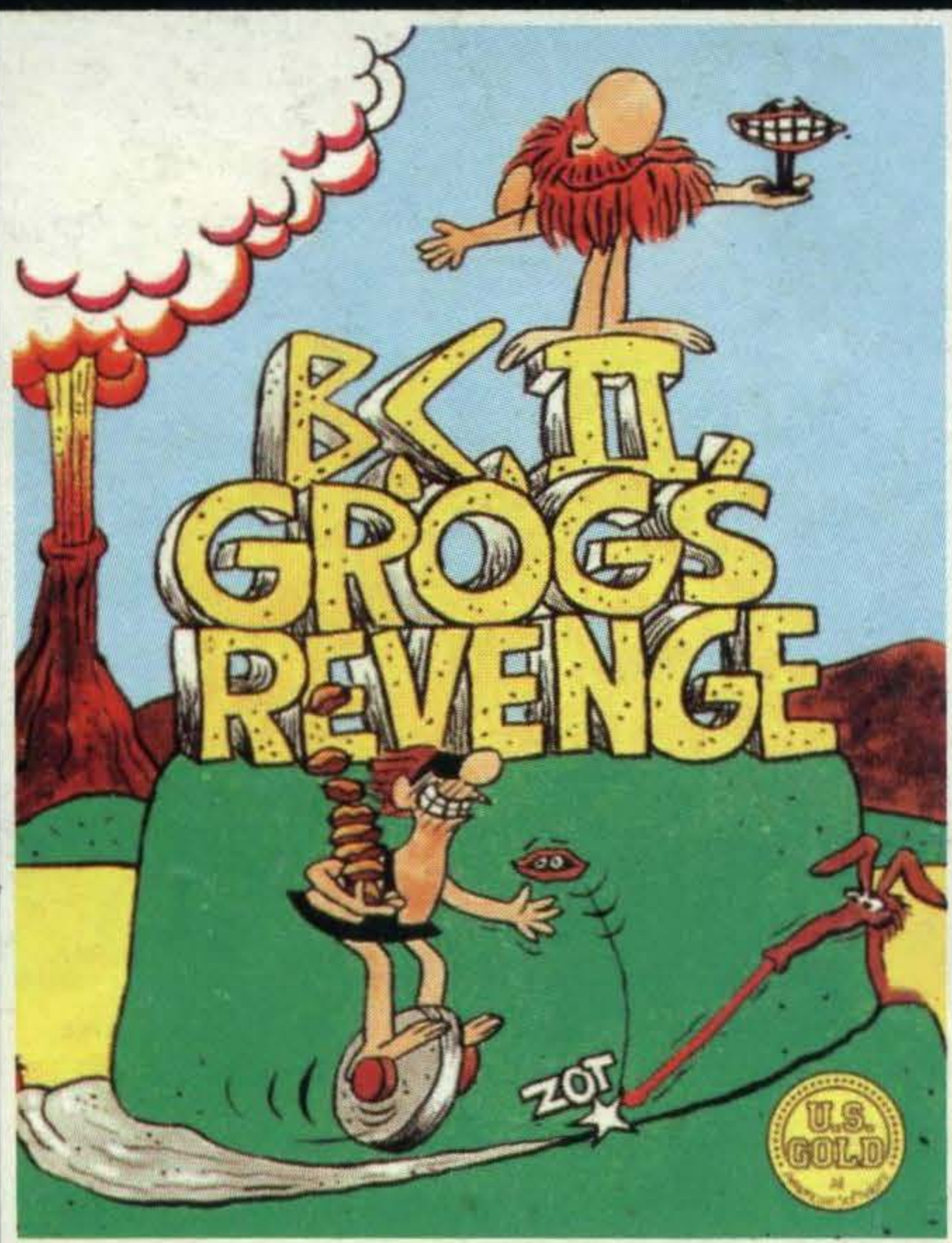


## BUSTERS

## MSX

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