

FEBRUARY 1984

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# COMPUTER & VIDEO GAMES



# FREE

# 52<sup>page</sup>

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## MODEM FOR THE DRAGON

Dear Sir,

In your December issue you stated you do not know of any modems currently available for the Dragon 32.

Not at Microcomputer Resources Ltd manufacture a FrontViewdata interface which will allow you to link up to Microcom.

Maplin Electronics supplies also sell a RS232 interface kit which enables Dragon users to link up to virtually any Viewdata system or even Maplin's own Castrol system. S. C. Percell.

Andrew Adams

## BBC MICRO MYSTERY

I own a BBC Model B and at the side of my mouse keyboard there is a hole which is covered with plastic. I know I am not telling you anything you don't know but along with a line of my friends who also own BBC where I could not resist the temptation to push it in.

When I came off, I found that instead of using an interface for the ROM cartridges, which I had expected to see, I saw over half of the loudspeaker overlapping from the position where it should have been.

This suppositioning of the loudspeaker accounted for the coarse sound I had been getting even on a -15 setting. This was easily overcome by first taking the cover off and moving it slightly. But I still do not know what I set out to find in the first place so could you please tell me when the ROM cartridges will be available in the shops? Jason Davis, Billesley, Essex.

Editor's reply: At the

present moment there are no ROM cartridges available for the BBC. However, we thought to be planning to release games cartridges some time in the future. As soon as they are out you'll be able to read about them in our Games News pages.

## STOPPING THE VIC

Dear Sir,

I am writing to enquire what POKE command can be used on the Vic-30 to stop the STOP key functioning. I have even the use on cartridges for the Vic-30, so when the STOP key is pressed, which would normally break out of the program, the program will continue as normal.

Andrew Griffiths, Miffield.

W. Yoshitake, Editor's reply: The reset key — rather than the STOP key — can be disabled with this line: POKE 508, PEEK 508; -SPOKE 51150, PEEK 51150; AND 127. The keys can be turned on again with this line: POKE 508, PEEK 508; -SPOKE 51150, PEEK 51150; OR 127.

## POKEING THE ATARI

Dear Sir,

I own a 56k Atari 400 and recently I came across a few POKEs. When I POKE 540.0 I discovered I now have 60k. Is that true? And also am I the first to discover that POKEing 70.4 into the memory gives a text window to C64? Finally, the POKE which was published in December's issue was in the Atari Basic reference manual anyway! (Appendix 1.3). Michael Park, Swansley Bridge, W. Yorkshire.

Editor's reply: Unfortunately, repeating

your Atari's memory is not so simple, or cheap.

As you type in a Basic program, the amount of free memory goes down. The computer, therefore, keeps a counter in its memory with a value to tell it how much memory is remaining. So when you ask your machine how much free RAM you have, it simply looks at the value of this counter.

You have probably guessed that part of this counter is at location 242, and what you are doing is altering this counter. This does not alter the amount of RAM, but alters the amount which the machine THINKS that it has!

If the machine thinks that it has more memory than it should, it will try to let you type in a larger program than allowed. This will then cause a crash, probably ending all your hard work.

The only way for such a POKE command is to fool your friends into thinking that you've typed a 99k program in, in 18 minutes!

## INTERFACE PUZZLE ...

Dear Sir,

I will soon be purchasing a ZX Spectrum and am puzzled over which interface to buy with it. The interface module I'm after should be able to be used with most of the software for the Spectrum 48k. As most of the games from Ultimate, Imagine and Silversoft. Another factor to be taken into account is price. I would want it to cost about £15 to £20, maybe a little more. Please could you also recommend the best compatible interface with price to be taken into consideration. E. J. Chapman, Wrexham, Chyrp.

Editor's reply: There are

a lot of joystick interfaces around and all use different software. Most new software will probably be written for the new Zenith interface 2 although the only one that works with all games would be a programmable interface such as the A217. One of the most popular joysticks is the Kensington interface and joystick, with a price of around £30.00.

## WORRIED TEXAS ...

Dear Sir,

Recently, whilst browsing through the magazine shelf of my local W. H. Smith, I noticed a computer magazine concerning the Texas instruments are pulling out of the home computer market due to great financial losses.

Two questions — does this mean that TI will not be manufacturing any more cartridges, modules, ROMs (whatever you want to call them) and secondly, does this mean the price of printers, disc drives, modems etc. will come down in price?

The article says, "so many as half a million units could be sold off before Christmas for as little as £80 each." I, being a TI user, am worried in case my machine goes wrong — will TI repair it? Paul Rodden, Rochester, Kent.

Editor's reply: TI's announcement that they are pulling out of the home computer market is bound to lead to slashed prices on peripherals, software and hardware.

On the subject of servicing, TI have promised to offer a service to all people who bought their machines. There is considerable pressure on them to keep this promise and keep faith with the public.

### BLASTERMIND! ★

In first place, this might seem to be just another version of a very popular game. How wrong can you be? True, the start is simple enough. The Spectrum picks a table of numbers at random with a variation of levels of difficulty — and invites you to do the sums. You then see it in turn to guess each others code from the clue supplied after each guess. An extremely well written, fast and very clearly displayed game, with almost inevitable defeat.

This app exactly as intended but unfortunately, something went wrong. During the programming stage, a preliminary message began to appear on the screen. At first they were so few they were not taken too seriously, but soon they could no longer be ignored. Sometimes the Spectrum had been given a personality — a rather derisive, belligerent, disdainful, hateful, horrible and

SPECTRUM 48k £5.95



Slide 5 contains a version of the game compatible with the excellent Consul speech unit — even worse!

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# MAILBAG



## QUALITY NOT QUANTITY?

Dear Sir,  
I have recently heard people criticising the CDS Colecovision because of the price of the games. These people are mostly Spectrum owners and I feel that this is a certain case of "quality not quantity". The Coleco system has by far the best graphics, better than nearly all home computers, and the games are ones which gamers are not likely to be bored with quickly.

The software list will be enhanced by Actionaid, Fantasy and Magic, the latter's games for Intellivision being starting, so the games for the Coleco should in theory be truly magnificent when you consider the huge amount of built-in ROM.

I feel that anyone who seriously wants arcade-type games at home should go for the CDS Colecovision. Should this letter be published, I feel it would put many Spectrum owners very firmly in their place.

Tom Stungo,  
Arlington,  
Bucks.

## REVIEWER RAPPED

Dear Sir,  
I am writing to you because I am disgusted with your reviewer's views on the Electron. I do realise that the reviewers are the opinion of one person, but before he makes any comparisons with another machine he should make sure he has all the facts.

Finally, I would like to know why in his review of the Acorn Electron he states that it's a superior machine to the Atari? The Electron cannot produce sound through the television like the Atari. It has only 18 colours and Atari has 256 with 25 displayed at any one time.

There are many more differences, which in my opinion make the Atari far superior. I am slightly biased, but like your reviewers seem to be towards the Electron and BBC machines.

In the review on the 600KL and 600EL he states that the 600EL is 16K standard, but it can actually be expanded to 64K, and the 600KL comes with 16K. Both machines have 16K ROM and not 16K RAM as stated.

I would also like to add that one great advantage that the Atari gives, is the compatibility between the old and new machines. Unfortunately, a lot of manufacturers (i.e. the Acorn, Amstrad and Electron which are two totally different machines requiring separate software), do not consider the users. Therefore, I thank Atari for enabling me to keep all my software library which has cost me over £200 plus, when I upgrade to their latest model.

I would just like to say that I find your magazine excellent, but please review your reviews before you publish. Wrong information could easily mean the downfall of a good machine. S. J. Green, Chesham, Manchester.



## VECTREX ERRORS?

Dear Sir,  
I recently purchased the Vectrex computer games system and have found a few faults with two of its games.

Spike and Minotaur.  
The instructions for Minotaur say that when you clear three mazes you enter a new universe with space ships and space dust to contend with. So far I have cleared 24 mazes with no sign of a new universe at all. Is this a misprint in the booklet?

The second game Spike gives you a lot of points if you move Mally's cage to the far left of the screen and jump for it. You lose a life but you can get a maximum of 20,000 points for doing this. Is this a fault or is it intended? J. Mansford, Doncaster.

S. Taylor.

## SNOWFLAKES FOR ORIC

Dear Sir,  
As it is approaching Christmas and the colder months, there will be some snow (hopefully). But just in case there isn't, here is a program for Oric 1 systems. It draws snowflakes and develops into quite a nice pattern when the screen fills up.

```
10 PaperBINE T
20 ERASE
30 FOR J=0A, 10
40 X = (RND(1)*300) + 50
50 Y = (RND(1)*100) + 50
60 P = (RND(1)*256)PATERN
70 CURSOR X,Y,1
80 T = (RND(1)*10) + 5
90 FOR A = 1 TO T CIRCLE
A,B
100 FB=INT (RND(1)*6)
110 NEXT A
120 GOTO 40
```

This program runs on a 40K Oric. However, for the 16K version just omit line 30. Chris Spraggs, Avelon, N Yorks.

## SPECTRUM COMPILER

Dear Sir,  
Having recently started a course at university which involves computer programming with Pascal, I am interested in buying a Pascal compiler for my 48K Spectrum to help me with my studies. Please could you tell me where I could get one and how much it would cost?

John Proben,  
Southdowns,  
Scotland.

Editor's reply: The **Soft Pascal** is available for the 48K Spectrum from **Soft, 13 Deacons, Chesham, Leighton Buzzard, Bedfordshire, LU2 9NR** for £29.95.

## STIX AND STONES . . .

Dear Sir,  
Although we were pleased to see that our game *Stix* for the Commodore 64 was reviewed in your December issue there does seem to have been some confusion on the part of your reviewer.

The game concerns a struggle to contain an evil bundle of energy known as the *Stix* as that is power can be harnessed for good rather than evil. Force fields must be built, using the "field synthesizers" provided. Each game starts with two.

There are a number of hazards to avoid — the most dangerous of these is the *Stix* itself, and to quote from the instructions supplied with the game:

"The second hazard results from a design fault in the field synthesizers (the manufacturers have promised to put it right in their next model, but that isn't going to help you now). If you pause for more than an instant while constructing a force field, the field stabiliser discharges sending a ripple of energy through the field that will destroy the synthesiser unless you can complete the field before the ripple arrives). Later on for the *Stix* you can see that the ripple makes as it moves through the field."

Unfortunately in the review this particular feature of the game is described as "a software design fault" and the reviewer finishes by saying that "Although the game was exciting to play, I feel this particular version will have to live out its shortened life before becoming a classic player's favourite". Disastrous!

I hope that this letter doesn't sound like your games. We've had so many scathing reviews of *Stix* that we can hardly the odd mediocre one. But to state that the program is being sold with a known fault in the software doesn't enhance our image, nor is it fair to the author, Andrew Pratt.

Peter Calver,  
Supersoft,  
Widewater,  
Middlesex.

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1. **Introduction**  
 2. **Background**  
 3. **Methodology**  
 4. **Results**  
 5. **Conclusion**  
 6. **References**

**Keywords:** *workplace spirituality, organizational commitment, organizational citizenship behavior, turnover intention, organizational trust, organizational identification*

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[illegible]

Source: U.S. Census Bureau, *Marriage, Divorce, Remarriage in the 1990s*, Washington, D.C., 1995.

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You can all stop holding your breath now! The moment you've all been waiting for has arrived. Yes, we're ready to announce the winners of our Computer and Video Games 1983 Golden Joystick Awards.

These are the awards that we hope will become a symbol of excellence in the software industry — a measure of a good software company and good products.

We know that many software houses work hard producing top quality software and provide good after sales service to their customers.

This is what Computer and Video Games hopes to reward by asking you, our readers, to vote for your top game and favourite software house — among other categories!

Since we first announced our Golden Joystick Awards several other award schemes have sprung up — but except no substitutes, C&VG's joystick truly reflect popular support for a game or software house because YOU have chosen the winners.

Throughout the year the C&VG office has been flooded with nominations for our various Golden Joystick Awards. A large variety of personal letters and personal preferences came to light as we analysed the results — proving that one person's favourite game was another person's bowl of cold porridge!

Literally hundreds of games for all the popular micro were nominated. But despite the number of home computers on the market — and the amount of software around — all our award winners were clearly head and shoulders above their competitors.

All the Golden Joystick Awards were presented at a special dinner held in London. Representatives from all the top software houses were there to see Radio One DJ and computer-huff Dave Lee Travis present the Golden

Joystick. We'll have a full report on the celebrations and the names of the winners in the next issue of Computer and Video Games.

Don't forget — if you missed your chance to vote in 1983 why not get in first for our 1984 Golden Joystick Awards! Make sure you have a say in the awards next year by filling in the coupon we'll send in our next issue.

We're also keeping the names of our winners secret until next month too — but all will be revealed in our March issue. Unless you are one of the lucky people with an invitation to our grand awards dinner that is.

Remember we are also taking this opportunity to launch our search for the software stars of 1984. Competition is bound to be even tougher this year with more and more great games on the market for the new generation of home computers — so we hope you'll help us make sure that the right people get our crowns.

We pride ourselves on being the top reader friendly magazine — so that's why we let YOU, our readers, select the winners. And this is why we feel that the C&VG Golden Joystick Awards are the only true reflection of what's best in the British software industry. Simply because YOU, the games players, choose the winners! And who can know better what makes a good game?

Meanwhile, thanks for joining in the voting for our 1983 awards — and if you think we've missed out a category for 1984 why don't you drop us a line — we're always open to suggestions!

There are a few surprises in the award line up — but we're keeping up the mystery until next issue! So don't forget to rub out and get your copy of C&VG on February 16th.



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# COMPETITION COMPETITION COMPETITION

## TERRAHAWKS WINNERS!

**Flaming Thunderbolt!** When we announced our Terrahawks contest, we never realised we'd start an invasion of letters and postcards which almost swamped the CBMG office!

We had to call in Tiger Resources, Kate Keenel, Zee and the rest of the Terrahawks team to help us get through the mountains of mail.

They managed to come up with two winners out of the pile and very soon Miss C. V. Gibson of Llanelli and Donald Gloss from London will be the lucky owners of a Philips C7000 video games console complete with Terrahawks cartridge! Your prizes are on their way.

## POT THE BLACK

No sooner had we cleared the giant pile of Terrahawks mail another huge flood of competition entries swamped the office — this time it was Pot the Black which caused all the excitement!

We asked you to help Freddy Franks, the man with the Golden Cue, clinch the world snooker championship by solving an a-maze-ing snooker puzzle.

And hundreds of you took us at our word. After we called in a 120 month motor to help us get through the mail, we finally managed to pick out 28 winners of Snooker games tapes, autographed by Snooker star Steve Davis and produced by new software house Visions.

We asked you to solve a maze and also if there could ever be a "break" of 100 in a game of snooker. And the answer is yes.

Here's how it works. Your opponent gives you a 150 start. You break off with a foul shot which gives you opponent four points, but leaves him unscathed. He nominates a colour for red, puts that for 1 and black for 7 then scores 107 — the normal maximum break in snooker. He then wins the frame, gets the requested black making a total "break" of 100. Simple when you know how!

### SPECTRUM

John Egan, Birmingham, R. J. Hewitt, Walsby, W. Williams, Julie Williams, Berwick, Graham, Arthur Barker, Oxford, Ruth, David Smith, Bedford.

### MSX

John Allen, Cambridge, Louis B. Jones, Southampton, J. Walker, Cambridge, A. Wainwright, Manchester, Brian Campbell, Dorset.

### COMMODORE 64

A. Larkins, Tooting, London, Greg Page, Wokingham, J. A. Jones, Southampton, Mr. Andrew Brown, Wokingham, Lewis G. W. Allen, Oxford, Kent.

### Atari II

Andrew Hogg, Woking, W. Peter John Ruddy, Brixton, Portsmouth, Thomas Fowler, Dorset, W. Walker, W. Barnard, Wokingham, Kate, Philip Morris, Ipswich, Bedford.

### MSX 80

John Colin, Rugby, Woking, Paul Wain, Woking, W. Jones, W. A. A. Jones, Woking, J. M. Nathan, Bedford, Wokingham, Peter, Goring.

## LEGGIT FOR MORE LEGGITS!

What's happened to all you eager Atari addicts in the Portsmouth and Southampton areas?

We've still got some free Leggit tapes to give away, courtesy of Imagique Software Ltd, to give everyone a fair chance — we've decided to go online.

Would the winners of the AtariLine one competition, featured in the June issue of CBMG, please get in touch with Clive Edgely on 01 278 0088?

There are five winners in Times Travel's Overseas Pyrotechnics competition, featured in the November issue of CBMG. All five winners have been announced in the January 84 issue — would they please get in touch with Clive on the same telephone number?

write and offer the tapes to all of you!

So, calling all owners of the Atari 400/500 and 600XL, fill in the coupon below and send it back to us — it's first come, first served — and the first ones into the CBMG office will be the lucky winners.

Send in your coupon, marked Leggit, to: Cliveper 4 Video Games, 4 Hertal Hill, London, EC2R 8EJ.

Name .....

Address .....

## HANDS ACROSS THE WATER...

You've probably noticed from our Mailbag pages that Computer and Video Games releases the parts of the world that other computer magazines just can't reach. And recently a few of our overseas readers have been asking for a competition which runs for a bit longer than just a month to give them a chance to win.

Many of our overseas readers don't get their issue of CBMG until well after the rest of you — simply because of the vast distances involved. So we've decided to run a competition just for them.

OK overseas CBMG fans here's what we want you to do. Send us a good games program — that's all. We know there must be some great games writers lurking in the far flung corners of the world — and we want to find you! Make the game as original as possible — that's our usual plea to programmers — but we're always interested in a top quality conversion of an arcade favourite or computer game.

We've got three Sinclair Spectrum computers up for grabs, plus some software from CBMG's vaults thrown in, for the top three programs selected by our team of reviewers. Runners-up will receive Computer and Video Games Year Books and The Champ t-shirts.

The winning programs will be published in CBMG and you could find yourself receiving an extra £20 if we vote your program a Game of the Month. All the programs we receive will be considered for publication. The closing date for the competition is July 19th 1984 — so you've got plenty of time to think about a program and get your entry off to us. Please fill in the coupon below and send it to Computer and Video Games, Overseas Readers Competition, Duncraig House, Hertal Hill, London EC2R 8EJ.

Remember, this contest is only open to CBMG readers who live in Europe, Australia, New Zealand, Hong Kong — anywhere outside the British Isles!

### OVERSEAS READERS COMPETITION

Name .....

Address .....

Name of program ..... Machine it runs on .....

Any add-ons, extended basic, expanders etc? .....

Any other information .....

# COMPETITION COMPETITION COMPETITION



# G·A·M·E·S N·E·W·S



## NO EASY ESCAPE FROM SCARTHORPE!

### URBAN UPSTART

Tired of fighting Biza or exploring futuristic alien cities. So you yearn for some 18th century adventure?

Urban Upstart is an adventure set in a present day inner city area called Scarthorpe. "It isn't as tough that even the dog can't bark leaves. The sort of town where rebuilding means a war of paint and where people govt up to govt up for a job." It is to save the advertising blurb at any rate.

You play the part of a street-wise kid who's trying to escape the horrors of violence and deprivation in Scarthorpe, but escaping from the town is no easy task. Coked muggers and corrupt policemen lurk around every street corner. Every location has a graphic display of the scene, ranging from a hospital to a building site.

If the secret police get too much, you can always save a game on tape and put your baseball bat down and have a rest.

The game runs on a 486 Spectrum and is available from Richard Shephard Software at an asking price of £9.90.

## GOOD NEWS FOR NEW WILLY FANS!

### WINGER WILLY

Meet Willy, the hero of Mug Biter's top-selling Manic Miner, is shortly to be starring in a version of the game for the 64.

The game has been taken over by a new company set up by Matthew Smith — the author of the Spectrum version. His Software Projects company will now be marketing the game.

When the 64 version goes on sale, Software Projects will be

announcing details of a competition, with a super prize for the first person to complete all the levels of the game.

Conversions from Spectrum to 64 are proving to be some of the most successful — and Software Projects are confident that the Commodore version of Manic Willy's adventures retains all the features of the Spectrum version.

Further good news for Willy fans is that the latest word coming out of Liverpool is that Manic Miner Part II is well into production.



## SCOPE FOR ARCADE ACTION

### SCOPE 64

If you like the sound of writing fast, arcade games without the slightest knowledge of machine code, then read on.

Scope is a new, simple graphics programming language available for the Commodore 64. The game, its makers claim, is designed for writing fast arcade-style games without headaches.

SCOPE stands for Simple Completion of Plain English, which gives a clue to why the program isn't so fast. The program is in fact a very sophisticated com-

piler. The beauty of Scope is that it allows you to enter your game ideas in plain English words which it then miraculously compiles into machine code instructions.

The makers of the game stress that Scope was specifically designed as a graphics language to create games comparable with professionally produced software from the youngest of children can use it with ease.

Scope is produced by Interactive Software for the Commodore 64 and should retail at around £14.99.

## BASIL AND THE BUBBLE MONSTERS

### BUBBLE TROUBLE

Bubble Trouble will have you foaming at the mouth as you battle against mutant bath bubbles in a new game for the ZX Spectrum.

The game puts you in the unenviable position of Basil the Bunter, a small time cook who's taking his chances against the infamous bubble monsters guarding an ancient, treasure-filled tomb.

Basil has over 150 idioms to choose from, but he can only

remember enough to make for one minute picking up valuable crystals, jewel-encrusted swords and precious stones before he has to leave the mine.

Time isn't the only thing against Bunter Basil — bouncing bubble monsters attack Basil from all sides. You must help Basil to avoid being drowned in the safe and collect as much of the tomb's treasure as you can.

The game has three different levels of difficulty, 150 different mazes, fine scrolling graphics and sound effects and is available from Arcade Software for the ZX Spectrum 48k for £9.90.

## SINISTER PRECIOUS STONES

### DOOMSDAY CASTLE

Saving the universe is never easy, especially when your adventures include the phenomenonously spooky Gogly Bird. The Gogly Bird is one of the many galactic ghosts you'll meet in Domesday Castle, a new real time graphical adventure game for the ZX Spectrum.

The hero of the game is Zapp — remember him from Fantasy's other smash hit game, the Pyromaniac!

Domesday Castle is set in a universe ruled by Scarthax, the most evil being in the galaxy's history. Scarthax has searched the universe and collected the six ancient stones of life force. Now that he has brought them together under his control, he awaits a power far greater than the most horrifying nightmares could imagine.

The stones' awesome power is sending waves of corruption to every corner of the cosmos. Your task is to guide Zapp through the Domesday Castle, attempt to wrest the stones away from Scarthax, and turn their power against their former master.

Domesday Castle runs on a 486k Spectrum and is available from Fantasy Software costing £9.90.



# G·A·M·E·S N·E·W·S



## DUNGEONS IN DANGER ON ORIC?

### RUMELORD

Handheld Oric addicts may look down their noses at 'top-of-the-line' computer adventure games, but a new game, *Rumelord*, may

change and then loaded into the game. This was a whole library of different roles can be made.

*Rumelord*, like its board game namesake, is set in Celtic Britain. From here on, the usual Dungeons and Dragons' tactics of murder, arson and the odd bit of pilage take over. It sounds like good clean fun to us!

*Rumelord* is available from Modular Concept Productions for the Oric I and costs £1.50.



take their faith in Oric's supposed superiority.

*Rumelord* is based on the role-playing fantasy game of the same name and is different from most computer adventures in allowing you to develop certain characteristics of your chosen role. As in *Dungeons and Dragons*, each character has different points of wisdom, strength and dexterity. *Rumelord* lets you create these for yourself, each one having its own particular strengths and weaknesses, good points and bad points. Furthermore, the game doesn't just consider aspects of the player's personality, but also how much equipment and experience each one has acquired during their 'lifetime'.

Once a role has been created — a warrior or magic user for instance — it can be saved on

## HERE IS THE WEATHER FORECAST

### KRIEGSPIEL

Weather forecasting becomes a vital part of military tactics for the commanders of late warfare game *Kriegspiel*. An Italian offensive can suddenly grind to a halt as the landscape disappears below a blanket of snow or floods make waterways impassable.

*Kriegspiel* was first written by Ron Fazio on the Tandy TRS-80 in the late 70s and this early version never appeared in *Computer & Video Games*. Now Ron has utilised machine code and the Oric's colours to bring

new life to the game.

The action takes place over four screens of map with two opposing armies of heavy tank divisions, light tank divisions and more laying infantry, battling for supremacy over a landscape of mountains, rivers, forests and bays.

It's a game for two players or one player against the computer and can provide a simple 30 minute onslaught or both sides rush to take the opposing capital or it can be as tactical as chess.

The landscape offers different advantages to infantry and tanks and a good commander can use the lie of the land to boost his attacks.

*Kriegspiel*, available from Beyond Software, costs £9.95 for the Oric 12 and can be played by keyboard or joystick.

## FIRST OF FELIX IN THE FACTORY

### FELIX

All those who received an Oric for Christmas won't be frustrated by a lack of games software in the New Year.

Most home computers in the past have been plagued with a dead end! For a few months after their launch, before the independent software houses got their act together and started producing games, it hurt.

But it looks like the Oric's owners, problems won't be finding software for their computer, but choosing between the games that are about to flood the market.

Two companies who are leading the way in Oric software are Acornsoft, the software division of Acorn Computers, and Program Power, a company that specialises in BBC software.

Program Power have released a range of ten games for the Oric including conversions of some of their most successful BBC games like the best selling *Killer Santa*.

The company haven't stuck to just converting old games but have come up with their own.

*Felix in the Factory* is the first in a series of Felix adventures that Program Power are planning. The game places you in the position of the industrious Felix who is in charge of a run down factory for the weekend.

The rusty old generator in the basement of the factory keeps running out of fuel and you have to help Felix spin it with fuel before the entire factory grinds to a halt and production stops.

Felix must negotiate the rusty old ladders and conveyor belts to reach the generator, but his progress is slowed by gremlins who inhabit the building when the workers have gone home.

Felix's only hope of getting past them is to find a platform and knock the nasty gremlins off the generators and stop them putting a stopper in the works.

Another hazard is the giant rat that swarms across the package in the factory's corridors. The only way to get rid of the rat is to get up and grab the bag of poison hanging from the ceiling. Felix in the Factory is available from Leeds-based Program Power for the new Oric and is priced £1.95.



# G·A·M·E·S N·E·W·S



## QUASI WILL GIVE YOU THE HUMP!

### HUNCHBACK

It's a few centuries since the legendary Quasmodo first attempted to save the fair Camerolls, and carry her off to the sanctuary of the Notre Dame's famous castle tower.

But the hunchback has swung right back into the thick of the action. Notre Dame's becoming chimes will ring out again as the world's best known bell rings into your TV screen in the unlikely guise of a video game hero.

Quasmodo's task is the same as ever, to save the beautiful Camerolla from the clutches of the evil Archbishop and his cronies.

You must help the unfortunate truggle jump flaming towers, swing across swirly gits and avoid loyal knights ready to thrust a lance into Quasi's hunched shoulders.

The game is played against a scrolling background of the cathedral. Each level consists of 15 screenshots of high speed action and is gilded with more and more difficult obstacles for Quasmodo to overcome before he reaches his true love.

Hunchback is a direct copy of

the original arcade game of the same name and has been produced with full co-operation of the game's original manufacturer Century Electronics. It's the only official version available on any home computer.

Hunchback is available for the Sinclair Spectrum, Dragon 32, Commodore 64 and Eric computers in late December from the Manchester company, Games Software for £9.95.

favorite hobby is a spot of hot air ballooning. He has decided to go on a marathon flight to test out the brand new balloon he has just acquired.

Like all great heroes Nathan Wigglesworth would never think of embarking on a trip of a lifetime without the help of a little long pat V.C. Santos.



## WHEN THE BALLOON GOES UP ...

### CRAZY BALLOON

Around the world in 1987 Crazy Balloon certainly seems to make it possible on the Commodore 64.

Crazy Balloon takes you back to the age of romantic adventure where the sky's your limit and the far off horizon is your destination.

The game places you in the shoes of Nathan Wigglesworth, an eccentric explorer whose

like Nathan, T.C. enjoys a great adventure and is quickly ready to take off with his old pal.

As Nathan and T.C. start their journey, the weather report is good but many obstacles lie in the way of the chance's expedition. You must help them manoeuvre the balloon over cliffs and steepcliffs.

Twenty six dangerous flight levels have to be completed before the two can claim the title of the World's Greatest Aeronauts.

Crazy Balloon is available for the Commodore 64 and is joystick compatible. The game is produced by the newly formed company Software Projects and costs £2.95.

## JOIN THE CLUB AND WIN A BADGE

### RIVER RAID

Amnesia's top independent video game manufacturers, Activision, have just released versions of two of their most successful games for the Atari 400/800.

River Raid is a super-ten-up, all action, scrolling shoot-'em-up. You are flying a mission up river to destroy all enemy shipping and bridges in hostile terrain.

Activision will reward anyone who can score a million points with a River Raiders Club badge.

Also converted for the Atari home computers is the hit VCS game Kaboom. This challenges you to catch all the bombs being hurled by the mad bomber before they hit the ground and explode.

The games are in the shops now at £29.95.

## MERCENARY SAVES THE GALAXY!

### NEOCLIPS

The galaxy is facing the most dire crisis in its history. Neo-clips, a renegade planet and a member of the Colonial Federation has been invaded. As the universe's foremost galactic mercenary, you must liberate the inhabitants of Neoclips from the alien invaders.

The invaders have set up a defence system of radar towers to detect any ships entering the planet's atmosphere. Your ship has been designed to withstand 12 collisions with the towers or with aggressive alien guests.

The game is written in a 100% machine code and includes a joystick option.

Neoclips is available from Coventry-based PSS for the Commodore 64 and costs £1.95.



# The No.1 Football Game

2x 288k for  
2x Spectrum 48k



## Football Manager

Designed by Kevin Jones

This outstanding game of skill and strategy is now widely available and you can join the many thousands of satisfied customers who have purchased the game. This is no five minute wonder – you will be playing this game for hours over many weeks (we know – our customers tell us!)



Kevin Jones

Some of the features of the game are:

- Matches in 3D graphics • Transfer market
- Promotion and relegation • F.A. Cup matches
- Injury problems • Full league tables
- Four Divisions • Pick your own team for each match
- As many seasons as you like
- Managerial rating
- 7 skill levels
- Save game facility

# addictive

288k Club  
some computing needs to sort it

Comments about the game's price and our customers

"FOOTBALL MANAGER is the best game I have yet seen on the Spectrum and my personal favourite of all the games on this machine... In the opinion of the person it is on, it is the most realistic game ever done in the field of computer games... The opening play of the game is like a short set piece of match highlights which show little else than turning around a pitch, shooting, defending and scoring... It is a computer game but people who computer game usually of 4 hours or so, which happened on one Friday evening, will be grateful to know that there is a game to top it. FOOTBALL MANAGER has everything it could... The

original Addictive Games, certainly deserve the name." *Rating: 19/20 (Practical Computing - August 1985)*

"When I first saw this game I spent the last part of the weekend playing it. Since then I have returned to it more often than any other. The truly addictive quality of this game is the remarkable way it makes the non-football manager's experience... (Personal Computer Games - Summer 1985)

"It's my own fault you did warn me – I got excited and completely hooked on FOOTBALL MANAGER." *(Mr. A. Wright - Lancashire)*

"It is by far the best software game that I have seen for the Spectrum." *(Mr. H. Lincoln - Surrey)*

"I congratulate you for a marvellous game which keeps the player enthralled." *(Mr. H. Cressley - Cliftonville, Wales)*

"I am willing to say what a great game it is I have spent over 40 hours on it." *(Mr. G. Peam - Gloucestershire)*

"Your FOOTBALL MANAGER game is terrific." *(Mr. H. Cunningham - West Bromwich)*

### Programmers

Football Manager is a computer game which is designed to be played on the Spectrum. It is a computer game which is designed to be played on the Spectrum. It is a computer game which is designed to be played on the Spectrum.



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ATARI 2600



JET PAC



ATARI 2600

Our Game of the Month this issue is *Atari 2600*, which is rapidly gaining cult status among games players everywhere. Read our view of this interesting adventure style challenge on page 31. Another of Ultimate's best games was *Jet Pac* — find out if that winning formula has survived the transfer from Spectrum to Vic-20 on page 28. Do you like war games or strategy games? Then turn to page 32 where you'll

find our review of *Stonkers*, a tank game with a difference. We also look at the latest offering from new software company, Beyond. It's a maze style adventure for the Atari with some stunning opening graphics. But what about the game? Find out on page 31. Commodore 64 owners can check out *Shamus* — the game with the private eye theme — on page 32. And that's just for starters! Turn the page for a few more surprises.



# The PARATROOPERS have landed

**They will make your computer go crazy with fear.**

*"One of the best examples of user-defined graphics that I have ever seen, along with excellent sound effects"*

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...Terry Grant, Rabbit software director

*"An obscene celebration of slaughter"*

...Home Computing Weekly

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...Terry's mum

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OF HERE!



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## IMPRESSIVE ALL ACTION ADVENTURE

### FOUR GATES

If you're after a good game for that Vic you got for Christmas then this is certainly worth a look.

Four Gates to Freedom is another in the Action/Adventure series from Phoenix Software. The game comes on two separate cassettes with an introduction action game on one and an adventure on the other.

The catch is that you need a password to load the adventure, and you can only get this by reaching the highest level on the action game!

The action part of Four Gates is impressive. There's a wall at the top of the screen which is built in five-bar gate fashion. Above that is another wall, and beyond that are the four gates to freedom.

The idea is to break through both walls in Breakout style, avoiding aliens and into the falling debris from the wall.

Between the two walls lurks an extra enemy, so the game gets harder after you've created a gap in the first barrier, as he escapes through the hole. He cannot be destroyed with your cannon.

The action in the game is very fast. If your trigger finger can handle it, you can fire quite a few times a second.

The graphics are not superb, but are adequate for the game.

Overall, it's great and very fast. But it may take some time, not to mention eye strain, to reach the highest level and get the password for the adventure.

Once you have the password — so I didn't finish the action but I've got friends at Phoenix — you can load the adventure.

When it has loaded and the password has been entered, the title screen welcomes you and challenges you to "solve the adventure!" You'd think that they could check the spelling.

You start off outside a metal gate and your only exit is South. Problem is that you need a password to get through the exit, which I hadn't been given.

Not only do you get the loading code from the action game, you also get quite a few clues flashed on the screen during play. One of these, I assume, is the password to get through the gate.



If you'd like to try this for yourself, you'll need a Vic with a 16K Ram pack. Phoenix Software is based in Pinner — you'll pay £9.95 for the two-pack, which can't be beat.

|                   |    |
|-------------------|----|
| ● Getting started | 8  |
| ● Graphics        | 7  |
| ● Playability     | 8  |
| ● Value           | 10 |

## PARALYSED BY PEPPER!

### MR WINNY

If you think that a game called Mr Winny must mean another version of Burgerime, then you're not wrong. But you're not exactly right, either.

The opening screen is original and quite good, but the remaining frames are just another version of Burgerime.

The first task in the game involves moving the ingredients from one side of the screen to another. You have to collect a fry and gather the cheese, ham and bun while avoiding Wanda the burger thief, and a group of flying manhole covers. No, I don't get it either!

Once you've gathered all the bits and pieces you get to the other screen, which is a pretty accurate copy of the Burgerime theme. The chef is replaced by Mr Winny, the logo used in their advertising. You are punished by an egg, spin and a sausage and you still have your supply of pepper.

The original Burgerime was written by Data East and was licensed for home use by Mabel, who produced a cartridge for the Intellivision.

The object is to build up the burgers at the bottom of the screen by walking over the ingredients so that they fall down a level.

If you pick up the ice cream in the cap of coffee then you get extra shakes of pepper, which is

used to paralyze an enemy temporarily.

Burgerime is the same game, whatever you call it. But this is probably the best version around for the Spectrum.

It runs on a 32K machine and is available from Ocean Software for £9.95. It's a shame that they couldn't call it by its real name.

|                   |   |
|-------------------|---|
| ● Getting started | 8 |
| ● Graphics        | 8 |
| ● Value           | 8 |
| ● Playability     | 7 |

## CRACK SHOT CLONES!

### CYBERTRON

Searching a distant castle for treasures is brought up-to-date with this program.

Before entering each level of the castle, you are told which treasures you must look for and you then wander round the 16 rooms in search of them. As you pass over the treasure, it will appear at the bottom of the screen to remind you that it has been found.

Once you have all the loot, you then have to find the room with the safe in it. Touching the safe will lock away all the treasure and you are then moved up to the next level.

Obviously in such a game there will be enemies after your blood. On level one, says the title card, you only adventure as the Spinners. Personally, I can't see what's wrong with them. (Did you see that Chronos shoot?) On higher levels, you are also pestered by Drones and Cyber druids. These have more person-looking intelligence and can also fire pretty fast!

Control is via the keyboard or joystick, but the keys were not laid out too well. A and Z move up and down while -- and -- move left and right. The "M" key

is used to fire, which I found to be too close to left and right. A joystick would have solved this problem. Furthermore, the break and escape keys are not distributed, as I managed to crash the program by pressing them.

Trying to re-run the program I typed QED. I was amazed to find that my job was then made unnecessary, as the program reloaded itself. Up came the words "Bad Program!" To be fair, though, the game is quite well written. I enjoyed playing it, but I don't think that it'll come back to it too often.

Cybertron Mission runs on a BBC B and comes from Program Planet. It's cost you £9.95.

|                   |   |
|-------------------|---|
| ● Getting Started | 8 |
| ● Graphics        | 8 |
| ● Value           | 7 |
| ● Playability     | 7 |

## VICTORY FOR VIC VERSION

### JETPAK

One of the best selling arcade game titles for the Spectrum has now been released for the Vic.

Jet Pak brought fame to Ultimate, a small company whose first release became an instant success and the Vic version is just as good.

As the person in charge of the Acme installer transport company, your job is to assemble your robot and then to load enough fuel to let it take off. On reaching the next planet, you must fill up again. After four screens, you must rebuild the robot.

The Spectrum version had 16 screens before they started to repeat but, the Vic game has just eight. Because Ultimate wants everyone to have an equal chance of finishing the game, the

continued on page 21

# THE FIRST IN DYNAMIC PACKAGES FROM PROCOM



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continued from page 23

tic one runs slightly faster than the ZX.

The Vic will accept standard Atari-type joystick, and there can be used in the game, although the keyboard can be used instead. What's more, the superb graphics of the Spectrum version have been copied in the same detail on the Commodore machine and the screen is one of the best that I have seen — all in all, too.

One talked about problems from the Spectrum was the so-called bug in screen four. This, says Ultimate, was deliberately allowed players to achieve a high score. Anyway, that problem doesn't arise now, as that screen was one of those which was removed for the Vic. So it seems that Ultimate thinks Spectrum owners are more likely to be great players than Vic owners!

A prize game for one or two players, and well worth £15.50.

|                   |   |
|-------------------|---|
| ● Getting started | 5 |
| ● Graphics        | 5 |
| ● Value           | 5 |
| ● Playability     | 5 |

## FIGHTING FATAL FUNGUS

### 555 ACHILLES

You'll have to race against time to save your planet's most valued artifacts from the diabolical war criminal 555 Achilles. The 555 Achilles has been attacked by a strange space fungus which is slowly eating its way through the ship's main computers.

The alien intruder is indefatigable and your only hope of saving your culture's most treasured relics is to slow its progress through the ship, to give you enough time to escape through

the shuttle craft with your cargo to earth.

The game starts by showing a very impressive graphic display of 555 Achilles under which the game prompts the player to choose one of two difficulty levels, ranging from easy to expert.

You are placed inside an antacid position suit to help you survive the harsh environmental conditions in the ship. Moving the ship into the walls or any grey object damages the robot's integrity level, shown at the bottom of the screen, together with the ship's remaining power supply. The level of the ship's integrity becomes more and more important as the game progresses and a lot of skill is needed to move the robot around the ship without hitting the walls or running into the fungus.

The growth of the fungus can be viewed by stepping into one of the tele-visions scattered around Achilles. This prints up a map of the ship's interior, showing the areas inhabited by the alien in orange.

To complete the game, you must pick up all the objects lying around the ship and deposit them in the shutters leading bay. There are four different types, but the robot can only carry one particular object at a time, if and when you've collected all the objects, you can abandon the ship in the escape shuttle.

555 Achilles is a very addictive and challenging game. The graphics are good and the animation is amongst the best I have seen on the Atari. My only criticism of 555 Achilles is that the game is only available on disc.

555 Achilles is available from Beyond Software for the Atari 400/800 and costs £19.95.

|                   |   |
|-------------------|---|
| ● Getting started | 4 |
| ● Graphics        | 4 |
| ● Value           | 4 |
| ● Playability     | 4 |

## ASTRAL PLAIN ACTION!

### DEFENSE FORCE

It's all action on the line as you career through space with lasers blazing in an attempt to save the humans from an alien invasion.

Attack! The humans are being captured! A Vulcan rapidly descends on its prey with the aim of carrying him off into space. Making a rapid about turn, you fly back in the opposite direction and blast the alien to the four corners of the galaxy (luckily the humanoid is unharmed and falls gently back to earth).

Shoot-em-up fans will love Defense Force — with only a few variations, it's a natural progression of the fast-moving, action-packed attitude of Defender.

This aim of the game is to get through 30 waves of aliens and prevent the humans from being kidnapped. With up to 18 different video modes on your tel, the becomes pretty hectic and you'll find that being able to fly both backwards and forwards is a useful addition to the game.

Once all the humans have been captured, you enter the Astral Plain and blast with vicious tactics, your only chance of survival is to fight it out. Graphically very impressive, the Astral Plain gives the impression of flying into the depths of space away from the TD.

With the aid of a Star Map, it's possible to spot the patterns of aliens approaching before they've appeared on screen — so be prepared for waves of Assassins, Guardians and the dreaded Cybrids if you don't want to lose a life. However if the pace becomes too much, a force field can be erected which will remain operational for six seconds — enough time to fly out of trouble!

There is an useful sound function which I found especially

useful — for although the sound effects are great, they are really noisy and had me clapping my hands to my ears in horror. Thankfully it's possible to play a silent game with just as much fun. A beginner's option is also available for the absolute beginner, but this soon becomes boring.

With its excellent graphics, Defense Force will bring hours of fun to the fans of longer happy arcade fans who want a fast game for their line.

Defense Force is available from Cambridge-based Tansoft and costs £19.95.

|                   |   |
|-------------------|---|
| ● Getting started | 7 |
| ● Graphics        | 7 |
| ● Value           | 6 |
| ● Playability     | 6 |

## YOU'LL BE HAUNTED BY ATIC!

### ATIC ATAC

Abandoned in the void, haunted surely you can only escape by finding the Golden Key.

The castle consists of a large number of rooms, each of which has between one and three doors. As you walk across a room and through a door, the screen clears and the new location is drawn. The program runs very fast and there is no delay while the redrawing takes place.

The quality of the graphics in this game is the best I've seen from a Spectrum. Ultimate has dispensed with some of the movement and sound routines which were shared by Jeti Pac and Copsie, and have written some excellent replacements.

Movement is smooth, and user-defined graphics are used to their limit to produce some amazing characters such as evil-looking witches complete with broomstick.

Controlled via Remapcon or AGF joysticks, in the four corner keys. With four keys for direction, one to fire and one to pick up the objects, a joystick is really the only way to play.

As I said, the idea is to explore the rooms, collecting the objects and using them. For example, some doors may be locked and to open them you'll have to find the correct colour-coded key.

Scores are printed on a beautifully designed "parliament" scroll which runs down

continued on page 32

continued from page 31

the right-hand side of the screen. This shows the number of lives left, and also a large stuffed toyfish? If you come into contact with any of the needles, the toyfish sheds some of its meat and gradually turns to a pile of bones. When all the meat's gone, you lose a life! Now that's nasty.

Apart from the keyboard controls, the Atari also must rate as the best yet from Ultimate. It runs on a 486 Spectrum and is well worth the £3.50 which you'll have to pay.

|                   |    |
|-------------------|----|
| ● Getting started | 5  |
| ● Graphics        | 10 |
| ● Value           | 5  |
| ● Playability     | 5  |

## WARSHIPS OF GOR

### ACHERON'S RAGE

If you're a fan of *Acheron's* then you'll probably like this version of the game for the GOR.

You've hyperbeamed, says the CDSBBS intro, into a sector where scanners revealed its contents long before. Suddenly... warships of the GOR are materialising all around you. In reality, though, it's an asteroid-type game.

The playing area consists of the whole screen, apart from a thin border and also a large shaded block in the middle. On the screen is your ship and a number of aliens, or Gor ships as *Gorpes* likes to call them. The idea is to destroy all of the Gor ships and then to move on to the next level. The block in the middle of the screen makes manoeuvring quite difficult, though.

There are three types of Gor ships. Some will try to ram you, some have the power to fire back, while others will lay mines. Flaming over one of these will result in your destruction.

There are four skill levels in the game. Even on level one I thought that the playing area was too small — there's just not enough room with all those aliens to manoeuvre your ship. You get three lives to start, and an extra one after clearing nearly six waves.

Control of the game is via the keyboard. There are five main controls — to rotate in two directions, fire, accelerate and brake — but you can't move and fire at the same time so a joystick option would be useful.



This is certainly not the best game that I've seen for the GOR, although the graphics are quite good in places. The Gor ships move very smoothly and flip their wings, but the player's ship moves badly in large waves.

Sound effects are included, but are quite limited. There's one sound for firing and another for when the player's ship is destroyed. It's quite loud and there's no volume control, but you can turn it off completely if you want.

If you like this sort of game, then this is worth the money, but it's not one that I'd come back to very often. *Acheron's Rage* runs on a 486 GOR and costs £6.95.

|                   |   |
|-------------------|---|
| ● Getting Started | 5 |
| ● Graphics        | 7 |
| ● Value           | 7 |
| ● Playability     | 6 |

## BOUNCING POLICEMEN?

### BARREDDEN DENNIS

Dennis the Menace, the famous comic character run up his trials like as the stars ready for the most difficult starts of his short life.

Unfortunately for Barrenden Dennis, the film director won't tolerate failure, so if he fails more than three times at any point he's fired — which is possible just as well as poor old Dennis lands on his head each time he fails off and is probably suffering from severe brain damage!

There are six screens altogether. Dennis starts off by jumping fences and trees on the first screen and moves quickly onto water where he rides a wet bike. The second screen is fast — slightly more difficult as there are very slippery — with the remaining three featuring bouncy policemen and gaps in the road. Four jumps have to be well timed if you want to save Dennis from going up in flames.

The first three screens are easily mastered on the first difficulty level, while the remaining five levels range from experienced to Ace where you'll really have to struggle to keep Dennis on his bike. I had several more encounters with bouncing policemen and decided to stop on the second level.

A lively line is played which lives up the dreary few minutes while the game is loading and the graphics are very detailed and colourful. However, I felt the game lacked that elusive addictive quality which would make it a winner.

The game is controlled by the shift key which acts as a throttle, the return key which acts as the brake and the space bar which is used for jumping — very simplistic controls and a game better suited to the younger age groups.

Barrenden Dennis is available from London-based Visions for the BBC Model B at £7.95.

|                   |   |
|-------------------|---|
| ● Getting Started | 5 |
| ● Graphics        | 6 |
| ● Value           | 4 |
| ● Playability     | 4 |

## WAYS TO WIN THE WAR!

### STONKERS

Bells, chips, Spitting game, what? These Imagine chappies have really got it right this time.

Yes, it's the latest release from Imagine. In one giant leap for a software house, Eugene and Co. have released a war-type strategy game but have kept those overly arcade type graphics. These graphics are, in fact, well designed. But I don't think they really live up to Imagine's claim that they are as much as is technically possible on the machine. For my money I prefer *Ultimate*. Whoopee, sorry!

Anyway, chips, this is a war

strategy game. There are so far moving menies to jock, instead you have to move your tanks and cannons to clever positions and make sure that you are near enough to the supply ship to get some cargo when it unloads.

If all this sounds very vague and it seems to give the impression that I couldn't get in to the game very far, then you're right. The whole idea is pretty complicated and I actually spent the last part of a whole day studying the instructions in front of a Spectrum. For all my gaffling efforts, I succeeded in downloading my entire segment in the end.

When opposing forces meet, whether by direct deployment or by accident, they will engage in combat. There's a predetermined hierarchy of which battalions are more powerful than others. Four forces will change colour if they're engaged in combat.

During play, the screen shows the playing area on a small scale. There's a 2-character wide cursor which you can move to any point and then expand that 2-character piece to fill the whole screen. It's really quite impressive. Anything which happens in the moving will do so whether you happen to be there watching or not.

The object is to destroy the enemy locations and to recover their HQ. But I feel that this is going to take someone a long time. If you're the sort of person who likes to be able to get straight into a game once it's loaded, then this is not for you.

However, if you're fed up with copying everything in sight from Space Invaders to Mutant Turtles, then this will be good value.

*Stonkers* is from Imagine and runs on a 486 Spectrum. It costs £5.50.

|                   |   |
|-------------------|---|
| ● Getting Started | 5 |
| ● Graphics        | 5 |
| ● Value           | 5 |
| ● Playability     | 5 |



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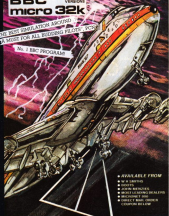
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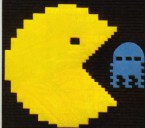
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Thinking of buying a chess program for your micro? Don't know what to expect or which one to buy? Then read on . . . Whether you're a chess fanatic or you just know the rules, you will probably at some time want to test a chess program for your home computer. With the great number of programs now available, it may be a difficult decision to choose the best one for your micro. In this article Chess programmer Martin Bryant looks at the standard of play and the features you can expect from the best modern home computer chess programs.



## Standard of play

The very best programs can now play at a fairly good club level, from around 1000 to 1050 ELO (100 to 100 BCF). The standard of play can vary greatly from game to game depending on the type of position encountered and the stage of the game. Modern programs also usually have a much fuller understanding of the more obscure rules of chess such as underpromotion, draws by repetition, draws by the fifty move rule and chess clocks.



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- **Move entry by a screen painting method.** Why should people have to turn their thoughts into an algebraic form, just because it's easier for the program to understand? The correct method allows you to 'move' the piece on the board, more like a real chess game. The best programs can accept both methods.

# COMPUTER CHESS

- **The ability to step backwards or forwards through the entire game.** Older programs would allow you to take back only a couple of moves, but with new techniques the whole game record can be stored and scanned with small memory overhead.

- **The orientation of the board should be reversible.** That is the board should be displayable with white or black at the bottom of the screen. This allows you to play black 'up' the board, like a real chess game, instead of having to reverse your way of looking at it.

Several 'modes' of play can add a great deal of flexibility to a program. The old fashioned eight 'levels' can be nearly improved upon these days. Some of the sensible 'modes' are:

- (i) **'Tournament' mode.** Full tournament parameters can be set up, to make the program play within any specified time limit. As easy to use version of the full mode is helpful as well, where you can just specify the average move time you wish the program to take. This can range from one second to 30 hours, effectively providing thousands of 'levels'. The program automatically adjusts its 'lookahead', to play within the required time.

- (ii) **'All the moves' mode.** Chess clocks are used, where you must play all the moves of the game within a specified game time. If you play too slowly, you lose on time! Club players often use this method in 'five-minute' games where both players have five minutes each to play all their moves.

- (iii) **'Problem' mode.** The ability to solve chess problems of the type in many newspapers is good. Beware however of the programs which claim they can solve mates in five or more, but then take a week or so to do it! If the program averages more than a few seconds on any mate in two it is likely to be horribly slow on deeper mates.

- (iv) **'Losing' and 'Upset' modes.** Many

players can't beat the programs on their lowest settings. These modes allow the program to quite deliberately try not to win! Instead it either tries to gradually lose or stay roughly level. These modes can be of enormous help to the beginner or very weak player. As the player improves, the program magically improves with him, always challenging him, but not badly smothering him so he just gives up.

The ability to quickly and easily set up different positions is essential. The program should also check that you don't try to play on with an illegal board position. For example, having P4 on the first rank, more than one king for white side etc.



## Which Program?

The best programs for playing strength are usually the most recently released. Any program which has been around for over a year without an update, is probably really outdated as far as its playing strength goes. A year is a long time in computer chess, so can be seen from the results of programs which compete in recognised tournaments, such as the European Championships at the PCW show each year.

A chess programmer may achieve glory one year, but has to work very hard on new ideas/techniques to improve the program, so as not to be outperformed by other programs by the following year.

You should try to go for recognised quality programs, which have competed in many tournaments. There are several reasons for this. Some of the programs have obviously proved themselves by actually winning some of these tournaments.

Others will have at least performed reasonably well. The ones that don't seem at all, would probably be smothered out of sight. Also the programmers behind these programs are dedicated and



# CHESSE-MATES . . .



## COMPUTER CHESS COMPETITION

BBC Publishers are offering a superb prize to the lucky winners of our Computer Chess Competition — three presentation copies of *White-Knight*, copyrighted by the author.

All you have to do is answer the following questions about computer chess. So have a go at winning yourself one of the best chess programs around!

(1) What was the name of the computer chess program which won the first Computer World Chess Championships in 1974? Was it:

(a) CHROM (b) KRISNA (c) CHES 4.0 or (d) GSTRICH?

(2) What processor did the original Cyrus program run on?

(3) Which program won the 1982 European Micro-Computer Chess Championships?

(4) The fastest chess program in the world, called GULL, uses special hardware to achieve its phenomenal speed. Approximately how many positions per second can GULL examine? Is it (a) 100 (b) 4,000 (c) 75,000 (d) 160,000 (e) 475,000 or (f) 2,000,000?

(5) Describe a new feature which you would like to see included in the next generation of chess programs.

You'll probably have to be a professional chess programmer to answer all these questions, but the competition isn't open to them. Just answer as many as you can. In the event of a tie, the answers in question five will be used to decide the winners. Closing date for entries is February 1986 and the usual CHROM competition rules apply. Please send your answers, on a postcard, to Computer and Video Games, Computer Chess Competition, Bureau House, 6 Bedford Hill, London SE20 8LJ.

Knowledgeable enough to really write a quality program, rather than just another software "rip-off" as so many chess programs. The same arguments really apply to the features as well. A "real" chess program will have most of the best features as a matter of course.



## Reviews

I'll now take a brief look at two programs which are probably the best available. They are *White-Knight Mark II* for the BBC Micro and *Cyrus 12 Chess* for the Spectrum.

*Cyrus* was originally written in 1981 by Richard Lang and won the European Championships in the same year. It has competed in several tournaments since, with varying success and has been adapted for several machines.

The Spectrum model is not the latest version of the program, but one will beat almost all other programs. It comes in 16k and 48k versions. The 48k version has more features and also uses an openings book. It contains a wide range of features, including set-up position, saving to tape, printer output and full game take-back. The bottom of the screen shows the various features available as single letter commands.

The display is clear and the programs error more easily than to use. It allows user underpromotions, underpromotions drawn by the fifty move rule and some drawn by repetition. It has eight levels and can solve problems up to three moves ahead.

*White-Knight* was originally written in 1977. Mark II won the home computer section of the European Championships in 1983. It is certainly the strongest home computer program available at the moment.

It runs on the BBC model II and like *Cyrus*, comes with several excellent features, including an opening book, whole game take-back/display, orientation, play-off, identified and even volume control.

When it computes its move, it displays the best line it has found so far in its search. This can be used to provide a "hint" move as well as an indication as to what *White-Knight* has "seen". Again the display is very clear and the program easy to use. You can use cursor positioning move entry or algebraic notation.

The program can easily be set to play within any average move-time you require of it, thus providing thousands of potential "levels". It can also solve mates up to five moves ahead. Its problem solving speed is phenomenal. It examines around 1,500 positions each second and when compared to the Program Power chess program was found to be around 280 (yes, two hundred) times as fast!

It was recently used in a study of several hundred chess problems and found that a dozen of the original problems were in fact a minor

In a series of sixteen test games between the two programs on various levels, *White-Knight* beat *Cyrus 12 Chess* by twelve games to five.

For other machines there is a wide range from fairly good to appalling programs. *Cyrus* is also available on the Dragon. Not as good as the Spectrum version but still a good buy. *White-Knight* is soon to be released on the Electron.

The Atari cartridge I tried was horrible and an EIC has got to be able to miss. For the Commodore 64 comes the Grand-Master. It didn't offer many real features and I beat it twice with no real trouble and wasn't very impressed. At £18 I would also give it a miss.

A new program called Gollum, which won second amateur prize at the European Championships is soon to be released on the C64 64 and Atari micros. This program promises to be one of the best around. For the Apple, Sargon II has had its day, but Sargon II is now available.



# VIDEO

## MEET THE VIDEO GAME SUPERSTAR



Activision, one of America's strongest video game success stories, first made its mark on the industry four years ago with games like *Demolition* and *Fighting Derby*. Since then there has been no holding them back and Activision have created a string of popular titles which have won them a place among the front-runners in this highly competitive field.

I met David at one of London's top hotels, where he was happily talking with a take-away batch of same rather soggy-looking hamburgers and chips. He explained this away by stating a preference for hamburgers rather than English food! Perhaps it made him feel a little less homesick!

David first became interested in video games as a teenager when he spotted arcades in play centres, but he added, "I soon realised that my interests lay in electronics and computing." About eight years ago he started to program his own games in an attempt to forge a career in the industry.

Since then David has produced many games for Activision and has certainly made his mark.

One game which earned him instant recognition as a top performer was *Pitfall*, which was voted 1983's Best Game of the Year in the States. In fact you could say that *Pitfall* made David Crane a video-game superstar.

The secret of a good game should combine realistic graphics with instant playability, a level of addictiveness and make full use of the machine's capabilities.

"When designing a game, you've got two choices — sports games or arcade type games. Sports games are easier in a way to design in that there are set rules to work to, whereas there are no rules governing the design of an arcade type game. The format is entirely up to the designer," David described how two of his best games developed.

David first started working on *Demolition* — a sports game which has recently been released — some time ago. The first event is the 100m dash so he started off by programming a little man to run from the left to the right of

David Crane, a 29-year-old, 5'5" giant is one of the leading lights behind Activision's success in the highly competitive video games industry.

Activision, which was formed about four years ago, owes its outstanding success to the programming prowess of games designers like David.

During a flying visit to the UK, David took time out from his busy schedule to let *Computer & Video Games* writer Clare Edgely into the secrets of games programming and his own particular brand of success.

the screen, the screen then scrolls forwards, showing the athlete still running to reach his goal.

Unfortunately, *Demolition* originally hadn't been shelved, as David couldn't fit all ten events into the memory space available to him at that time.

Turning to the idea of an arcade game, he decided to start in exactly the same way as *Demolition* — a little man running from one side of the screen to the other. And so the idea for *Pitfall* was developed.

"I didn't have a preconceived idea of how *Pitfall* would turn out, I just added object after the top of my head like pits, vines, ladders leading into the pits and the odd crocodile until I ran out of memory.

*Pitfall* was a difficult game to design as I tried to add a level of complexity to every step."

After completing *Pitfall*, a way was found to double the program size for Activision cartridges and David was able to complete *Demolition* — an Olympic feat of

programming in which you've got to compete in screen versions of all ten events of the real life Olympics.

Unlike other video game companies who employ a team of programmers to work on one game, Activision give each programmer sole responsibility for one game, from the initial concept of the idea through to the final product.

A team of five to six designers work in one room in an atmosphere which David finds very "supportive". In this creative atmosphere there is an "instant feedback and recognition in the quality of a game and a constant exchange of ideas."

The programming time for each game is somewhere between six months to a year. Typically, *Pitfall* took some 500-700 programming hours to complete over a period of six to seven months, while *Demolition* was completed in just over a year.

However, games used to take longer to develop due to the graphics. "Originally we started

off by plotting characters and objects in coloured squares on graph paper and then doing the conversions into machine code. If we weren't satisfied, we would have to return to the graph paper and start again."

The time-consuming exercise was solved by David who developed a gadget which enables the programmers to draw straight onto the screen of four times the real size. Once the programmer is satisfied with the finished product, it is automatically converted into machine code and stored in the memory. "It's approximately 80% faster using this method."

One of the passwords to the programmers' success are the key words: program size, execution time and storage memory. "When programming, you have to trade within these three constraints." For instance, if the programmer needs more memory, then either the program size or execution time will have to be cut down.

Activision have recently moved into the home computer market with *River Raid* and *Kaboom* for the Atari 400/800. I asked David about Activision's plans for the future. "Four years ago, our plan was to make a quality name in video games and once that name was established — to move with the industry. We are following a very well thought out plan."

David wasn't giving any secrets away and wouldn't say what was to follow *River Raid* and *Kaboom*, although I have been assured that more titles are to be announced shortly.

David needs to put in about four working hours a day at the office. "It's impossible to come in at say 9.30 am and expect ideas to flow, for the next six to seven hours."

However, David's got all the necessary equipment at home and can work from there if a flash of inspiration hits him.

Pride in his work also shows in his personal life. David drives around in a car with customised number plates — you've guessed it... **PITFALL!**

## EXPANDING COLECOVISION

ColecoVision system owners will now have access to the biggest video games cartridge library available, thanks to the soon-to-be-released *Coleco Expansion Module No. 1*.

This plug-in module enables Coleco owners to use Atari 2600 cartridges with their system — opening up whole new vistas of video games playing.

Legal metaphors have presented the module teaching the streets for some time — but it should be widely available by now and will cost around £59.95.

Once the Coleco owner has settled out for the expander, he

or she can use one of the large range of games produced by and for the Atari VCS system. The rather awkward Coleco controllers must still be used too, for games that need the Atari paddle controllers. Coleco owners will have to find someone with an Atari system!

The expander is good news for Atari owners who want to upgrade to a Coleco — but were afraid they'd have to junk all those expensive Atari controllers. Combine the high-resolution Coleco cartridges with the module and you really have got a super system!



# GAMING

## THE VIDEO PROFESSOR GOES ON PITFALL SAFARI

Welcome to the second of Professor Video's features, packed with useful hints, tips and strategies which help you beat the hot home video games. This time he's taking a look at the ever popular Pitfall, written by David Crane, Activision's ace designer — who we interview elsewhere on these pages. Over to you Professor!



Oh! I wasn't quite ready for you, Harry! Right, it's Pitfall isn't it. Yes, Pitfall... now let me get my notes together. Ah yes! Here we go.

like rolling logs, forest fires, jungle lakes and the dreaded tar pit! Some of the lakes and pools disappear and reappear mysteriously just when you're old Harry least expects it. Harry has just 30 minutes to find the 32 lost treasures of Elmore — and only three precious lives.

The key to winning at Pitfall is knowing how to use the underground passageways which are hidden under the jungle. Some of these passageways are dead ends — but others provide useful short cuts to the treasure. One



Excellent! Are Harry's friends coming?

Unfortunately in taking this route you miss out a gold bar, but when you learn that you'll discover six additional treasures between screens 41-52, this strategy doesn't seem quite so bad after all! Another shortcut starts in screen 12 — again moving right from the start — this will take you to screen 19 — again avoiding a crocodile! These shortcuts will perhaps prove to be your deadliest foe.

Now the tar pit has been closed the treasure is safe. Control a little the cheap called Harry who is involved in a search for the lost treasure of Elmore. Harry's quest, get it? During his search through the 32 screens of the game Harry will encounter many dangers of the animal kind, including crocodiles, snakes, crocodiles and snakes.



Don't forget my great video cabinet on this page!

underground seems to work three above ground screens — so you can see how much time you'll save by working out the best short cuts. Here's a couple of short cut hints. If you take the ladder down in screen 15 — moving right from the start point — and pig along jumping five crocodiles on the way — you'll come up in screen 19 having missed out four above ground crocodile screens. The crocs are your most dangerous enemy. More about them later!

So here's how to deal with them when you are faced with a screen which doesn't offer you the option of grabbing a vine and swinging over their gaping jaws. There are three of the crocodiles in each screen.

Timing is all important. Wait until the first crocodile's jaws clamp snap shut then jump Harry onto his snout, quickly moving him to a spot behind the beast's jaws.

Now the crocs will open their jaws again displaying a fine set of sharp white teeth. But don't panic. Wait until their jaws close again and jump onto the second crocodile — repeating the quick snap to behind his jaws. The third croc is dealt with in the same manner — but jump off quick and run to the next screen.

You can move left or right from Harry's start point. Moving right you come across more treasures earlier in the game. But by running left the rolling logs don't pose a hazard you can run along with them in the same direction.

## TRY GETTING IT TAPED!

Hello! This is Professor Video calling! Last issue I began my features in the art of video-gaming, bringing you tips to help you take on any sort of alien!

I've managed to get hold of five sets of new video releases called How to Beat Home Video Games, produced by Polygram Video. Each set consists of three tapes which deal in depth with strategies to beat games and give those cunning kids and tips to make your scores higher and higher.

Volumes one of How to Beat Home Video Games deals with The Best Games home video classics like Space Invaders and Missile Command. Volume two looks at the star war games, including Pitfall, E.T., Raiders of the Lost Ark and Look n' Chase. Volume three deals with games for the new systems which bring arcade quality games into the home, like the ColecoVision and the Vectrex.

After you've watched each of these hour long tapes you'll be able to pick up your joystick and play with the confidence of a video-graduate!

So, how do you get your hands on a set of these great tapes? It's so easy in this — just send me your favourite point-to-pointing tips for your favourite video game. I'll pick out the top five tipsters and they will each receive a set of the tapes! Describe the strategies or sneaky moves that beat giant penalties, defeat alien invaders or save Pacman from the grasp of ghostly And that's just a few suggestions!

Fill in the coupon below and attach it to your reply. Send it to Professor Video Contest, Computer and Video Games, Quorn House, 5 Oxford Hill, London SE11 5JZ. Closing date for this contest is February 15th — so get your tips in quick to beat the rush!

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Figure 1. Schematic diagram of the experimental setup.

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# SPEECHLESS??

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# VIDEO



## TEST FOR SPACE ACES

If you fancy yourself as a real space ace then *Star* will give you the rank you truly deserve.

This home conversion of Atari's arcade game offers four separate shoot 'em up challenges and then awards a rank depending on your performance. The first, where in *Space Invaders* with the addition of a force field. You have to blast gaps in the crescent-shaped force field to enable you to pick off the invaders as they advance down screen.

Stage Two is called *Laser Attack* and introduces a particularly vicious formation of aliens who busy around the screen shooting long snaking beams of laser fire.

*Laser Attack* will have you wrenching and pulling on your joystick but tougher things will be ahead in *Space War*.

In this level the alien spiral out towards you centreframe fashion. As they approach they get larger and will collide with your ship unless you can get them in your sights and blast them.

The fourth and final challenge is the *Flag Ship*. This is the Gorf's home base moving back and forth across the top of the screen. The force field is back in position so you will have to shoot a clearing in this and then make several direct hits on the ship before finishing it off.

Your mission is now complete and you receive your rank. I managed to attain the rank of *Space Colonel* — which wasn't bad considering I started out in life as a lowly *Space Cadet*.

If you think Gorf may enable you to become a hero overnight then forget it, because each time you complete one mission you get given a new, tougher one! To attain really high rank you

will have to do better with faster, more numerous aliens with heavier fire power. Another claim of a well known arcade game. Available now at £29.95 from Colecovision.

### THE VERDICT

If you liked the arcade game you'll like the home version too.

|            |     |
|------------|-----|
| ● Action   | ▲▲▲ |
| ● Graphics | ▲▲▲ |
| ● Addition | ▲▲▲ |
| ● Theme    | ▲▲  |

## SMURF TO THE RESCUE

*Smurf* must be the "cutest" of all "cute" games! That little blue chap with the floppy white hat has even managed to overtake Pacman in the CBMS customer ratings!

He first appeared on the Colosseum system — in search of Smurfette imprisoned by the evil Gargamel in a gloomy spider-filled castle. Now *Smurf* can continue his quest on the Atari VCS thanks to CBS Electronics! The Atari version follows faithfully in the footsteps of the Coleco original. Despite the limitations of Atari VCS graphics, the CBS conversion is remarkably good — particularly when it comes to landscapes.

The *Smurf* still walks along a bit like a cross between John Wayne and Charlie Chaplin — which adds to his cuteness!

In case you've not seen the Coleco version, the object of *Smurf* is to rescue Smurfette from Gargamel's giant's castle. The *Smurf* has to trek across rough countryside, jump spiky fences, leap over rivers and leave the dangers of Gargamel's dungeons before he can reach the giant's sitting room where Smurfette is imprisoned in a staff high above a wall table.

The rivers and the final screen are the only features in the Atari version not found in the Coleco game.

If you play on skill level one, the *Smurf* simply has to hop, skip and jump along to the final screen — avoiding the nasty spikes in the dungeon screen — and rescue Smurfette.

If you go up to skill level two, then Gargamel's hounds, snakes and bats will be after you — making the game much more challenging. You have to duck and weave as the esteemed master comes at you!



OGARF



SUPER COBRA



ART MASTER



SMURF



DECATHLON



# CLAIMING

The final screen is quite difficult. Firstly you have to bounce out to reach into it too quickly. If you do, your Smartwad walks right into a chain and you'll have a life without even getting a crack at rescuing Smartfame. Unlike the Galaga original where you had to get your Smart into the top of a skull and then make a quick hop up to Smartfame, the Atari version adds a few extra hazards. You have to jump onto a chain, then onto the table, then another chain before finally being able to take that final leap onto Smartfame's shell! All of which takes a lot of practice and good joystick control. If you play on skill level two, the castle hat will be attempting to threaten your rescue bid in this screen too.

The little character will soon win your heart — even though it does take a lot of time to master his hops, hops and dodges. And C&H has obviously gone to a lot of trouble to ensure the VCS graphics match the Coleco's as closely as possible. Personally I liked this version better than the original — except it's still got that irritating little tune!

## THE VERDICT

If you like cute games then Smart! is the ultimate in cuteness. But with the challenge laid if you are a dedicated video player?

- Action +++
- Graphics +++
- Addiction ++
- Theme +++

## MEET THE ART MASTER

Now for something completely different. Last month we complained that the range of games for the Vectrex lacked variety. Milton Bradley have responded to this criticism by submitting a game for the jury's scrutiny which is completely unique — not only for the Vectrex, but unique amongst all video game systems.

The Art Master cartridge enables you to become a video artist for an afternoon. Designed to work in conjunction with the

Vectrex light pen, you can use Art Master to sketch, draw in dots and then connect them up, and even animate your drawings to create genuine cartoon animation.

The sketch function lets you enjoy the simple fun of doodling in light. You can copy pictures from books, write messages, or play mazes and crosses. The connect function lets you draw in dots. You can use this to create dot pictures and ask your friends to guess what they are before pressing the button to connect up the dots. Options are chosen by selecting choices from a menu using the light pen which you simply point at the function you require.

Although doodling is light is fun, the real attraction of this cartridge is the animate option. Although you cannot create very sophisticated animation, you can do simple things like drawing a plant and making it grow, or make a stick man walk across the screen.

The Art Master cartridge comes complete with the light pen and an instruction booklet. In the shops now at around £20.00.

## THE VERDICT

Adds a new dimension to your Vectrex.

- Action +++
- Graphics +++
- Addiction +++
- Theme +++

## PURE GOLD DECATHLON

Decathlon is the most exhausting video game ever to come up before the jury! You should have seen them when they came out to present the verdict — the format could hardly stand up. The reason for all this neediness is due to an entirely new innovation in videogaming — the shake-upnet joystick.

It's not a new joystick, but a new technique in David Crane's — of Parlot fame — latest game — Decathlon.

You control an athlete taking part in the famous Olympic ten-event contest. To make your man run forward you have to move your stick as fast as you can from left to right. The faster you shake it, the faster he moves.

Speed is essential and not just

to win the 100, 400, and 1600 metre races. You also need as much speed as you can muster to gain maximum height in the pole vault, high jump, and length in the long jump. Speed also enables you to gain momentum when throwing the javelin, discus, or putting the shot.

Your athlete has the advantage of a speedometer at the bottom of the screen, which measures his pace with a red "fuel level" style display. When he's at full pelt the line will shoot up to level six, and fall back to nil when stationary.

To jump or throw press the fire button. Some of the events are more fun than others — my personal favourites are the high jump and the hurdles.

This is a real winner of a game from Activision for the Atari VCS. Like the rest of the Activision games, if you get good enough at them you are rewarded. In Decathlon you can send off for a gold medal if you score over 10,000 points. Available now at £20.95.

## THE VERDICT

This is your chance to go for gold. The most playable sports simulation for the VCS — for up to four players.

- Action +++
- Graphics +++
- Addiction +++
- Theme +++

## SUPERCOBRA SUPER GAME

Scoring games are pretty thin on the ground for the Intellivision, so the arrival of Parker's Super Cobra was greeted with considerable excitement by the ladies and gentlemen of joystick-jury.

The Scramble-type game from Kenam was a significant hit in the arcade despite being slightly over shadowed by Scramble.

Now the game has been licensed by Parker Brothers and converted for home use on the Intellivision.

Four levels of scrolling, bombing, shooting action have been incorporated in the game for one or two players.

Playing your chopper through enemy terrain you are attacked by ground to air missiles, and bouncing bombs.

You'll need all the skill you can muster as the enemy barrage intensifies and the canyons and cityscape through which you must negotiate your chopper get narrower and narrower. Needless to say the Intel disc controller doesn't make this any easier.

After 1,000 miles a squadron of alien flying saucers attack you with missile fire. Fuel dumps are now lost and for between 10 you can't afford to lose hitting them to boost your supplies each and every time this occurs.

At the end of the canyons and city skyline are three enormous skyscrapers with the words Kenam and Parker Brothers written on them.

You see now near the end of your long fight and have to bomb one last ground installation to complete your mission.

It will take the most skilled video player several attempts to crack the one.

## THE VERDICT

Another good game for Parker Brothers — filling a gap in this type of scrolling shoot 'em up for the Intellivision.

- Available now at £20.95.
- Action +++
  - Graphics +++
  - Addiction +++
  - Theme +++

Next time we're telling the members of our joystick jury focus on some hardware. Namely the joysticks themselves. We reckoned it was about time we took another look at the devices available to play games with — on home video game systems and home computers.

Our joystick jury will be looking for the ultimate stick and at the same time will be bringing you up to date news of what's good in the world of sticks.

Also we'll be taking that look at laser-disc technology for the micro games player. That's using a few longer words to say what we promised you this month — but we get out of it space this issue! We'll be taking a look into the future and predicting that you'll be able to play laser games on your home computer — games like the ones that are revolutionising the arcade industry right now!



## TIPSTERS PAY RISE

On seeing that Spectrum is paying £10 for hints and tips which reach its Program Extra page, I've been saving up eagerly, and can now afford to do the same. So from now on, any letters, hints or other tips which make the Bug Hunter page will earn £10 for their authors.

Add talking of Spectrum, I'm currently training him in the art of Bug Hunting and I assure you that he's very nice to talk to. In no time you have a problem and he's off lighting the bugs, ask for him.

Here at CBMG we've come up with a clever idea to keep this easily distributed between myself and Spectrum. Next time you have a problem, toss a coin before you telephone the office. If it's heads, ask for me and if it's tails then ask for Spectrum. And if it lands on its side, phone the *Chinese Book of Records* line, back to the ancient staff.

## GO FASTER DRAGONS

Dragon men will probably be aware that some Dragons can be speeded up simply with a POKE. But all machines will allow this, but now, courtesy of Bug Hunter Enterprises (with a little help from Allan Davies-Clegg, our Dragon subcommittee reviewer), here's why, or why not.

The central chip in the Dragon is a 68000, where the E means that the chip gets all its timing signals from an external clock. The clock takes the form of a crystal, and the frequencies it produces are handled by another chip.

However, you can alter some of the registers in this last chip to alter the speed of the clock which drives the 68000. This has the effect of speeding up the computer so that some games will run twice their normal speed.

However, the 68000 was not designed to run at this speed, so don't be disappointed if power doesn't. But, says Allan, the fact that so many do, is a tribute to Motorola, the manufacturer.

There is certainly nothing wrong with a Dragon which will not run at the higher speed.

## CHEQUERED FLAG — PSION

James Nelson from Bromley, Kent, writes to tell me of what he thinks is a bug in Chequered Flag. At the end of a race, he says, the computer is supposed to print the fastest lap time. In fact it prints up the time taken to complete the last lap. Has anyone else found this problem?

## SPECTRUM GRAPHICS

We will get calls from Spectrum owners who have tried running games from our magazine but all the graphics come out as lower case letters.

This is because the game uses user-

defined graphics characters — that's what all those DATA lines are for.

The solution is simple. If, when typing a Spectrum program, you see a PRINT line with some lower case (email as opposed to CAPITAL) letters in speech marks, these are probably user-defined graphics and need to be entered in graphics mode.

To do this, type the line in as normal but when you get to the letters, enter graphics mode by typing CAPS-SHIFT with 9 to get a G cursor. Enter the characters and then get out of graphics mode by typing CAPS-SHIFT with 5 again, and finish typing the line.



Write to me at Bug Hunter's Computer and Video Games, Brunswick House, 8 Haverhill Hill, London, EC1R 5EJ. Or phone 01-278-3081.

## RABBIT RAID — SPECTRUM

If you managed to get the graphics correct in Rabbit Raid for the Spectrum from November's issue, then here's how to add some sound to it, courtesy of Ian Lewis from Lwisa, East Sussex, who's the first to earn the new improved sum of £10 for his efforts.

On line 30 after BASIC\* and before CODES add REEP 3,7 REEP 1,7loop 3,7 and at the end of line 308 add REEP 3,14.

It also suggests that a more realistic score system is made by changing line 260 from 5-5- 380 to 5-5-250.

## TIPS FOR THE ATARI

Here are a few useful tips for the Atari 400/600/800 from Christopher Rache of Sutton Coldfield.

To disable the break key, type POKE 16,4: POKE 50714,4. To disable the system reset button, try POKE 590,1. Now, if anyone presses it, the machine will erase all its memory including the program.

To destroy all variables try FOR 2=FREE(120)+256\*FREE(131) TO POKE(120)+256\*FREE(131): POKE 2,1NEXT 2.

After entering this, when LIST is typed the program will be listed in an unrecognisable form.

Also for Atari owners who keep having occasional errors with the US cassette recorder, try typing PRINT before CLAYING. This will produce a harmless error message, but just continue as normal. Thanks to Donal Dods from West Lothian for this.

## WILD WEST — VIC 20

Vic 20 owners may have been surprised by the Wild West program from December's issue. Even though the program needed a super expander cartridge, there were still three commands in there that the machine did not understand. The problem stemmed from the fact that we haven't saved up enough for a Vic printer yet, so I loaded it into our Pet to be listed.

However, because you can't get a super expander for a Pet, some of the names from the cassette were misinterpreted. I can now put you out of your anguish by revealing that BASIC\* should be COLOUR, APPEND should really be SOUND while SYNTAX should actually read RJOY. You will now be able to get the game running perfectly.

I am still getting letters about bugs in professional software for micros. With Christmas just gone, there must be quite a few micro owners who have bought software with bugs in it.

The latest batch comes from Peter Lee of Bland, Essex. Peter talks about problems with Peter's Flight Simulation. Coscar's King and has also told me of a problem in Walkabout which causes the program to return you to BASIC, able to LIST the game!

Well, that's it for another month. Don't forget that you can always talk to me about your computer problems on 01-278-3081. I've just had one of those post answering machines fitted to the bug phone so if you are suddenly struck by a bug in the middle of the night or at the weekend you can leave me a message. You may also find that the machine is on during the day if I'm tied up with the dreaded Souths English — someone has to type all your moves into the computer! — but leave me a message and I'll call you back.

BY ROBERT SCHFREEN

Meet Alf, the Dustman. Not any ordinary dustman, but a hyper-intelligent mega-dustman. He has found himself in a spot of bother with neither lawnmowers nor lawns, but numerous tons of homicidal rubbish. To make life even more difficult (and confusing) his favourite beer is in hot pursuit! But there is help on the way. 'The Hands of the Glasses' try to assist Alf in overcoming the evil waste. Meet Alf, his friends, his enemies, and 20 waves of sheer madness.

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# ARCADE

## HOLD ON — GOING DOWN, DOWN, DOWN . . .!



The latest comment from where to pinball is that master of arcade abuse Q\*bert. Gottlieb have transferred the little chap from video-action to pinball playfield in Q\*bert's Quest. And all Mr Q's mates have come along too. Corky, Ugg and Whompsey are still set to make life difficult for Q\*bert as he attempts to build his pyramid of coloured cubes.

By hitting one target — the monster's den — you'll release an extra ball, but the monsters escape too to cause Q\*bert more problems.

This machine has one irritating feature — the ball tends to stick around the upper chassis section of the playfield, hesitating at entrances to passageways — and this spoils the rhythm of play which generally is fast and furious.

For action fans Gottlieb offers Striker — the player takes on the pinball machine's team clad in yellow. The player gets the white strip! There are, of course, lots of rebuffs in play, but the game is still fairly basic on its general playability. Gottlieb are still trying to find that one game that clicks with pinball fans — but to give them their due they are real tried!

Check horror probe department. Can it be true! Matthew Broderick, the star of the movie War Games — the one about the computer-kid who almost warns World War Three by tapping into the American defence system with his home more — doesn't really like computers! Talking to the London Evening Standard Matthew said: "Computers are not my thing at all. I don't like them and I don't understand them very well. I play video games, but even that I like pinball more."

Don't forget, we're still interested in hearing your views on pinball and your high scores too.

Free-fall! Wheel Cong! You'll have to duck, dodge and jump to escape the bullets of those shifty-eyed, trigger-happy security men.

Elevator Action certainly lives up to its title — your aim is to get from the top to the bottom of a top security defence building via lifts and escalators.

In your search for the top secret documents, you'll come up against a lot of lean, mean security cops, all firing pistols and ready to stop you at any cost from reaching your get-away car.

You'll have to keep your wits about you while you descend, as you stand a very good chance of getting shot.

On each floor is a series of closed doors, and a security man, or two, could leap out at any time blasting away. You carry a gun, as do all good inmates of FBI, and you'll soon learn a few tricks to get past the badies as you shoot up and down in the lifts.

Using your joystick to keep the lift between floors, wait until one of the badies takes a pot shot at you, and then quickly move to his level and shoot back. Because there is a small time delay while he reloads, you can be sure of a safe hit.

Trained by your government, you're also a karate expert. By using the jump button, you can leap off the lift and deliver a lethal, mind-blowing kick to your opponent which will effectively lay him out!

## DONKEY KONG

### DONKEY KONG

One of the latest games from Nintendo is Donkey Kong 3 and the new game introduces a star-like character, Stanley a gardener, who takes over where Mario left off — only this time he feeds off the mad donkey to defend his greenhouse.

Armed only with a spray gun, Stanley chases Donkey Kong up the vines, keeping nasty insects and writers away from his flowers. Each pest has a personality of its own and Stanley must work fast and logically to keep the creepies under control. If he is

### ELEVATOR ACTION

Fast doesn't appear at random and behind each one are secret documents which will earn you bonus points. If you get for the red doors, keep your eyes peeled as the guards will recede their efforts to get you.

As you descend, the floors become wider, there are more doors, more security men and up to five lifts travelling up and down. A lot of skill is needed to

reach this stage, to dodge the rapid hail of fire and last get through to the next floor in one piece.

The building must resemble the Empire State in size as there seem to be an awful lot of levels to get through before you can make a run for it.

Elevator Action by Taito Corporation has a really original theme and I found it a pleasant change from the normal scoreless shoot-em-ups.



## BLAZE THOSE STAR BANDITS!

### STAR BLAZER

Samurai! Bandits at 3 o'clock! You push your joystick forward and enter the fray. The space city must be saved at all costs.

Weaving and dodging through the city's underground highways, you who round a sharp 90 degree bend to beat off an enemy attack of fighter space ships. You can't relax your vigilance for a second — more fighters are attacking from the left.

Leaving the city you swoosh through the creps and peaks of a mountain range to enter a valley. With lasers firing, you steady your craft and take careful aim at a convoy of tanks.

Star Blazer by Sega is the official follow-up to Astron Belt but, unlike Astron Belt which is played entirely on space, you will be battling it out over many different terrains which include the standard airport, rocky mountains, oceans and deepest space.

The graphics are comparable with Astron Belt and are produced with the aid of Scanmate, a device which Sega claims creates ultra-realistic images. I tend to agree. The ocean seems to heave and roll and the fighters and enemy mother ships are very life-like — they resemble the Empire's battle ships of Star Wars fame.

Arcade managers will now be able to convert the old Astron Belt machines to the new Star Blazer by using the conversion kit from Sega.

## SWINGS BACK

quick and cunning enough, he can get the super spraygun and make quick work of Donkey Kong and his pack of pigs.

There are three different play-boards and four difficulty levels to Donkey Kong 3 providing variety and challenge. One or two persons can play and each player can get from three to six game lives. When you reach 25,000, 50,000 and 100,000 points, bonus lives are awarded.

The character's proven popularity, combined with fast action and superior sound effects, make Donkey Kong 3 a sure hit in arcades.



# ACTION

It's real-biting stuff as your two lucky heroes almost career off the edge of a cliff in their efforts to escape the bunch of boppers in hot pursuit.

Agile, named, Cliff Hanger keeps you on your toes throughout this fun-packed game filled with biting and amusing scenes, including nerve-racking car and helicopter chases, a beautiful girl to rescue and a meeting with some sinister hooded gangsters.

With animated cartoon-style graphics, comparable to Dragon's Lair, Cliff Hanger is one of the first games of its type to reach the UK. In the next few months we predict that laser disc games will become quite com-

## SAVED BY A SAMURAI SWORD

### CLIFF HANGER

mon in the arcades, but at the moment they are still very much a novelty.

The story begins with your two young lads escaping from a carina with bags of counterfeit money. They hop into their bubble car and a mad chase ensues through the busy streets.

Arriving in the country, they have a gunfight and, whilst repairing this, they see the Mafia-like badasses that part in a limousine chasing a helpless and beautiful blonde in a DCH Leapfrog to their feet, the boys pile into the bubble and give chase. A

helicopter chase follows and our intrepid heroes are rescued by the timely arrival of a samurai warrior in the city's sewer! As he brings the 'copper' crashing to the ground with his sword, he utters a few memorable words in a very un-Japanese accent — "Once again I cut a worthless sliver!"

A four-way joystick and feet and hand buttons control the action which is played out in cartoon-style graphics. Instructions like 'Stick' and 'Action' will flash

## WHIZZKID RACES INTO ACTION

If you think you're a scrambling whizz-kid — then try riding the Super Bike.

Bombing down a country lane, you shift into top gear and revving up your bike try to break the tail. Suddenly a series of potatoes split the road in front of you — jerking on the handle bars you pull the bike into the air and sail across them. But don't get too confident, more is to come.

Packed full of stunts, you've got every opportunity to prove that you're at least as good as or better than the infamous Eddie Kidd. Leaving over potatoes, fallen trees and bushes is the least of your problems. Scores of

into the screen and it's then up to you to decide in which direction to move and whether to use hands or feet. Each time you make a wrong move, you'll be told what you did wrong.

As in all laser disc games, there is a dead end between scenes while the laser scans the disc for the next scenario. This has been very well disguised with a notice telling you just look in the next scene.

Miles lots of action and great graphics, Cliff Hanger by Stern Electronics will certainly be a hit in the arcades in the New Year.

### SUPERBIKE

death heads in the form of skulls and crossed bones descend on you from out of the blue and, armed with a fire button, you must blast them back to hell before they land on you.

Other levels of skill and difficulty will include whizzing up a ramp and jumping over a line of boxes and, providing you've managed to stay on your bike, you'll reach a tunnel which has to be negotiated to reach the end of the game.

Besides the skulls — they'll be attacking from behind as well as in front.

## CUNNING IN THE COCKPIT

### FIRE FOX

Alan is entering into the laser disc game, race with other premises to be a thrilling spin-off from the movie Fire Fox, based on the action film by Warner Brothers which starred Clint Eastwood.

It's rumored that hundreds of thousands of dollars went spent buying the rights to Fire Fox and producing the arcade game with the aid of a simulation model of the cockpit.

You've stolen a top secret Russian fighter jet and have to fly it out of Russian territory to the Americans. The Russians don't let you get away easily and send up missiles and other fighter jets to stop you. Your plane has its own weapons system, but you'll have to use your skill as a fighter pilot and a lot of native cunning to escape in one piece.

Alan believes that Fire Fox will be a spectacular success and are planning to launch it sometime this year.



## THE SEARCH IS ON FOR THE C&V 1984 ARCADE CHAMPION!

Have you received the Princess in Dragon's Lair? Or have you come first in the Pole Position Grand Prix? Or maybe, you've destroyed the Zaxxon robot? If so you are a prime candidate for our 1984 Arcade Championship title.

Your name may well be placed all over the high-wave tables on several machines in your local arcade — but believe me, you can only call yourself a true arcade champ when you stand up to receive the Computer and Video Games Arcade Champion trophy!

In our next issue we'll begin the search for our 1984 champion. Your first move will be to fill out the coupon and mail it to us.

All we ask you to do is to take the form along to your local arcade, put it on the place where your favourite arcade machine lurks, get that high score and get the publisher or arcade owner to witness it for you.

You can aim for a high score on up to three different machines. Your chances of reaching our grand final in the summer are increased if you enter on more than one machine. There will be a grand prize for the overall champion plus runner-up prizes too. So don't forget — get next month's Computer and Video Games and begin your quest to become King — or Queen — of the arcades!



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# MICRODEAL





## KEEPING MARY AMUSED!

And now for something completely different! A graphics adventure where the action is played out before your very eyes!

Valkalla loads in a Spectrum under a striking title page and offers you six quests. These are to find special hidden objects: Chris (key), Dragons (ring), Gnomes (shield), Gulls (swords), Fairies (axe) and Gnomes (shields). These objects can only be discovered in the above order.

The gameworld has a cast of dozens, and at any location you may expect to meet and perhaps close friends with a range of gods and goddesses (including Mary), plants, dwarfs, wolves and dragons, of varying temperaments and abilities.

## BY KEITH CAMPBELL

In search of the foreign objects, you move around by issuing the usual Adventure commands, but may also play a 'wild card' by jumping on to a ringway if one is present. This is a magical method of transportation rather than a continuous urban dial carriage-way, and to travel one you must be carrying, of course, a ring!

Where Valkalla is different from other graphical Adventures is in its display format — the screen is split into three bands.

On arrival at a location, the top half displays an excellent hi-res picture, drawn very quickly. I got the impression that these graphics were composed of modules, re-arranged to give many combinations of picture from the same blocks.

Next, the lower 20% shows the text replies, whilst the final band either too closely draws the characters and objects present. The centre band therefore appears to form a continuous picture with the top band, like a stage.

In some ways, this game is like Hobbit, for all the characters have a mind of their own, and appear, disappear, drop things and attack you and each other according to their whims. But unlike Hobbit, they actually move. Their little legs walk, they jump about whilst fighting, and lift their wine to their heads when they drink. As this happens, so a text commentary is written below. If you want to pick up an object, then your figure will walk across the screen and get it.

Of course, all this slows down the rate

## A COLOSSAL TALE OF COUNTRY FOLK

James Frost is stuck with a Colossal problem, trying to pass the time. He is at his little hut — and that bothers him too!

Steve Waller and Ian Hall have so far amassed 274 points out of 1786 in this game, and admit they can get no further. They have heard of dwarfs sleeping in a cave, and of dynamite. They urgently need directions to find them, if I can't help, who can, they ask? Oh dear — I can't! Who can?

But the most elegant Colossal piece comes from Mr. Dan Clark and Dr. Andrew Kingston, playing away at Skyhawk Farmhouse near Norwich. Funnies that they are, they turned hard to crave help:

### Bumpkins' Lament

Colossal Claspin maulsme game,  
Is driving us poor kids insane.  
It seems we've run right out of luck,  
We got so far and then got stuck.

We have the jewelry and the nose,  
The golden eggs and silver ho's.

The uplan and the precious nugget  
(Quite a way we had to leg it).

Can you help us in some measure  
With the other hidden treasure?  
Y2, carved upon a rock,  
Could it be a secret lock?

The rug we think perhaps can fly  
To secret places in the sky.  
With the mirror smashed and  
broken,  
Lead us to another token?

"Hecus! Sazama! Sazama!"  
"Nothing happens!" — blast and  
dum!  
Bumpkins both in helpless plight  
Please give us from more sleep-  
less nights.

To which I can but reply:

Hi Dan and Aa! Oh'waa is mine!  
I've had it tape from Level 5,  
And so, you see, I must rely  
On that great Mainframe in the sky.

My problem is with some predicted,

Time on Cambridge's much re-  
served.  
That keeps in this game is brief  
And efforts mostly same to grief.

I've caged the bird that wings it  
quick,  
(That ruby star's a nasty trick!)  
I've built and crumpled a bridge of  
crystal,  
And lost lung's light for mares  
and foal.

I've kissed a frog (some think me  
kinky!)  
And gazed on words to princess  
slimy.  
I think I'll catch some tadpoles  
soon.  
The way those frogs cover! the  
room!

To readers all with Y's adventure!  
I herewith offer my apologies,  
In return for heaps of cheer.  
Please get on and to bumpkin  
bliss.

## EDUCATION THROUGH ADVENTURE

Solving an Adventure, so most of us know to our cost, is often a matter not only of solving a puzzle or being observant, but of hitting upon a particular word or phrase. Out comes a dictionary and Roget's Thesaurus, and with perseverance, we win through!

But what of an Adventure written in a foreign language? How can one around? Not played *Le Malin d'Amusement Mystère*? Nor have I!

Consider the plight of Walter Gumpfer from Edgemoor, near Brussels. "Hoping you will forgive my mistakes against 'living English'," writes Walter, "but you're my last hope from being kept away from seeking Scott's Mystery For Hours". Walter had spent more than a month consulting friends and relatives, and studying English dictionaries, to no avail. He still got shot from the shooting gallery.

Walter could not be sure whether it was an English word or phrase he

needed, or if his problem was the puzzle itself! So I was pleased to be able to reassure him on his English, and split the beans! (Sorry, Walter — I mean 'reveal all'). That, of course, highlights one of the difficulties of playing Adventure in a foreign language. The phrase I just used has nothing to do with making a nasty mess in the kitchen! However, because you have to master its idioms, playing Adventure in a foreign language is a good way of learning the 'living' language!

Rene di Giovanni wrote from Amsterdam to relate his difficulties with *Egyptenzer Island* played on a ZXII. He was stuck in the plane, and unable to escape without dying. FULL CORO is the clue, and Rene could see the card, but perhaps that phrase is particularly English.

On the other side of the coin, our lock-collector and masochist

Adventure-jammer, Bill Stanton, spent his holidays in Germany, and got involved in translating a French Adventure. "Have you ever tried getting French-speaking Germans to give you the sense of idiomatic French phrases in German-English ... ?" asks Bill. He is now back home in St. Alban's trying to recover, and probably programming his Pet with well-known Basic statements like: FOUR JET% = 1 A 8 : 31 (BLUE%) - 21 ET (Y - 8) PLUS VS. A 8000 PROGRAM JET%.

On a more serious note, the Adventure format lends itself admirably to educational software of all sorts, especially languages. It is an area of software that has not been exploited. Wouldn't school pupils find it fun if their next French homework was "Comment reconnaître-vous le dragon domestique"? They would have to play a special version of Adventureland — in compiled French, of course!

of play, but if you like watching it all happen, then you'll get up with that.

Valthala had a range of special commands. WHO will list the characters in the text area, with an arrow pointing upwards to each image. WHAT will do the same for objects. HOW will tell you your current strength and so on. Should you type in anything unwarmed, you will be told Mary is not amused. A little fellow will walk onstage, and in a very determined way approach you to demonstrate. This will cause your figure to flash severely!

Valthala is written in Basic with some machine code routines. A look at the listing won't reveal much in the way of clues. And despite protection against looking at the listing, it is easy because, despite all the ladylike pretending to assist, and a seven-string production team, Valthala has at least one bug, which will cause the program to stop and you to reload. But will YOU discover the words that crash the game?

Valthala is from Legend, copyrighted and reviewed at £14.95.

## GATEWAY

When we had a family visit recently, all the kids made for the computer room. This is known in most houses as a dining room — but it enables us to play while we eat!

They ignored Space Adventure on the Spectrum (don't blame them) and Jark on the TRS-80 (Stuart), and although Douglas spent it, deflected to Denker Bomp on the Dragon, Karl and Rebecca headed straight for Gateway to the Stars on the Beek. Of course, the Beek is a schoolfriend, and my ulterior motive is getting them to help me through a review whilst being happy.

## PHILOSOPHERS, INCAS AND SORCERERS

Many try to enter the portfolio, but are cursed by the boxes: many the right things — one of them must be checked out of the list.

To James Jenson playing Ship of Ocean: a double switch may cast light on your problem.

To Brian Jenson playing Sorcerer's Island: library isn't any dividends.

For the impossible mission: don't be bad — do as you might, take the bomb up to the water.

For philosophers everywhere: approach chests with protective gloves, and after taking it, stop it every so often for a bit. To relieve your sack, find the workmen in the MI passages. Hop, crawl and run when in danger! And how many dogs do you want? Better for three? Can you spot the second? You'll have to spot the third!

able to visitors had worked!

I went off to quell home-made beer and make polite conversation, and occasionally popped back in to see how they were doing.

Quick responses — good! Write on blacked text — bad! Replies less than terse — good! Karl had used a credit card in the village supermarket and got the reply "That'll do nicely" I liked it! Back to the quaffing ...

I could hardly wait till they all went, and I was straight on to the Beek.

Now hardly Adventure's will never pass up the opportunity to take a lamp or food. Once spotted, you can guarantee there will be an area of darkness ahead, and that you will need sustenance. So I took the lamp offered me in the gift shop, and proceeded to the supermarket with my credit card for food. That is where it all went wrong.

The supermarket cashier talked on the deal, disappearing with my card without handing over the food. On impulse, I tried to shoot her with my laser gun. "I don't understand the word cashier," EXAMINE FOOD. "I don't understand the word EXAMINE," LOOK FOOD told me where I was.

Now just as necessary as a lamp, is the Adventure's stock-in-trade — "LOOK (or examine) object". Being able to look at, and examine things is one of the means by which an Adventure gets mystery and excitement in a game. Through this device, the author is able to avoid blatant clues, making the player wait until he deduces there must be more information. The player is then often given a puzzle or cryptic clue to chase on.

I got the food later, but my enthusiasm was shattered. A pity, for the game held much promise!

Vocabulary — bad, logically difficult — disastrous. Posthumous — slightly promising. Shall I try again ...?

Gateway to the Stars comes in two parts. I only looked at the first half, as you have to save data at the end of it to enter part two.

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## HELPLINE

Every now and again one of those desperate people trapped in a small room with a calculator writes in. The fact they are not in an asylum yet is a tribute to their tenacity. Has ANYONE got out of there since I last wrote about Deathmare 5000, a couple of years ago?

Mr. Poles of Letterworth will be disappointed to learn that the general consensus of opinion is that the Philosopher's Quest lamp cannot be lit.

Congratulations to Robert Davidson from Macclesfield, and Colin Sigmund from Littlehampton, the only readers so far to lay claim to completing this game. In a long helpful letter, Robert suggests that Mr. Poles must have been sleeping with the lamp on, for the game can be completed without relighting it. Colin Sigmund says it cannot be told, and warns Mr. Poles to be careful in its use — especially when talking to the old sailor. James Frost of Wintlesham agrees, and suggests using matches for extra lives.

But what's this? Karl Howald writes from Rochdale and says the lamp CAN be relit — type-F100 LAMP. I suspect the confusion is because Mr. Poles did not state whether or not he had run out of fuel.

Shaggy dogs, chemie and alliterations are among the favourite subjects of all good Philosophers, and clues have arrived from numerous sources, including Roger Durrell, Mark Chaffey, and C. M. F. Bone, to help David Samuels.

Karl Lamb from Lawton near Warrington is shedding crocodile tears in the comments. He is playing, or rather trying to play, Sphinx. Why does his magic bridge collapse when he tries to cross it?

And what about those cross?

Christopher Thynp is a troubled man. He's got five adventures in a state of chaos down in Bristol. I can help him directly with some, but here is a place in which I join — how DO you open the Xmas cave?

Martin Grant of Westwich is lucky enough to be playing Zork on a VAX-11/580, but is unlucky to have run into severe problems. (Don't we all?) What is the receptacle in the bathroom for? Martin suspects it's for something with which to heat the oil, but the only suitable object he can find is an ivory tooth which burns out after melting the glacier. Come in Jack players!

Do you know where to find the second stone tablet in Golden Voyage, to help Paul Harditch in Rotterdam?

Some find Mixxer impossible too simple, others impossible. Discovering the bomb has caused much confusion, especially to Andrew Dobson. See page 82 for the clue.

So many readers have written in

with high Hobbit scores, it would take a page to list the names! So here is the only claimant to a 100% score so far — by Keith Oliver of Tebbestrey.

From David Worthington of Baldingstone, come some comments about Swords and Sorcery. He suggests that Messrs. Hughes and Howorth have not enjoyed the full flavour of the game, which can only be done playing the two-player version.

"The great advantage this has is that the players can actually enter the dragon's lair, gather up the treasures inside, and talk to each other to combat the excruciating boredom," writes David. "Incidentally," he adds, "the dragon plays no part in the game and might just as well be a giant sausage in a sinister cap." —

If YOU are stuck in an Adventure, can help an Adventurer in distress, or have an interesting or amusing Adventure experience, write to me at Adventure Helpline, Computer & Video Games, Durrant House, 8 Herby Hill, London EC2H 5JH.

## CROSS THE DOTS!

Space Island turns your Spectrum into a control panel on board a spaceship in outer-space orbit above the island of Skola on the planet Tyra. You control an android who 'stands alone amidst wreckage and awaits your command'. Your TV set becomes a videoconsole (what else?) showing an 'orbital map' of Skola Island.

Sometimes my Spectrum didn't quite have the feel of a control panel — well, let's face it, have you ever seen a control panel you can slip into your back pocket and not notice?

Obviously my pet android felt this, for when I tried to move him around the tiny island (this is a dirty great cross trying to renderless with macroscopic dots representing objects), he didn't respond with quite the alacrity one

might expect from such a high-tech device. Once moving, this elaborate creature would proceed steadily in the same direction until commanded otherwise. Even after a good night's sleep he would make up and plod on regardless in obedience to his previous instruction.

Apart from this painful method of movement, Space Island boasts a vocabulary of 18 words, yes folks — 18! Not whole words admittedly, but the usual letters of words.

The cassette (also mentions stick machine code display. However, the program is written in Basic, and reaction is not as slick enough to give adequate control.

Space Island is for 48K Spectrum from Twinnoid Software, price £8.95. Fairly apt, for if I'd played it for much longer, I would now be suffering from terminal boredom.

## THE HOTWARE PEOPLE

## METAMORPHOSIS

Was blundered into the end of the **Cyphina** and  
 smothered yourself **Syrphomyia** instead. I was  
 guarding for **Cyphina** eggs. You think you  
 have more yellow water collected and there the  
 eggs start hatching. **Comptosia** 24-25  
 1940. 4 different species.  
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 27.88

The creator assembled a group of young adolescents and reports his time spent with them as "the most joyful, most fruitful, and most important of my life." The author has become a well-known public speaker, and his book has been translated into many languages. He also films and produces television documentaries. To do so is different

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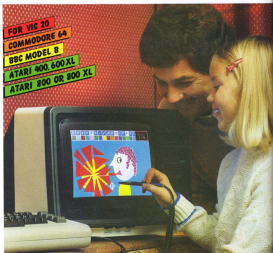
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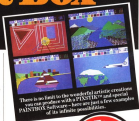


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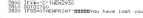
CY02

BY FRANK ROONEY  
RUNS ON A SHARP MESSAGE

# LOST IN THE JUNGLE

Remember last issue when we left you high and dry in the jungle? Well, this time we are going to help you get further back to civilization! Frank Rooney, our Sharp programmer, is the man behind the beautiful graphic adventure. It is challenging you to find your way out of an unexplored jungle with only your wit — and a few other bits and pieces you'll pick up along the way — to help you. Does that take up the challenge in part two of our Adventure special? Find out next month!

```
1750 IFB=0:GOTO0000
1760 IFB=1:GOTO0000
1770 GOTO0000
1800 GOTO0000
1810 PRINT"*****Daily is a better route
      speed!" (code ENT1025)
1820 GOTO0000
1830 PRINT"BTB:RAKES YOU QUITE ILL"
1840 H=1:G=0:GOTO0000
1850 H=0:G=1:GOTO0000
1860 H=1:G=1:GOTO0000
1870 PRINT"*****DAILY IS BETTER"
1880 "IMS" "*****IMS"
1890 PRINT"***** MAY BE YOU BET"
1900 PRINT"*****"
1910 PRINT"***** EAST"
1920 PRINT"*****"
1930 GOTO0000
1940 GOTO0000
```



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### ARCADIA

One of the best selling games around from Imagine. You can enter on the Spectrum or Vic versions — but don't forget to tell us which?

### JET-PAC

The game that made Ultimate a top name in the world of games software overnight and which is rapidly becoming a cult game. For the Spectrum and Vic.

### DIAMOND

English Software have high hopes for this mining game and are now offering a Diamond as a prize! For the Atari owner.

### KRAZY KONG

The best version of Krazy Kong we've seen for the Vic. From Asilog.

### VIOLENT UNIVERSE

From Quest, the company who have developed a high score verification system for their Spectrum games.

### MANIC MINER

Shaver addition for the Spectrum from the Bug Byte people.

### SPLAT

Help Dippy survive in this extremely playable game from new games company Incentive Software.

### ZALAGA

Space age action from Ardwork for the BBC.

### ATIC ATAC

A great new graphics adventure-style game from Ultimate.

### 3D DEFENDER

Melchior Drons' game for New Generation Software which set new standards for graphics on the ZX81.

(Dr Richard Williams, please send your high scores direct to Quest at the address on the cassette label and NOT to C&VG. Quest have their own way to verify scores.)

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- 1) Stephen Powell, Wolverhampton — 8,283,975
- 2) J. Denning, Amersham, Bucks — 4,910,595
- 3) Roger Sayle, Folkestone, — 4,888,845
- 4) Robert Gidding, Hornchurch — 4,185,720
- 5) Jamie Hickman, Northampton, — 4,116,886

### MANIC MINER

- 1) Julian Rignall, Dyfed, Wales, — 2,000,803
- 2) Stephen Lynch, Wallasey, Merseyside, — 1,753,599
- 3) A. Pritchard, Newark, Notts — 1,150,733
- 4) Martin Leach, Oxpington, Kent, — 1,006,350
- 5) Grant Harrison, Sidcup, Kent, — 715,325

### PASSIC

- 1) G. Sutton, Stoke on Trent, — 1,558,000
- 2) Simon Taylor, Cambridge, — 1,268,700
- 3) Marc Watson, Bristol, — 1,262,100
- 4) Peter Tunner, Sheffield, — 1,203,700
- 5) Michael Tyrre, Whiteley Bay, — 1,119,000

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- 1) Phillip Waterhouse, Bury, — 244,040
- 2) Andrew Chader, Nottingham, 172,740
- 3) Shane Moss, Colchester, 167,513
- 4) Matthew Brown, Exeter, 163,580
- 5) N. Sharp, Penrith, 128,820

### PLANETOIDS

- 1) Paul Dhanan, Reigate, Surrey, — 686,200
- 2) Matthew Constable, Andover, Kent, — 662,800
- 3) Peter Harrison, Exeter, Devon, — 593,550
- 4) Calvin Lawrence, Peterborough, — 582,225
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In the New Year we'll invite some of the best top scorers along to a special finale to prove their skills in the spotlight. In the meantime we'll be printing the top five scorers in our Hall of Fame selection each issue.

And each month we've got a C&VG "The Champ" t-shirt to give away to the top scorer on each game featured on this page. Your score doesn't have to be better than the one we printed the issue before — it simply has to be the highest we've received in time for our current issue's deadline.

We'd also like to hear from you if your favourite game isn't included in the Hall of Fame line-up. Maybe you'll persuade us to squeeze it in!

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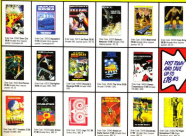
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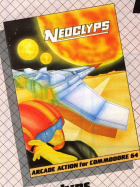
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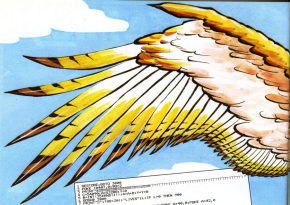
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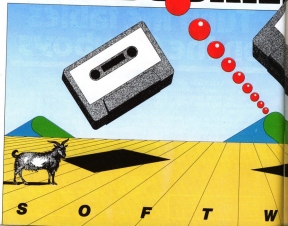


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"...a compelling piece of lividity that could give hours of fun!" was the verdict of Personal Computer News (22-28 Sept '83).



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```

0010 PRINT "LOCATION":; BEEP;.5
0020 PRINT
0030 PRINT "A FULLY AUTOMATED RU
0040 STATION MONITORED BY
0050 RIGHTS AND PROTECTED
0060 BY A LARGE
0070 DEFENCE MECHANISM."
0080 BEEP;.5
0090 CLS
0100 PRINT "PROBLE?"; BEEP;.5
0110 PRINT
0120 PRINT "FUEL AND HANDLING MA
0130 ALL DOES NORMALLY
0140 TIME TO CRITICAL
0150 HURRY CONCLUSION."
0160 BEEP;.5
0170 PRINT "MISSION":; BEEP;.5
0180 PRINT
0190 PRINT "YOUR MISSION SHOULD
0200 YOU DECIDE
0210 TO TAKE IT IS TO GET
0220 THE INFORMATION AND FOUR
0230 TO THE PROTECTIVE LEAD
0240 CONTAINERS." BEEP;.5
0250 BEEP;.5
0260 PRINT "TOP SECRET":; BEEP;.5
0270 PRINT
0280 PRINT "BRIEF":; BEEP;.5
0290 PRINT
0300 PRINT "1. The fuel rods are
0310 located at the top of the screen
0320 can be repositioned easily as
0330 the fuel rods are
0340 indicators attached."
0350 BEEP;.5
0360 PRINT
0370 PRINT "2. The lead containers
0380 situated in a
0390 at the
0400 BEEP;.5
0410 PRINT
0420 PRINT "3. You will transfer
0430 the rods
0440 to these containers
0450 in order
0460 PRINT "PRINT".5
0470 PRINT "Press X to select
0480 circle."
0490 IF INKEY="X" THEN GO TO 50
0500 GO TO 5000
0510 CLS:;
0520 PRINT "CONTROL SELECTION."
0530 PRINT
0540 PRINT "DOWN ARROWS Press C
0550 PRINT "ARROW UP" BEEP;.5
0560 IF INKEY="C" THEN GO TO 51
0570 IF INKEY="J" THEN GO TO 54
0580 GO TO 5000
0590 LET J=0
0600 GO TO 5000
0610 LET J=0
0620 GO TO 5000
0630 STOP
0640 FOR n=0 TO 100
0650 READ a
0660 FOR user "a"=0,1
0670 IF
0680 RETURN
0690 DATA 0,BIN 00000000,BIN 000
0700 BIN 00000010,BIN 00000000
0710 BIN 00000010,BIN 00000000
0720 DATA 0,B,B,B,B,B,BIN 0000
0730
0740 DATA BIN 00000000,BIN 00001
0750 BIN 00000000,BIN 00000000,B
0760 BIN 00000000,BIN 00000000,B
0770 DATA 0,B,B,B,BIN 00000000,B
0780 BIN 00000000,BIN 00000000,B
0790 DATA 0,BIN 00000000,BIN 000
0800 BIN 00000000,BIN 00000000,B
0810
0820 DATA 0,BIN 00000000,BIN 000
0830

```

[illegible]

[illegible]



# QWARRK

You are on a secret mission to a remote planet for the Intergalactic Federation, picking up strange creatures from robot-controlled bases. Santa has been dropping off unwanted Christmas presents in this sector of the universe — and the Federation boss has told you he wants them back! Santa has chosen some really awkward spots to drop off the gifts — so you'll have to brave the dangers of the planet in order to complete your task. There are few landing sites, gravity is extremely strong — and you are running low on fuel. Something Santa never had to bother about! You'll score more points for a landing in a really difficult spot — so experienced pilots will score well. Full instructions are involved in the program. Happy landings!

```

360 FOR T=4276..8
370 IF PEEK(157)=4 THEN GOTO 400, 5: P=F+12: GOTO 50000
400 IF PEEK(157)=5 THEN GOTO 400, 25: P=F+2: GOTO 50000
410 IF PEEK(157)=12 THEN GOTO 410, 3: P=F+1
420 IF PEEK(157)=23 THEN GOTO 410, 4: P=F+1
430 LET C=20, 1
440 LET V=10000
450 IF V<225 THEN GOTO 50000
460 IF V<40 THEN GOTO 50000
470 IF V<4 THEN GOTO 430
480 FOR CV=1 TO PEEK(V+1): V1=GO TO 440
490 IF V1=27 THEN V1=22 THEN P=25: GOTO 7000
500 IF V1=30 THEN V1=35 THEN P=10: GOTO 7000
510 IF V1=13 THEN P=25: GOTO 7000
520 IF V1=30 THEN P=10: GOTO 7000
530 P=15: GOTO 7000
540 GOTO 5000
550 PRINT "FUEL:"; *****: P
560 RETURN
440 IF PEEK(CV+27)=1 THEN GOTO 5000
5000 LET V1=27-255
510 FOR CV=1 TO 1
520 RETURN
530 IF V<27 THEN GOTO 520: FOR CV=1 TO 8: RETURN
550 PRINT "CV:" PEEK(CV+1)

```

BY IAN HUGHES

RUNS ON A COMMODORE 64

```

7001 IFORC=1THENPOKE54296,0
7010 IFORC=1THENPRINT"WOW LARGED BUT YOU HIT RATHER TO HARD"
7020 IFORC=1THENPRINT"SO SORRY BUT YOUR WOUNDS ARE VERY BAD"
7030 IFORC=1THENPRINT"READ YOU I LIKE THE 5 MILE CATER 1000"
7041 IFORC=1THENGOTO5100
7042 PRINT"WELL, DOME YOU LANDED SAFELY"
7043 IFORC=0THENRND=10
7044 IFORC=0,2ANDRND=0THENRND=3
7045 IFORC=0,3ANDRND=0
7046 IFORC=0,7ANDRND=3
7047 IFORC=0,8THENRND=0
7048 POKE54296+RND*10,RND*10+RND
7050 POKE54296,15
7051 POKE54277,9:POKE54276,33
7052 POKE51030,NEXT
7053 GOTO540
7054 ROAD1
7077 GOTO=1THENPOKE54273,8:POKE54272,8:GOTO7001
7078 POKE54273,40:POKE54272,10
7080 POKE 54276,8:GOTO7051
7081 FORC=1TO10
7082 PRINT"
7083 PRINT"THE GOOD LANDING #POKE54276,1:P,=
7087 GOTO=1TO100:NEXTV:NEXTC:GOTO5100
7100 DATA22,227,28,214,38,126,38,126,36,85,34,75
7111 DATA22,227,28,214,38,126,38,126,36,85,34,75
7112 DATA22,227,28,214,38,126,38,126,36,85,34,75
7113 DATA22,227,28,214,38,126,38,126,36,85,34,75,-1,-1
8000 POKE54296,15
8001 GOTO=1TO10
8002 FORV=1TO100
8003 POKE53201,8:POKE53201,1:POKE53201,8
8004 NEXTV
8070 POKE54296,15:POKE54277,17:POKE54272,1:POKE54276,120
8072 POKE54273,13ANDRND*10+5
8080 POKEV=28,1:FORC=1TO1000:POKE54276,33:NEXTV:POKEV=28,8
8081 NEXTV
8085 POKE54296,8
8086 POKE54276,8:POKE54277,8
8087 POKE53581,2
8100 PRINT
8101 PRINT"ANOTHER GAME V IS H"
8104 POKE158,8
8110 INPUT$
8120 FOR C=1TO LEN($$):IFRND*84,C)=0"V"THENRND
8121 NEXTC
8130 PRINT"THEY THEM:END
9000 IFRND*197=0ANDRND=15
9001 IFRND*197=0ANDRND=40
9002 POKE54296,0:POKE54277,9:POKE54276,120
9003 POKE54276,120:POKE54273,6:POKE54272,10
9015 RETURN
9030 PRINT"YOU ARE ON A MISSION FOR THE FEDERATIONWHEN ALL OF A sudden you
9040 PRINT" DETECT A FLAT ON BOARD YOUR SHIP, THERE IS ONLY ONE COURSE OF"
9050 PRINT" ACTION, YOU MUST ATTEMPT A FORCED LANDING ON THE PLANET SURFACE."
9060 PRINT"FOR YOU THERE ARE SEVERAL DIFFICULTIES:"
9070 PRINT"1. THERE ARE ONLY A FEW LANDING SITES"
9080 PRINT"2. THE GRAVITY IS STRONG, PULLING YOU TO DOWN"
9090 PRINT"3. YOUR ENGINES ARE SPUTTERING AND USING FUEL QUICKLY"
9100 PRINT"4. YOU MUST LAND EXACTLY USING 1/2 ENGINES"
9110 PRINT"5. THE WALLS ARE MADE OF ANTI-MATTER, THEY ARE DEADLY TO TOUCH"
9111 INPUT"PRESS RETURN KEY"AS RETURN

```



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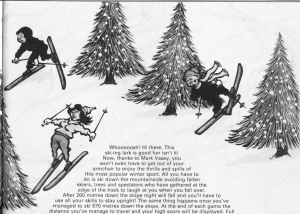
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After 200 metres down the slope night will fall and you'll have to use all your skills to stay upright! The same thing happens once you've managed to ski 670 metres down the slope. At the end of each game the distance you've managed to travel and your high score will be displayed. Full instructions are included in the program.

#### PROGRAM NOTES:

10-20: characters. 130-135: instructions. 337-360: ground movement. 360-390: man movement. 370-395: checks for collisions. 340-385: end routine.

```

100 PRINT TAB(7) "*****"
110 PRINT "X-00, 00: P0E2X+0, 00
120 SCORE=(1/47+37TH340-1): P0E2X+0, 0
130 Y=0: P0E2X, 15
140 SCORE=(1/47+34TH340-0+1): P0E2X+0, 0
150 Y=1: P0E2X, 15
210 PRINT
220 P0E2X+0, 4: P0E2X, 0
230 P0E2X+0, 0
240 P0E2X+0, 0: 100TP
250 X=INT(RND*(1/47)+1
260 Y=INT(RND*(1/47)+1
270 P0E2X+0, 0-0
280 P0E2X+0, 0-1
290 PRINT
300 X=INT(RND*(1/47)+1
310 Y=INT(RND*(1/47)+1
320 PRINT
330 P0E2X+0, 0-0: 37TH340

```

```

330 P0E2X+0, 0-0: 37TH340
340 P0E2X+0, 0-0: 37TH340
350 P0E2X+0, 0-0: 37TH340
360 P0E2X+0, 0-0: 37TH340
370 P0E2X+0, 0-0: 37TH340
380 P0E2X+0, 0-0: 37TH340
390 P0E2X+0, 0-0: 37TH340
400 P0E2X+0, 0-0: 37TH340
410 P0E2X+0, 0-0: 37TH340
420 P0E2X+0, 0-0: 37TH340
430 P0E2X+0, 0-0: 37TH340
440 P0E2X+0, 0-0: 37TH340
450 P0E2X+0, 0-0: 37TH340
460 P0E2X+0, 0-0: 37TH340
470 P0E2X+0, 0-0: 37TH340
480 P0E2X+0, 0-0: 37TH340
490 P0E2X+0, 0-0: 37TH340
500 P0E2X+0, 0-0: 37TH340
510 P0E2X+0, 0-0: 37TH340
520 P0E2X+0, 0-0: 37TH340
530 P0E2X+0, 0-0: 37TH340
540 P0E2X+0, 0-0: 37TH340
550 P0E2X+0, 0-0: 37TH340
560 P0E2X+0, 0-0: 37TH340
570 P0E2X+0, 0-0: 37TH340
580 P0E2X+0, 0-0: 37TH340
590 P0E2X+0, 0-0: 37TH340
600 P0E2X+0, 0-0: 37TH340
610 P0E2X+0, 0-0: 37TH340
620 P0E2X+0, 0-0: 37TH340
630 P0E2X+0, 0-0: 37TH340
640 P0E2X+0, 0-0: 37TH340
650 P0E2X+0, 0-0: 37TH340
660 P0E2X+0, 0-0: 37TH340
670 P0E2X+0, 0-0: 37TH340
680 P0E2X+0, 0-0: 37TH340
690 P0E2X+0, 0-0: 37TH340
700 P0E2X+0, 0-0: 37TH340
710 P0E2X+0, 0-0: 37TH340
720 P0E2X+0, 0-0: 37TH340
730 P0E2X+0, 0-0: 37TH340
740 P0E2X+0, 0-0: 37TH340
750 P0E2X+0, 0-0: 37TH340
760 P0E2X+0, 0-0: 37TH340
770 P0E2X+0, 0-0: 37TH340
780 P0E2X+0, 0-0: 37TH340
790 P0E2X+0, 0-0: 37TH340
800 P0E2X+0, 0-0: 37TH340
810 P0E2X+0, 0-0: 37TH340
820 P0E2X+0, 0-0: 37TH340
830 P0E2X+0, 0-0: 37TH340
840 P0E2X+0, 0-0: 37TH340
850 P0E2X+0, 0-0: 37TH340
860 P0E2X+0, 0-0: 37TH340
870 P0E2X+0, 0-0: 37TH340
880 P0E2X+0, 0-0: 37TH340
890 P0E2X+0, 0-0: 37TH340
900 P0E2X+0, 0-0: 37TH340
910 P0E2X+0, 0-0: 37TH340
920 P0E2X+0, 0-0: 37TH340
930 P0E2X+0, 0-0: 37TH340
940 P0E2X+0, 0-0: 37TH340
950 P0E2X+0, 0-0: 37TH340
960 P0E2X+0, 0-0: 37TH340
970 P0E2X+0, 0-0: 37TH340
980 P0E2X+0, 0-0: 37TH340
990 P0E2X+0, 0-0: 37TH340

```







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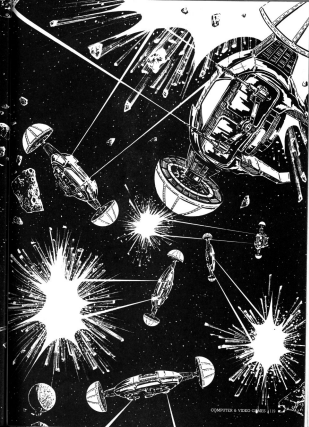
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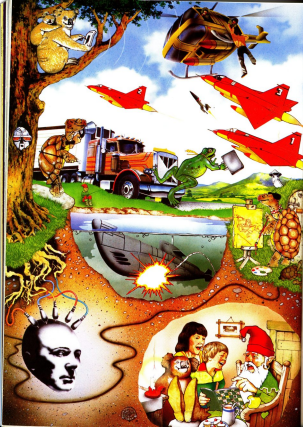
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# Your wish is your command.

In another time, another world, not too far away from your own front room, you can be in command of . . .

## L. Zourenko &amp; R. Zourenko

You're the pilot. Climbing, diving, swooping in on an enemy fortress. A barrage of missiles and gunfire will try and stop you. Just when you think you're through, a powerful robot's lethal homing missile zaps you... or does it?

## 2. Problem for Simon DeLima

Now you're a frog stranded a long way from home. A perilous journey awaits you. Once across the busy motorway, a surging river full of logs, turtles and alligators awaits. Better flies those froggy leg-muscles though. The bank is steep, so look before you leap!

## 1. Google's New Touch Tablet for Android

You can't overlord this Kogal — he'll make his own menu selections. He'll also move game players.

## Take medical n

lar graphics and much more. The RousaPad Touch Tablet is an accessory that'll enhance the capabilities of your home computer system.

1. **Introduction**

*Sp. Adventure International*  
Take a deep breath — you'll need it to navigate your sub through a labyrinthine underwater passage to face the menace of the imprisoned Sea Dragon. Mines, decaying cbs and lethal laser beams await you in this murky underwater world. You're limitless top-down, but limited air, so hurry!



## 2. Turtle Graphics III: Box Plots

This Turtle's about to paint the town red. Or green. Or blue with pink spots. By teaching him to paint, draw and colour he'll teach you, painlessly and enjoyably, the basics of computer programming — maths, logic, communications and more with over sixty commands. Ideal for children from six to sixty.

### 6. Check that the file is not corrupted

Sixteen hostages are holed up in an inaccessible barracks. Only an ace chopper pilot can free them — you!

Watch out for the tanks, they'll crush anything. They're just for starters – fighter jets and the awesome bombing airplanes are yet to come. Good luck... you'll need it!

## 7. Rule and the Logic of Moral Responsibility

These books will teach you, simply, how to write your own programs. Step-by-step instructions teach you how to create your own action, board and word games. Programize your finances or even learn another language — whatever you do, you'll get the most out of your home computer.

#### B. Suspended by Extension

20 miles beneath the earth's surface your brain is wired to a computer network. You'll strategically manipulate 6 robots to overcome a myriad of realistic and original problems as you try to maintain surface-side equilibrium. But don't worry, the end is in sight — you're only there for 500 years!

Phone, back to earth! Now begin yourself over to your local dealer and check out his software. He's got just about everything, we should know, we supply it.

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[illegible]

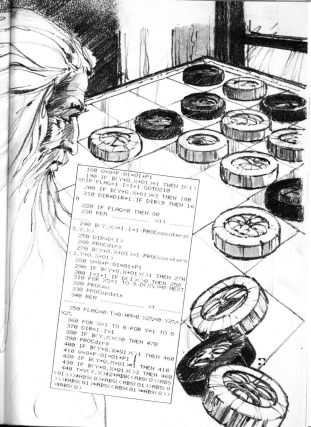
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# REVERSI

The object of the game is trap a row of your opponent's counters between your pieces. If you succeed, all the pieces that have been captured change to your playing colors. The best winning tactic is in strategy as many of the corner squares as you can. This puts you in a powerful position, allowing you to attack the computer's pieces without endangering your own counters.

At the end of a game, when the board is full or when neither player can move, the score is added up and the winner announced.

[illegible]



```
100 G=0:P=0:I=0+P1
150 IF B(Y+0,X+0)=1 THEN D(1)
DIR=FLAG+1:I=I+1:GOTO210
200 IF B(Y+0,X+0)=3 THEN 100
210 DIR=D(1)+1:IF DIR=3 THEN 14
0
220 IF FLAG=0 THEN G0
230 REM
```

```
240 B(Y,X)=1:I=1:PROCOUNTER=1
3,Y,X)
250 DIR=D(1)
260 PROCINE
270 B(Y+0,X+0)=1:PROCOUNTER=
3,Y+0,X+0)
280 G=0:P=0:I=0+P1
290 IF B(Y+0,X+0)=3 THEN 270
300 I=I+1:IF D(1)=3 THEN 270
310 FOR X=1 TO 8:IF X=I+1:NEXT
320 PROCIN
330 PROCUPDATE
340 REM
```

```
350 FLAG=0:T=0:W=0:Z=0:Y=0
X=1
360 FOR X=1 TO 8:FOR Y=1 TO 8
370 DIR=1:I=1
380 IF B(Y,X)=0 THEN 470
390 PROCINE
400 IF B(Y+0,X+0)=3 THEN 400
410 G=0:P=0:I=0+P1
420 IF B(Y+0,X+0)=1 THEN 410
430 IF B(Y+0,X+0)=3 THEN 410
440 T=Y,Y,X+2:W=0:Z=0:Y=0
450 T=Y,Y,X+2:W=0:Z=0:Y=0
460 T=Y,Y,X+2:W=0:Z=0:Y=0
470 T=Y,Y,X+2:W=0:Z=0:Y=0
```



# The BBC Micro can now give your children a private education.

The BBC Microcomputer now accounts for 80% of the computers being ordered under the current ECCL Primary School Scheme.

It's also the computer which a rapidly increasing number of people are choosing for their homes.

One of the reasons for its success is that it makes learning highly entertaining for everybody. From children who are getting to grips with the alphabet, to adults who want a gentle but intensive introduction to the complex world of computing.

Now, there's a substantial new catalogue of educational programs specially for the BBC Microcomputer.

It has been developed by Acornsoft, the software division of Acorn Computers who manufacture the BBC Micro.

## Making faces without getting awkward.

With the new Facemaker program, your children can make over a million faces. It's like an identi-kit, allowing them to depict anyone they want. They start by choosing the eyes. Then they can choose the mouth, the ears, the nose, the facial outline and the hairstyle.

And if they really fancy dressing up, they can add earrings and hats.

In doing all this, they learn to read and spell, as well as developing their powers of description.

## The money program, two games for the price of one.

Mr T is an engaging little figure of the microchip who can teach your children all the complexities of our coinage system.

His Money Box program has two games, each of which can be played at different levels.

In Money Match, the challenge is to collect a set of coins, matching them according to shape, size and value.

In Money Box, you can give your child and Mr T a helping hand to get all the coins on the screen into the box. (It always different, because the coins on the screen are based on the small change you have to hand.)

## A chance to teach the Micro a thing or two.

With the Animal, Vegetable, Mineral program, the children can get the computer guessing.

They think of an object. The BBC Micro has to decide what it is.

If it doesn't come up with the answer, the children can keep giving it hints.

In doing so, they are encouraged to question the difference between such things as crocodiles and alligators, or whether oil is vegetable or mineral.

The program also encourages them to consult refer-



ence books on that they can ask the computer increasingly tough questions.

## Questions on Julius Caesar from J. Julius Norwich.

John Julius Norwich's History Quiz is one of the new BBC Micro Grandmaster quiz series which also covers theatre, crime and detection, music, science fiction and royalty.

On the history front, there are 300 brain-testing questions, covering all aspects of British history from Julius Caesar to Margaret Thatcher.

And to increase the educational value, Mr Norwich has posed the questions from angles which will give a broader understanding of events.

## For the full catalogue, clip the coupon.

There are thirty more new BBC Micro programs in Acornsoft's new catalogue.

For a free copy, complete the coupon, or telephone 0933-79400. Or ask your local BBC Micro dealer.

If you've not yet a BBC Micro owner, you can get full details of the computer at the same time.



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```

1-25, Y1=Y2: DEFEND1=00, Y1=Y2: DEFEND
1-25, Y1=Y2: DEFEND1=00, Y1=Y2: DEFEND
24: N2=2, 1: NEXT
500 ENDPROC
530 DEF PROCsw
540 MY=MY+1
550 IF MY=64 THEN PROCend
560 ENDPROC
570 DEF PROCndas
580 X25=RXEX4+2: Y25=RXEX4+2
590 IF X25+Y25=7 OR X25+Y25=11

```

```

THEN 1000 ELSE 500
1000 IF Y25=6 THEN DCL=1
1010 IF Y25=4 THEN DCL=2
1020 IF Y25=3 THEN DCL=3
1030 IF Y25=5 THEN DCL=5
1040 ENDPROC
1050 DEF PROCend
1060 SW=0: LSW=0
1070 FORC=1 TO 8: FORY=1 TO 8
1080 IF B(Y),C(Y)=3 THEN SW=SW+1
1090 IF B(Y),C(Y)=1 THEN WSW=1
1100 NEXT NEXT
1110 IF WSW THEN PRINTTAB 7,2
95: I win by "100-50:" counters."
SPC10:END
1120 IF WSW THEN PRINTTAB 7,2
95: You win by "100-50:" counters."
SPC10:END
1130 PRINTTAB 7,29: " draw." SPC
20

```

```

1140 END
1150 ENDPROC
1160 DEF PROCndas
1170 FORP=2 TO 7
1180 T1=B(P)-1, 1: T2=B(P)+1, 1:
T3=T2+1
1190 IF T3=4 THEN W(P), 1=15
1200 IF T3=1 AND B(P), 1=0 THEN
PROC11=1
1210 IF T3=6 OR T3=2 OR T3=3 TH
EN W(P), 1=100
1220 T1=B(P)-1, 2: T2=B(P)+1, 2:
T3=T2+1
1230 IF T3=6 OR T3=2 OR T3=3 TH
EN W(P), 2=100
1240 IF T3=4 THEN W(P), 2=15
1250 IF T3=1 AND B(P), 2=0 THEN
PROC11=2
1260 T1=B(1), P-1: T2=B(1), P+1:
T3=T2+1
1270 IF T3=6 OR T3=2 OR T3=3 TH
EN W(1), P=100
1280 IF T3=4 THEN W(1), P=15
1290 IF T3=1 AND B(1), P=0 THEN
PROC11=3
1300 T1=B(8), P-1: T2=B(8), P+1:
T3=T2+1
1310 IF T3=6 OR T3=2 OR T3=3 TH
EN W(8), P=100
1320 IF T3=4 THEN W(8), P=15
1330 IF T3=1 AND B(8), P=0 THEN
PROC11=4

```

```

500 ENDPROC
530 DEF PROCmove: MX=15, 1
540 PRINTTAB 7,29: "You want
to move 1st 7? :MS=GET$:MS=CHR$
PROC(MS)OR(32)
550 ENDPROC
560 DEF PROCdss
570 G=0: D(R)=0: P(D(R)): P=0: P1=
0
580 ENDPROC
590 DEF PROCcounters(C, B, R)
600 X1=64: 100=150: B=0: C(B-95: Y1
=0: 100=112: 600, 0, C: Y=1
610 FORC=1 TO 20 STEP4: MOVEN

```





```

1340 NEXT
1350 ENDPROC
1360 REM

```

```

1370 DATA 550,10,50,70,70,50,10
1380 10,10,20,50,50,20,10,10,50
20,100,90,90,100,20,50,70,50,50
0,0,50,50,70,70,50,50,0,0,50,50
70,50,20,100,50,50,100,20,50,10
50,20,50,50,20,10,10,500,10,50,7
0,70,50,10,500

```

```

1390 DATA -1,-1,0,1,1,1,0,-1,0
1,1,1,0,-1,-1,-1
1395 DEF PROCline1
1400 IF B(PN-1,1)=1 THEN S=-1:E
=1 ELSE S=1:E=0
1410 FOR L=PN+5 TO 5 STEP 5
1420 IF B(L,1)=0 THEN W(PN,1)=1
50

```

```

1430 IF B(L,1)=0 AND B(L+5,1)=0
THEN L=2*E+5:GOTO1470
1440 IF B(L,1)=0 OR B(L,1)=1 OR
B(L,1)=-1 THEN W(PN,1)=15
1450 IF B(L,1)=0 THEN L=2*E+5
1460 NEXT
1470 ENDPROC
1480 DEF PROCline2
1490 IF B(PN-1,0)=1 THEN S=-1:E
=1 ELSE S=1:E=0
1500 FOR L=PN+5 TO 5 STEP 5
1510 IF B(L,0)=0 AND B(L+5,0)=0
THEN L=2*E+5:GOTO1550

```

```

1530 IF B(L,0)=0 OR B(L,0)=1 OR
B(L,0)=-1 THEN W(PN,0)=15
1540 IF B(L,0)=0 THEN L=2*E+5
1550 NEXT
1560 ENDPROC
1570 DEF PROCline3
1580 IF B(1,PN-1)=1 THEN S=-1:E
=1 ELSE S=1:E=0
1590 FOR L=PN+5 TO 5 STEP 5
1600 IF B(L,L)=0 THEN W(1,PN)=1
50

```

```

1610 IF B(1,L)=0 AND B(1,L+5)=0
THEN L=2*E+5:GOTO1650
1620 IF B(1,L)=0 OR B(1,L)=1 OR
B(1,L)=-1 THEN W(1,L)=15
1630 IF B(1,L)=0 THEN L=2*E+5
1640 NEXT
1650 ENDPROC
1660 DEF PROCline4
1670 IF B(0,PN-1)=1 THEN S=-1:E
=1 ELSE S=1:E=0
1680 FOR L=PN+5 TO 5 STEP 5
1690 IF B(0,L)=0 THEN W(0,PN)=1
50

```

```

1700 IF B(0,L)=0 AND B(0,L+5)=0
THEN L=2*E+5:GOTO1740
1710 IF B(0,L)=0 OR B(0,L)=1 OR
B(0,L)=-1 THEN W(0,PN)=15
1720 IF B(0,L)=0 THEN L=2*E+5
1730 NEXT
1740 ENDPROC

```



```

1 SCREEN=1
2 L=5
3 H1=-1
4 X1=0:Y1=10
5 REM IN LINES 13,31,37,48 & 5000,X SHOULD BE IN
  INVERSE
6 REM IN LINE 48 & 4928,Y SHOULD BE IN INVERSE
10 GOSUB 10000:GOSUB 30000:H=1
11 GOSUB 5000
12 X1=0:Y1=10:COLOR ASC("B")+PLOT X1,Y1
13 FOR G=0 TO SCREEN-1:COLOR ASC("A")+PLOT G+G,1+G:
  DRAWTO 15-G,1+G:DRAWTO 15-G,23-G
14 DRAWTO 8+G,23-G:DRAWTO 8+G,1+G:NEXT G
15 SETCOLOR 8,8,3:SETCOLOR 1,14,5
16 SETCOLOR 3,8,8
17 SETCOLOR 2,3,4
18 SETCOLOR 4,8,10
19 IF M=1 AND STICK(0)=15 THEN 19
21 GOSUB 500
24 IF AND(010,5C) THEN GOSUB 4000
25 IF AND(003,43) THEN GOSUB 2000
32 REM IN LINE 34, SCORE SHOULD BE IN INVERSE
34 H=0:G=0:POSITION 0,0:PRINT "LIVES "L1:" "
37 SOUND 8,171,18,18:COLOR ASC("A")+PLOT X1,Y1:
  COLOR ASC("B")+18=X1:Y1=Y1+4
38 STOP 2000
40 LOCATE X1,Y1:IF A=ASC("K") OR A=ASC("A") THEN
  GOSUB 5000
41 REM IN LINE 43, LIVES SHOULD BE IN INVERSE
42 POSITION 13,0:PRINT "LIVES "L1:" "
43 IF A=ASC("A") THEN G=0+10:FOR I=1 TO 5:SOUND
  8,8,2,18:NEXT I:FOR I=1 TO 5:
  SOUND 8,18,3,18:NEXT I
45 IF L1 THEN POSITION 3,5:PRINT 80:"GAME OVER!!"
  GOTO 7000
46 PLOT X1,Y1+G:SOUND 8,8,2,8
48 IF 10-SCREEN THEN SCREEN=SCREEN+1:L=L+1:GOTO 11
50 GOTO 33
520 IF STICK(0)=14 THEN ST=1
528 IF STICK(0)=7 THEN ST=3
548 IF STICK(0)=0 THEN ST=5
568 IF STICK(0)=11 THEN ST=7
580 IF ST=1 THEN V=1:G=1:RETURN
600 IF ST=3 THEN H=1:V=2:RETURN
620 IF ST=5 THEN V=1:H=2:RETURN
640 IF ST=7 THEN H=1:V=0:RETURN
7000 J=INT(20+RND(10))
7010 K=INT(20+RND(10))+4
7020 COLOR ASC("A")+PLOT J,K:RETURN
7040 IF XX=0 THEN XX=0
7010 IF XX=15 THEN XX=15
7020 IF YY=0 THEN YY=0
7030 IF YY=23 THEN YY=23
7040 G=0+1
7050 GOTO 45
4000 J=INT(20+RND(10))
4010 K=INT(20+RND(10))+4
4020 COLOR ASC("A")+PLOT J,K:
  RETURN
5000 IF A=ASC("A") THEN L=L-1:G=0+1:
  FOR I=1 TO 100:SOUND 8,255,18,
  10:NEXT I:DOUB 0 8,8,8,8:G=15-40:
  Y1=Y1-4:RETURN
5010 L=L-2:G=0+1
5020 FOR I=15 TO 8 STEP -8,5
5025 SETCOLOR 4,15,1
5030 SOUND 8,255,8,1:NEXT I:SETCOLOR 4,8,18
5035 COLOR ASC("A")+PLOT X1+L,Y1+Y
5040 RETURN
5050 GOTO 5000

```

Briky is a happy little brick-layer. He's never more content than when he's got a wall to build. But there are things that upset him — bombs and moles. Both are capable of destroying his carefully constructed walls. You can help Briky build a better new world by guiding him around the screen. You cannot stop — so you have to be careful not to bump into your own walls. Occasionally these moles and bombs appear at random on the screen. If you build your wall over a mole, you'll get a bonus of 10 points. If you hit a bomb, you'll lose one of your five lives. After every 100 points you get a bonus life and a new screen to play in. But each screen gets smaller — making Briky's life harder. Full instructions are included in the program.

```

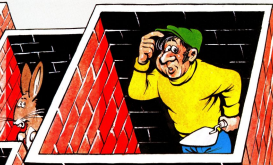
6000 FOR G=0 TO 15:COLOR ASC(1+G):PLOT B+G,B+G:DRAWTO
10-G,B+G:DRAWTO 10-G,20-G
6010 DRAWTO B+G,20-G:DRAWTO B+G,B+G:NEXT G:RETURN
7000 IF G=1 THEN H1=0
7005 FOR I=1 TO 500:NEXT I:GOTO 10000
7010 L=5+G*B:SCREEN=1+G:GOTO 11
10000 REM NEW CHAR SET
10010 REM *****
10015 RESTORE 10020
10020 DIM A(5),A(6+13),A(11),A(15),NAME(10),A(20+13)
10040 H(10)=PEEK(100+10):RTOP=H(10)+4
10060 POKE 100,RTOP:GRAPHICS 1+10:CHARM=PEEK(75)+256
10140 CHARM=RTOP+256+POKE 750,RTOP
10210 FOR N=0 TO 100:POKE CHARM+N,PEEK(CHARM+N):NEXT N
10260 FOR K=1 TO 4:READ R#R=ASC(R#)
10270 IF R<0 THEN R=R+64
10280 IF R<0 THEN IF R<31 THEN R=R+32
10300 FOR I=0 TO 7:READ A(I):A(I)=A(I)+R+0+256-RTOP+
POKE 0:A(NEXT I:NEXT K
10320 DATA 4
10330 DATA 126,126,126-0,231,231,231,0
10335 DATA 0
10340 DATA 126,126,165,129,195,189,129,126
10350 DATA 1
10360 DATA 126,235,215,255,205,231,215,255
10370 DATA 0
10380 DATA 4,0,16,24,126,255,126,24
10390 RETURN
20000 XX=XX+1:YY=YY+1:RETURN
30000 SETCOLOR 0,0,2:SETCOLOR 2,3,4:SETCOLOR 4,0,10:
SETCOLOR 5,14,5:SETCOLOR 5,0,0

```

RUNS ON AN ATARI 400/800 IN 16K

BY GRAHAM WARD

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```

1100 DATA 243.72,0,0,1
1110 DATA 55.000,0,0,1
1120 DATA 121.00,0,0,1
1130 DATA 68.00,00,0,1
1135 REM
1140 DATA 144.47,0,0,1
1150 DATA 68.47,0,00,1
1160 DATA 121.47,0,0,1
1170 DATA 68.00,0,00,1
1175 REM
1180 DATA 162.72,0,0,1
1190 DATA 100.72,0,0,1
1200 DATA 121.72,0,0,0,5
1210 DATA 75.00,00,0,0,5
1220 DATA 72.00,00,0,0,5
1230 DATA 68.00,00,0,0,5
1235 REM
1240 DATA 162.64,0,0,1
1250 DATA 000.53,0,0,1
1260 DATA 100.60,0,0,1
1270 DATA 000.64,0,0,1
1275 REM
1280 DATA 180.72,0,0,1
1290 DATA 000.61,0,0,1
1300 DATA 124.05,0,0,1
1310 DATA 000.61,0,0,1
1315 REM
1320 DATA 217.64,0,0,1
1330 DATA 60.64,00,0,1
1340 DATA 121.72,00,0,1
1350 DATA 100.00,0,0,1
1360 DATA 162.64,0,0,1
1370 DATA 60.64,00,0,1
1380 DATA 120.64,0,0,5
1390 DATA 68.000,0,0,5
1400 DATA 57.000,0,0,5
1410 DATA 55.00,00,0,5
1415 REM
1420 DATA 48.120,0,0,1
1430 DATA 55.00,00,0,1
1440 DATA 68.100,0,0,1
1450 DATA 64.00,00,0,1
1455 REM
1460 DATA 243.72,0,0,1
1470 DATA 000.72,0,0,1

```

```

905 RESTORE 1000
910 TRAP 32100:READ A,B,C,D,E
912 IF E=0.5 THEN D=0.33
915 SOUND 1,0,10,7
917 SOUND 3,C,10,7
918 SOUND 3,D,10,7
920 FOR I=10 TO 2 STEP -(SPEED/E)
925 SOUND 0,A,10,1
930 NEXT I:IF E=1:GOTO 940
1000 DATA 162.64,0,0,1
1010 DATA 61.64,00,0,1
1020 DATA 120.64,0,0,5
1030 DATA 68.000,0,0,5
1040 DATA 57.000,0,0,5
1050 DATA 55.00,0,0,5
1055 REM
1060 DATA 48.120,0,0,1
1070 DATA 55.00,00,0,1
1080 DATA 64.100,0,0,1
1090 DATA 64.00,00,0,1
1095 REM

```



```

1480 DATA 121.00,0,0,1
1490 DATA 68.00,00,0,1
1495 REM
1500 DATA 155.47,0,0,1
1510 DATA 64.47,00,0,1
1520 DATA 100.47,0,0,1
1530 DATA 53.000,0,0,1
1535 REM
1540 DATA 144.57,0,0,1
1550 DATA 000.60,0,0,1
1560 DATA 121.64,0,0,1
1570 DATA 000.72,0,0,1
1575 REM
1580 DATA 217.61,0,0,1
1590 DATA 000.00,0,0,1
1600 DATA 100.64,0,0,1
1610 DATA 000.72,0,0,1
1615 REM
1620 DATA 162.72,0,0,1
1630 DATA 60.72,00,0,1
1640 DATA 60.120,0,0,1
1650 J=INT(20*RAND(0))
2010 N=INT(20*RAND(0))+4
2020 COLOR ABC("03")PLOT J,N:RETURN
3000 IF X=0 THEN Y=0
3010 IF X=15 THEN Y=15
3020 IF Y=6 THEN Y=6
3030 IF Y=25 THEN Y=25
3035 G=0-G

```





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**T**his issue of Computer and Video Games is choc-a-bloc with masses of great games listings — 40 extra full-sized pages — so let's not hang about! Program Extra has two tips for micro-programmers and a new feature, Down to Basics, but let's kick off with a look at David Waterfield's game for the BBC — *Reversi*.

**D**avid Waterfield's game *Reversi* is a very good example of a well-written program, tackling difficult problems with excellent ideas and short snappy programming. This is highlighted by David's approach to solving the problem of drawing up the playing board without having to write a game the length of a novel, using FOR NEXT loops and lots of variables. David has managed to write a really compact little routine to do the job.

**T**his has inspired Program Extra to encourage you to get programming. So we have come up with a short procedure to create a chess or draughts board on the BBC computer. The program can be easily modified to suit your needs. And if you feel like creating a brand new board game of your own it will help too!

**T**his short program for the BBC demonstrates how it's possible, with a good programming style, to write short listings to solve problems that appear to be complex and timecon.

Drawing a chess board is an excellent exercise to attempt, because it involves some tricky problems, but also requires the programmer to structure the routine or else succumb to writing reams of code and end up with a very messy game. The program uses two loops, one to draw each row of squares and the other to draw each column.

The IF... THEN statements are used to decide if a row begins with a black or white square and variables are used throughout to carry the drawing co-ordinates and the colour to be used for filling. Furthermore, the entire routine is held in a defined procedure which can be easily incorporated into any program with ease.

```

100MODE4
200Y=100:Z=150
300A=1:Y=100
400PROCBOARD
500END
600DEFPROCBOARD
700FOR Z=1 TO 8
800FOR Y=1 TO 8
900IF MOD(Z-A) THEN GO TO 1000 ELSE
1000GOTO 1100
1100NEXT YDRAWN.Y+T
1200NEXT ZDRAWN.Z+T,T+T

```

```

1300FOR Y=1 TO 8:T=T+T:Z+T
1400NEXT Y
1500Y=T+T:Z=150
1600IF MOD(Z-1) THEN A=0 ELSE A=1
1700NEXT Z
1800ENDPROC

```

**I**n our last issue, Down to Basics discussed the merits and demerits of Basic and its rivals. This month we'll be taking a closer look at Basic's structure and hopefully get a greater understanding of how it operates. First of all we should take a look at the heart of all computers, the microprocessor.

**T**he microprocessor is the most important chip in a computer. If you've ever seen inside a micro, chances are that the largest chip in there would have been the microprocessor itself. It is also known as the Central Processing Unit, or CPU and this name helps you understand what it does.

The CPU is the chip which controls all the others and which actually does the work when you run your program. It's calculations needs doing, which happens hundreds of times every second, the numbers are brought from the memory chips into the CPU which does the work, and then places the answer back into a memory chip.

Whenever you see something moving across the screen in a game, it is the CPU which is controlling that movement. The way it's done is to put the character you wish to move at a point on the screen. Then, after a very short delay, erase it and put it slightly further along. If you keep doing this fast enough the object will appear to move.

The important thing to realise about the CPU is that, although it can work very fast (it could easily handle many thousands of long multiplications in less than a second), it can only do one thing at a time. So if your computer is playing a game of Pacman, the computer can't move that ghosts around the screen, make the sound effects and check to see what keys you're pressing all at the same time. Programmers get round this problem by making the CPU do each job for a short time in turn. If the program is well written, this should happen fast enough to give the impression that all is happening at once.

**T**hat about winds it up for this issue except to remind you that if you have any problems with the listings in COMPY or just want to learn more about how the games work, drop Program Extra a line to Computer and Video Games, Durrant House, 8 Herbal Hill, London EC1R 5EJ.

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# JAPAN *the land*

Once upon a time, Namco was a rather obscure company which manufactured small fairground video which were placed on the top of department stores to keep the kids happy while their moms were shopping.

The turning point came when Namco bought up Atari Japan Inc. in 1979. Although Atari was the world leader in the video game industry at that time, it did rather badly in Japan due to lack of experience.

Despite some financial difficulties at the outset, Namco went on to do some basic research into the American video games technology.

So it was not until 1977 that their first product, Galaxian, invaded the Japanese arcade. The timing was just right. People were getting fed up with the original Space Invaders and wanted something new.

Galaxian did exceedingly well for their first seller but was still a piece in a hungry software-eaters eye.

While Namco released Pacman, the company's profits rocketed.

The idea of Pacman was devised by one of Namco's software specialists. One day he was so hungry that he imagined himself eating a pizza. This train of thought led him to picture a pizza with a piece cut off, looking as if the bigger portion was trying to eat the smaller one. Then he thought to himself: "Why not make a game about eating?"

From this bright idea, Namco's development team added various ideas such as the ghosts and the power pills and unveiled a little yellow character on the screen.

Contrary to the popular belief Pacman is Japanese, Atari mainly holds the rights to produce the home computer and home video versions.

All in all the game took about 12 months to develop. The name Pacman derives from the Japanese word "paku paku" which describes the movement of the mouth when eating.

The reason for the great commercial success of Pacman — apart from the originality of the game — is attributed to

Japan was the only country in the world which had to meet more sales in order to satisfy the enormous demand created by the arcade boom created by the original Space Invader machines. The company which created these first invader machines made a huge killing while arcade centres and even Space Invader coffee houses sprung up like mushrooms. People queued for hours to play the invaders.

All this led to the creation of more than 200 companies trying to cash in on the very lucrative arcade industry. This is a story of one such pioneer of the arcade video games, Namco. Virtually unknown in this country, Namco is the most exciting arcade company in Japan.

When the Space Invader boom began to wane, the game was quickly followed by the Galaxian. This development of the alien invader theme was an instant success. Galaxian was Namco's very first video game and since then the company have gone from strength to strength, from late losses at the Japanese video boom,

the fact that Namco licensed two American companies to produce Pacman for the U.S. market.

Thanks to Atari, the U.S. market is about five times that of Japan and about 10 times that of Europe.

Namco licensed Midway to produce the coin-operated arcade machines and Atari to sell the home video game versions of Pacman.

Atari splashed out on a national T.V. advertising campaign and soon Pacman became a household word. The sales of the Pacman cartridge can only be described as explosive! Namco earned millions from the royalties.

The reason why Atari used Commod-

ore and others over lawsuits of copyright of Pacman is simple. While Atari paid millions to Namco, Commodore and the rest of the copycats didn't pay a cent.

For the licensing of Pacman didn't stop at the video games. Soon, there was Pacman sports gear and Pacman toys everywhere.

It is said that Namco earned more than three times as much from royalties generated by the Pacman character than from the actual video game! Time magazine commented, in April 1981, that Pacman's income will exceed that of the movie Star Wars!

Apparently, one copyright manufacturer put a Pacman picture on the packaging and the sales took off.

However, all is not well for Namco. In Japan, there are people who pirate arcade games. Although it may appear to be rather difficult to produce "clones" of sophisticated arcade machines, there are a number of technological pirates about in Japan.

Namco has no less than 30 full-time detectives investigating piracy, using sophisticated spying equipment to catch the pirates.

Last year, Namco developed the new highly successful Atari game called Pole Position. The development of Pole Position cost the company well over three quarters of a million pounds and has some of the most convincing graphics 3D effects so far seen on an arcade machine. It incorporated some custom made integrated circuits in order to process the pictures making "clones" using commercially available micro-chips.

It sounds inevitable — but within two months, there were pirated Pole Position available on the black market at half the price of the original.

This time Namco was determined to catch the pirates red handed as they sent out all of their detectives to monitor known secret laboratories and hide outs.

The whole operation came to a dramatic Hollywood style end when they seized a truck believed to be on its way to pick up a consignment of illegally produced Pole Position machines.

They eventually reached a secret factory 1000 miles away from Tokyo and apprehended several pirates and confiscated 30 "clones", retained Top Position. Surely like something out of *The Dukes*, doesn't it?

So how do the pirates make these "clones"? As soon as an original arcade machine is released they get hold of one and disassemble it, obtaining photographs of the printed circuit boards and names of the chips it uses.

The custom-made chips are spaced

# nd of the rising clone



up and analyzed using micro-photographic equipment. Once they work out how the chip works they then produce a clone to do exactly the same thing.

This process is called "reverse technology" and the ironic thing is that much of Japanese industry started off using the technique.

The pirates who analyse the originals are quite skilled, and are sometimes employed working for large computer manufacturers and moonlighting. They are equipped with mainframe computers and electronic equipment costing hundreds of thousands of pounds. They are creating a "clone" as a challenge.

They pass on the information to other pirates whose exclusive function is to set up an overnight factory in a remote part of Japan, and mass produce the "clone". The marketing is handled by other pirates who specialise in this field. The whole operation is master-minded by organized crime syndicates.

They regard arcade piracy as being safer than drug trafficking.

Namco has just released a sequel to Pole Position called Pole Position II. It gives you choice of four racing circuits

and the backgrounds are more detailed than before.

Most arcade players in Japan really go in for convincing backgrounds and in Pole Position II it, there is one circuit which has a multi-level crossing and a fairground with a big wheel and roller-coaster. Also the car crashes in a more realistic fashion. You see the car break up into bits while the wheels bounce away from the track if you are steering enough to go off the road.

Just recently, two companies released laser-disc motor-racing games and it looks as if Namco could have been summarised by them.

Taito's Laser Grand Prix (Oct/83, November) uses Laser vision which provides actual scenes from Fuji Speedway. The visual and sound effects are superb. Taito has a Pole Position-like game with no less than three screens to fill the whole of your field of view!

But one arcade fanatic commented that Namco always comes up with something really original. I think he is right. In 1984 I believe that Namco will release something extraordinary using laser technology.

The current trend in arcade games in Japan are sport simulations. There are now arcade games which feature anything from water-skiing to women's volleyball! It is very likely that there will be a convincing flight simulator game next year.

Another trend is towards micro-computer software. Due to the fact that Sinclair's cheap micros never reached Japan and Atari's absence from Japanese home video game systems market meant that the games software industry for home micros is relatively new in Japan.

Since there is a law in Japan to protect arcade games there is a lack of computer games converted from the arcade favourites. There is an awful lot of illegal stuff about, though!

Sega Enterprises — they made Frogger, Zaxxon and Buck Rogers, Planet of the Apes — have produced their own micro called the Sega 1000 to sell their original arcade games.

Namco too has joined forces with one of the leading software distributors called Dampa. Their first offering was, predictably, Pacman!





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**GAMES MACHINE**



If you want to extend the capabilities of your computer or games machine, there are now lots of bits and pieces which you can plug into the back to make it do things better or faster, or things which it could never do before. Such plug-in goodies include extra memory, better keyboards, joystick interfaces, Micronet adaptor or devices to make the beast speak or play tunes. Robert Schiffron takes a break from Bug Hunting to bring you news of some of the current plastic boxes which you can plug into your micro or games machine. Upgrading your present equipment by using add-ons means that you may not have to buy that new machine after all!

## COMMUNICATIONS

Communications means making your micro talk or listen to other computers in their own language. They communicate either over the airwaves at radio frequencies or over the telephone lines.

Radio has its advantages. Radio communication is only one-way whereas telephone can be both. But long conversations on the phone can be expensive. If you want to read more about this subject, dig out November's issue of C&HO and turn to page 124.

If you want to receive Teletext on your micro, you'll need a BBC model B with a Teletext adaptor. This lets you receive Ceefax and Gaeax, which are information services broadcast by the BBC and by ITV. You just plug your TV aerial into the back of the adaptor, and the computer will do the rest.

The adaptor gives you four channels of teletext information: BBC1, BBC2, ITV and Channel 4. You can find out about such things as what's on TV tonight, the latest world news, sports news and ITV also has a kids corner with jokes and the like. Teletext is like a big electronic newspaper. You can read its pages on your TV but you can't write back to it.

The other method of communication is over the telephone. This is what systems like Micronet 800 use. This way, the computer can send messages and you can also type back.

There are loads of computers which you can dial into and most of them are free except for the price of the phone call. However, these free bulletin boards, as they're called, use an different hand rates (so you intended) to Micronet so unfortunately you can't use a Micronet adaptor to call them.

You can buy a 386 hand modem quite cheaply from various companies, like Maplin Electronics who supply units for the Dragon, Vic-20, Commodore 64, Atari and Spectrum.

I tested the Atari one and managed to dial into some local systems and also used Maplin's own service called Casual which allows you to order stuff from the Maplin catalogue via your computer by typing in your credit card number.

A lot of computer clubs run bulletin boards, and you can dial them up for computing news; you can also send messages to the club by typing at your computer. This is the two-way advantage gained by using the 'phone as opposed to the airwaves.

You can set up your own bulletin board with a Maplin modem, but you'll also need some software.

You will now be able to buy a Micro-Printed type modem for your BBC micro from Arcos which has some better features than the Micronet package. But it's more expensive, and you'll still have to pay a fee to join Micronet if you want to look at their private areas on the database.

You can also buy slightly cheaper modems like the Micro-Mite which will not receive Micronet or other information systems, but will allow you to talk to your friendly computers, providing he or she also has a similar modem.

This way you can send each other programs or messages, but you'll have to phone him up first to tell him to switch his modem on!

The Micronet modems offer this person-to-person facility as well as normal Micronet use, but are slightly more expensive.

## STORAGE DEVICES

When you finally decide that cassette are too slow for your needs, you'll want to look for something faster. The best thing is a real disc drive which for micros will probably use 5.25" discs.

A cheaper alternative is a 5" drive which is available for many micros. You can buy a Nyle Drive 500 5" system from IFL for about £150, and this contains a special cable to link the drive to your micro.

If you have two computers, or decide to change your machine, you just buy a new cable. Blank 5" discs start at about £1.00, but 5" systems use special car-

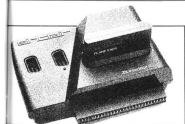
You can now fit two standard Atari-type joysticks to your Spectrum with an interface 2. It plugs into the back of the computer, and also has a slot to take the new Sinclair software cartridges. The BBC (beetle) can now become a Teletext terminal with the new add-on from Arcos. As well as displaying pages of information, it can also store the data in memory and use it in its own programs.



At long last, the microdrive has actually been launched. As expected, demand is still exceeding supply and it will be some time before you can just walk into Smiths and buy one. They're not really disc drives at all, just miniature cassette recorders. You can load a 144 program from a Microdrive in about 10 seconds.



# EXTRA BITS!



The 5.25-inch disk is a 5.25-inch disk from the Spectrum. The small disk is enclosed in rigid plastic and currently costs over £12 each. The drive part is the cable which links the drive to the micro. This contains all the electronics, so if you change drives, you just change the cable but keep the same drive.

tridges which are currently about £5.

The Byte Drive 500 will soon be available for the Dragon, Spectrum and Commodore 64. It is already available for the Cric, BBC and Apple.

If you have a Spectrum, the official Sinclair way of progressing from cassette is the Microdrive. This costs £25 for each drive, but you'll also need an interface which is another £25. You can choose between 85 and 100K on a Microdrive cartridge, and a 10K program will load in about 18 seconds.

Microdrives are fast, but they're not really discs. Inside a microdrive cartridge is a loop of high quality tape, and the drive itself is just a very accurate (supposedly) cassette recorder.

If you've got a BBC then you'll need a disc interface fitted, which costs around £50. IFL has no intention at the moment of producing one, so you'll have to use the BBC one.

## MORE MEMORY

The size of the largest program which you can fit into your machine is governed by the size of the area of memory in which the computer stores it.

The problem is that although memory chips are now quite cheap, some machines still have very little RAM, as it's called. One of the first enhancements which a computer owner will make in such a case is a memory expansion.

The ZX81 although very popular has only 1K of RAM. (1K is about two screenfuls of program.)

It's very easy to expand your ZX81's memory. You can buy a 16K RAM pack which just plugs into the back of the machine and costs around £25. You may have heard of the much-feared contemporary disease known as 'RAM pack rot', caused by Sinclair not putting the edge connector on their RAM pack in the right place.

This disease can be fatal to a program, as a slight wobble at the wrong time can erase a whole afternoon's typing. One cure is a bit of something sticky under the machine, although a less messy solution is to look to a different company. You can also get 64K RAM packs which allow for even more

storage of data and programs.

Upgrades for the 16K Spectrum are available from Sinclair for £40, but you'll have to send your machine back to them, and you know how long that takes, don't you? Alternatively, you can buy a 16K-like RAM pack which sits on the back of the machine, or some companies will chips which you can stick inside, as long as you didn't really want the guarantee anyway.

If you're going to upgrade your Spectrum, check that the company's product will fit your particular machine. There are currently three different versions of the Spectrum in circulation and although they all look the same from the outside, there are some small variations inside which may make a difference.

Expansion for an Atari is easy; the memory comes in sheets of plastic which you install by removing the cover on top of the machine. Newer machines come with 48K but some old 40K's still have only 16K. Your local dealer should be able to tell you how to improve this.

To expand a Texas TI99-4 or 4a you'll need a peripheral expansion box. This takes the form of a large aluminium case about the size of the small fiver compartment in a fridge. (I don't know why, but everyone seems to measure the size of computers in relation to parts of fridges.)

Inside this you can then put disc drives, memory expansions and anything else. Retail price for the box alone was around £50 but that may drop now that the Texas micro is no longer being made.

Memory expansion on a Vic is possible. It is in the form of plug-in cartridges and comes in four flavours, which are 1K, 8K, 16K or 32K.

The annoying thing is that because the cartridge overwrites that part of memory which used to hold the contents of the screen, the screen RAM is moved to a different place.

The problem is that each cartridge puts it somewhere different, so programs written for use with an extra 32K will not necessarily run directly on a 16K machine without minor alterations. This is very inconvenient, especially for magazines who publish program listings.

If you're tired of having to do tedious impressions to play your favourite computer game a joystick interface is called for. This allows machines which normally have no provision for such a pad to have one, and very useful they are too.

The most popular machine, which lacks a joystick interface, is the Spectrum, and there are now quite a few companies who will remedy this situation for you.

The official way is by use of the Sinclair Interface 2. This costs just under £50 — you get 8 channels — and allows two standard Atari-type controllers to be used. You can then write your own games using the joysticks to control the

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The AGF Programmable Joystick Interface is a unique design offering the use of any micro-computer joystick with absolutely all early tapes, software in its entirety on 800K cartridges with the Sinclair Spectrum or ZX81.

The hardware programmable interface is capable of additional software and accurately replicates the keys of the computer in a manner which is equivalent to absolutely ALL key-mapping methods, both BASIC and Machine Code.

The interface does not interfere with key repetition and can therefore be used simultaneously with the keyboard.

There is no need to remove the interface once fitted as the rear extension connector will accommodate four key-pullers. It operates at 0.45mA power rate. This important feature avoids excessive heat to the expansion ports.

The key-mapping principle pioneered by AGF means that your own programs can use eight directional joystick movements by utilizing simple key-mapping BASIC.

Two joystick models are provided which share the same keys, but can work with the majority of two-phase joysticks. Several accessories can be used on the same computer for multiple joystick applications.

The interface is programmed by a two-digit code, which is located on a programming key (supplied, for main direction and firing button). The two numbers are then entered on a pair of leads which are clipped onto appropriately numbered strips on the interface.

Once configured this can be installed on a Quick Reference Programming Card for moving with the game. As the programming is not power dependent the interface retains the last configuration made and can be immediately used when next switched on.



### KEY FEATURES

- Programmable design gives 800K full software support.
- Accepts Atari, Commodore, PIP, Neo, Sinclair, Space Invaders, L.A. Break etc.
- Key extension connector for all other add-ons.
- Free demo program and instructions.

### PACKAGE CONTENTS SUPPLIED

- Programmable Interface Module as described, complete with chip-on-programming leads.
- Self-writing program setting chart detailing how to define which key is simulated by key-maps, LEFT, RIGHT, and FIRE.
- One pack of ten Quick Reference Programming Cards for program setting to your games respectively. The card allows you to mark the configuration in an easy to read fashion with space to record the software title and computer name.
- Video Card! Demonstration program which is so designed to be used to demonstrate how all eight directions and fire can be made. This is also a useful high resolution drawing program.
- 12 months guarantee and full written instructions.

## JOYSTICKS

### CONTROLLERS

FOR USE WITH OUR INTERFACE Module on VIC 20, Commodore 64, Atari VCS, Atari 800, Atari 808

If you require any keys for our original interface module mark order VIDEO keypads

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| SEND C.V.D. AND STAMP NEEDED TO: A.G.F. HARDWARE, DEPT. CVC,       |                               |                                   |       |
| FREEPOST, ROYDON REGIS, WEST SUSSEX, PO22 9BN                      |                               |                                   |       |
| QTY                                                                | ITEM                          | ITEM PRICE                        | TOTAL |
|                                                                    | PROGRAMMABLE INTERFACE        | 33.00                             |       |
|                                                                    | JOYSTICK(S)                   | 7.54                              |       |
|                                                                    | PACK OF QUICK REFERENCE CARDS | 1.00                              |       |
| ONE                                                                | VIDEO GRAPHICS                | FREE                              |       |
| ZX81 <input type="checkbox"/> ZX SPECTRUM <input type="checkbox"/> |                               | Please tick                       |       |
| DEALER RETURNED TO COMPANY                                         |                               | A. G. F. HARDWARES ON APPLICATION |       |
|                                                                    |                               | FINAL TOTAL                       |       |

action, or buy commercial software written for use with the device. Likewise I also allow you to use plain cartridge software, although these retail at £10 a time.

The problem with all the different joystick interfaces is that they use their own systems. Is a program written for use with a Kempston joystick will not run on an interface I unless the program contains a routine for each and you are allowed to select which one you want.

One way round this predicament is to have a programmable joystick interface. Such a beast is the one from A&P. This comes with a grid of small holes and a set of five wires.

The wires are labelled with the functions of the joystick (up, down, left, right and fire) and the holes are labelled with the keys on a Spectrum keyboard. If the game which you want to play uses the 'F' key to fire, then you plug the 'FIRE' lead into the 'F' hole and so on. Such a device is very useful.

## BITTER AFFAIRS

When you finally tire of the pinch of dead flesh known as your Spectrum's keyboard, there are a number of better ones around. The best are quite expensive at around £40 but they allow the whole machine to fit inside and look rather smart. One of the more popular around is made by Pulley. Kempston is also about to launch a high quality keyboard for the Spectrum, as demonstrated recently at the ZX Microfair.

You'll also find replacements for the touch-sensitive keyboard of the Atari 400 from about £30.

If you have an Atari VCS and feel like getting into computers, you can now buy an add-on keyboard from Vulcan Electronics, which is made by Spectronics. It sits on top of the VCS and plugs into the joystick ports and the main cartridge slot and you can then program your VCS in Basic. It costs £30.

Mattel Intellivision owners can also do the same to their machine. Mattel offers a similar device, as well as a music keyboard to enable you to compose music on your machine. I don't reckon Bach would think much of it, but it's not bad.



## SOUNDS AND SPEECH

If you also of a good evening is being locked in a quiet room with a micro, then you would always get more friendly with it by talking to it or having it talk to you. But before those nice little man in white coats come to take you away, let me explain.

If you have a Pet, Vic, 64, Spectrum, ZX81 or BBC and need someone to talk to you then you could always try a Characterbox. This costs £45 from Williams Smart systems and you can program it to say anything you like. From the same company comes Big Ears which, for another £45, reverses the process and allows you to speak to your computer.

Tap the word through the microphone a few times, and the machine will then remember it. If you then say it again, it should recognise what you're saying.

If it's a Spectrum you've got then the Corbis microphone is another possibility besides a Characterbox. It works on the same system and sells for under £30.

BBC owners can also choose the official Acorn speech system, which is a computerised version of Kenneth Kendall. Personally I can just about recognise him, but many say that it might just as well be Missa Mart. (In fact, I wish it was.)

If you prefer noise to plain speech then there are a couple of units available to improve the sound of a Spectrum by providing it with the same sound chip as the BBC and Cric.

## WHAT'S LEFT OVER

Finally, we come to the rest of the additions which space did not allow separate headings for.

If you own an Aquarius, then this year should see the introduction of the home controller unit. This plugs into the machine and allows you to control household appliances by using special plugs which go into the wall and receive messages from the computer. Such a system is also planned for the Electron.

If you have an Atari VCS then you may already know about the super-expander. This lets you load games from cassette, and also improves the quality of the graphics slightly.



Printerface is a mixture of interface and printer and is a device to let you link a printer to a micro. DADS office systems supplies an IEEE cartridge to allow a Vic or 64 to connect to any Commodore printer (or disc drive for that matter.)

The Spectrum will only work with a ZX printer, but you can use the RS232 connection on an interface I to link a large range of printers. If you have a Character-type printer then Kempston will supply you with a suitable interface for a Spectrum.

If you own a computer other than a Sinclair machine but would be perfectly happy to use a cheap (£45) Sinclair printer, you can get a suitable interface for many popular micros, including the BBC, Dragon and Vic, from Microtron Computer Systems of London.

## LIGHT SENSORS

Another way of controlling a game is with a light sensing device. Usually mounted in a gun-like barrel (and, therefore, called a light gun) these allow you to draw patterns on the screen as though it were a piece of paper.

Recently launched is the Light Rifle from Shack Systems of Basingstoke, Hants. It comes with three demo games where you have to shoot at targets on screen, but like those old TV game machines, but these games are better as they rely on all the facilities of the micro. You can also write your own shooting-type programs. The light rifle costs just under £30 and versions are available for the Spectrum, Vic and 64.

EXTRA  
BITS!

# C & VG SOFTWARE FORM

Have you written a games program which you feel is just right for C&VG? If so we have come up with a form to ensure that we can test it out and give you our views on it, as quickly as possible.

We would prefer a tape and listing but can work from just a tape and will return it to you if it doesn't find its way into the magazine. We will also need an additional sheet explaining the game and its theme, and any documentation like lists of variables or how certain routines are working, would be of great help to beginners. Please make sure that your name, address and the program name is on everything

you send us, including the cassette itself.

This form will merely help us to keep a check on your game as it goes through our testing process and make sure we have all the information we need to present it properly in the magazine.

If you don't want to cut up the magazine, we will accept photographs or close copies of this page. This form will be appearing regularly in C&VG issues from now on.

Remember we pay £18 for each listing published and you could win our Programmer of the Year Contest where we will try to turn the winner into a best-selling games author.

Program name: .....

Machine name: ..... Model: .....

Other models it should run on: ..... Number of K needed to run it: .....

Other equipment (joysticks, Extended Basic, add ons, etc.) needed to run it: .....

Author's Christian name: ..... Sur-name: .....

Address: .....

.....

Tel: ..... Date: .....

Type of game: (If original placed only too) .....

Loading instructions: .....

Game instructions: (If not included in the listing) .....

.....

.....

Office use only

Date received: .....

Acknowledgement sent: ☐ Evaluator's comments

Name of evaluator: ..... Good enough to publish ☐

Date sent out: ..... Needs some tidying up ☐

Date due back: ..... Not worth publishing ☐

Needs to be returned to author for alterations: ☐ Date sent: ..... Same game already published on this micro ☐

Due to be published in issue of magazine. ....

.....



# GRAPHICS

By Garry Marshall

## MAKING THE MOST OF YOUR 64

Over the next five issues, I shall be looking at the graphics capabilities of the Commodore 64. This new computer has very impressive graphics facilities, which I'll be helping you make the most of.

I'll begin by looking at the way that user-defined characters are created. In fact, the entire keyboard is "soft" in the sense that it is possible to redefine the character that is associated with every key.

This is possible because the Commodore 64 really does have 4K of random-access memory. All the ROM, including the Basic ROM, the operating system ROM and the character generation ROM, is covered by RAM, so that ROMs can be switched on and the range of characters that they provide supplied instead by RAM.

Because of this, the characters that are stored in the character generator and printed from the keyboard can be copied from the character generator ROM into RAM so that all the characters are available when this ROM is disabled.

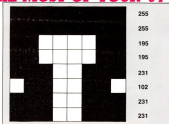
Then we can change the characters associated with any key as we wish. To write the program to do this, all we need to know is the addresses of the registers that control the operations involved.

The characters themselves are based on an 8x8 dot matrix. Each dot can be on or off, and the resulting character is defined by using a 1 for a dot that is on and a 0 for a dot that is off. Then each row of the character is represented by the decimal equivalent of the binary number for the whole row. This is illustrated in figure 1.

In this way, we could design a completely new style for each letter of the alphabet or a set of graphics characters for a particular application.

The program I shall give allows the character in the illustration to be assigned to the key associated with any letter of the alphabet so that, when that key is pressed, it gives this character rather than the letter.

The program starts by setting the contents of location \$D010 to make the video chip take character descriptions from the area of RAM



for the  
**COMMODORE 64**



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# CHART TOPPERS

| SPECTRUM     |                                       | ZX 81     |                                         | VIC-20 |                                          | ATARI 400/800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                   |
|--------------|---------------------------------------|-----------|-----------------------------------------|--------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| 1            | ATAC ATAC<br>(Ultimate)               | 1         | KRAZY KONG<br>(Pog)                     | 1      | WIZARD AND PRINCESS<br>(Melbourne House) | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | POLE POSITION<br>(Atari)          |
| 2            | LUNAR JETMAN<br>(Ultimate)            | 2         | 3D MONSTER MAZE<br>(New Generation)     | 2      | CRAZY KONG<br>(Interceptor)              | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | DONKEY KONG<br>(Atari)            |
| 3            | ANT ATTACK<br>(Cinclair)              | 3         | FLIGHT SIMULATION<br>(Pole)             | 3      | ARCADIA<br>(Imagine)                     | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | DIAMONDS<br>(English Software)    |
| 4            | MANIC MINER<br>(Bug Byte)             | 4         | FOOTBALL MANAGER<br>(Addictive Games)   | 4      | WACKY WAITERS<br>(Imagine)               | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ZOOCON<br>(Datasoft)              |
| 5            | CHECKERD FLAG<br>(Pole)               | 5         | 3D GRAND PRIX<br>(Artic)                | 5      | GRIDRUNNER<br>(Lamasoft)                 | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ONE DUC<br>(Atari)                |
| 6            | BALHALLA<br>(Microsoft)               | 6         | MAZE DEATH RACE<br>(PSS)                | 6      | SKYHAWK<br>(Cinclair)                    | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | COMPUTER WAR GAMES<br>(Thorn EMI) |
| 7            | COOKE<br>(Ultimate)                   | 7         | HAND GLIDER<br>(Spectrum)               | 7      | MATRIX<br>(Lamasoft)                     | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | SUSPENDED<br>(Infocon)            |
| 8            | IZOOM<br>(Imagine)                    | 8         | ZX CHESS<br>(Artic)                     | 8      | SARGON II<br>(Chess)                     | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | PORT APOCALYPSE<br>(Synapse)      |
| 9            | TRANS AM<br>(Ultimate)                | 9         | SEA WAR<br>(Panda)                      | 9      | BOWTIED<br>(Imagine)                     | 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | MECHMANAGER<br>(Synapse)          |
| 10           | SCRABBLE<br>(Pole)                    | 10        | PROTECTOR<br>(Sleight)                  | 10     | BOFF<br>(Commodore)                      | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | LEBBIT<br>(Imagine)               |
| COMMODORE 64 |                                       | DRAGON 32 |                                         | BBC B  |                                          | <p>Welcome to our revamped Charts page. The page which tells you just what games are the tops among games players everywhere. This issue we introduce three new computers, the Dragon, Commodore 64 and BBC B, to our chart readers.</p> <p>We realise that these charts give you, the games player, a true reflection of the best value for money games around — and like our Hall of Fame — we hope they give games players a guide to what's best to buy from among the growing shelves of software in your local computer shop.</p> <p>The Hobbit, just converted for the BBC, and the Commodore 64, has gone in at number one on both machines. Diamonds, from English Software, is the first home-produced game for the Atari to make any impression on our charts. It's at number three already.</p> <p>For the first time ever, one company dominates the Spectrum charts with games at numbers one and two. The company is Ultimate and the games are Atac Atac and Lunar Jetman.</p> <p>There's lots of great games bubbling under the charts too. Watch this space for further information!</p> |                                   |
| 1            | THE HOBBIT<br>(Melbourne House)       | 1         | PETTERGROW'S DIARY<br>(Shards Software) | 1      | THE HOBBIT<br>(Melbourne House)          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |
| 2            | RADAR RAT RACE<br>(Commodore)         | 2         | MINED OUT!<br>(Cinclair)                | 2      | MISSILE CONTROL<br>(Gentle)              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |
| 3            | ARCADIA<br>(Imagine)                  | 3         | THE KING<br>(Microdeal)                 | 3      | SALOON SALLY<br>(Pole)                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |
| 4            | CRAZY KONG<br>(Interceptor)           | 4         | TALKING ANDROID ATTACK<br>(Microdeal)   | 4      | MR MEN<br>(Mirrorsoft)                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |
| 5            | PURPLE TURTLES<br>(Cinclair)          | 5         | CUTHBERT GOES WALKABOUT<br>(Microdeal)  | 5      | SHOCKER<br>(Wilson)                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |
| 6            | AQUAPLANE<br>(Cinclair)               | 6         | GRIDRUNNER<br>(Salamander)              | 6      | SNAPPER<br>(Acornsoft)                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |
| 7            | 3 DEEP SPACE<br>(Pole)                | 7         | FROGGER<br>(Microdeal)                  | 7      | PHILOSOPHERS QUEST<br>(Acornsoft)        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |
| 8            | METABOLACTIC LLAMAS<br>(Lamasoft)     | 8         | NIGHT FLIGHT<br>(Microdeal)             | 8      | HUNCHBACK<br>(Ocean)                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |
| 9            | SUPER BEEFIGHT<br>(Terminal Software) | 9         | CUTHBERT IN THE JUNGLE<br>(Microdeal)   | 9      | 700 SIMULATOR<br>(Salamander)            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |
| 10           | CAESAR THE CAT<br>(Microsoft)         | 10        | LOST IN SPACE<br>(Salamander)           | 10     | KILLER GORILLA<br>(Microgamer)           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |



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The figure consists of two side-by-side line graphs, labeled (a) and (b). Both graphs plot the percentage of respondents (Y-axis, 0 to 100) against the level of agreement (X-axis: Strongly disagree, Disagree, Agree, Strongly agree). Graph (a) represents the 'Control' group, and graph (b) represents the 'Treatment' group. In both graphs, the 'Agree' category shows the highest percentage of respondents, followed by 'Strongly agree'. The 'Disagree' and 'Strongly disagree' categories show lower percentages. The lines for both groups are very close, indicating similar levels of agreement between the control and treatment groups.

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The following information is provided for the purpose of providing a general overview of the information contained in the report. It is not intended to be a substitute for the full report.



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(1) **General**—The following information is required for all applications:



**Abstract**

[illegible]

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| 1995-1999 | 16.7 | 16.7 | 16.7 |
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| 2005-2009 | 16.7 | 16.7 | 16.7 |
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1. **Identify the problem.**  
 2. **Define the problem.**  
 3. **Identify the causes.**  
 4. **Identify the effects.**  
 5. **Identify the stakeholders.**  
 6. **Identify the resources.**  
 7. **Identify the constraints.**  
 8. **Identify the risks.**  
 9. **Identify the opportunities.**  
 10. **Identify the solutions.**

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1. *Journal of the American Medical Association*, 2000; 283: 2686-2692.

# N · E · X · T · M · O · N · T · H · N · E · X · T

## WELL, JUST WHAT IS A MANDROID . . . ?

I spy with my little eye something beginning with C&VG! Yes, it's next month's reader-friendly magazine all ready to launch the post-Christmas blues.

And here we got some surprises in store! Come with us on a trip into the murky world of international espionage, agents, double agents, triple agents and even quadruple agents — if we can learn to spell it in time.

Watch out for the frost comes with a James Bond touch — and the special free gift. We're not telling you just what the gift is yet — who knows the KGB might be listening in, or the CIA might have this typewriter tapped.

The man behind the Seventh Empire and our amazing 3D programs, Mike Sigafos, has come up with another winner. A computer-modulated board game!

Mike will be explaining the program — and C&VG will be bringing you the world — well a map of a swamp — or you can muster your intelligence forces and lead your evil opponents. A big full-color map! Board will be found splashed across the center of our next issue and there will also be a computer overlay to help you play the game — plus that special secret free gift!

Demand for this special issue is bound to be high — so why not place an advance order with your newsagent now — but beware: he might be a Masterkey!

### THE PROGRAMS

Have we got some great games for you next month? Yes! For Spectrum owners we deliver into the magic of 3D graphics once again — but you won't need the special glasses this time! It's a 3D maze game written by Henry Wright for the 48K Spectrum.

For the Commodore 64 we've got a graphic adventure-style game called *Cyber Crystal*. Go on a quest for the lost crystal in this multi-screen game.

These others can catch up with the Spectrum owner with our arcade-style all action shoot 'em called *Alacrida*. There's more machine action for Vici owners in *Minifield*. Or in the desert lurks a tank commander blasting away at enemy planes and tanks — could it be you?

We take Axis evil warriors back to modern times with *Wall Defence*. Can you protect your nation from friendly enemies?

Go for gold on the Dragon 32 in *Gold Prospector*. Climb a building to reach the gold — but watch out for acid baths and bottomless pits.

Sharp weapons who like to take a gamble will enjoy *Six Machine* — an accurate representation of those money grabbing one armed hands — but this one will only cost you the price of this magazine.

There will be other listings too —

lost sleep from a

So it looks like the new *Seventh Empire* graphics have pulled out all the stops to get their Client into the Empire in its dying stages. But now assured Empire breaks, we will resurrect the office Pot in time for the next issue when we WILL announce the overall winner of this incredible contest.

Anyway, for now we'll just have to gravel and splashage for the Pot. Now where did I put that baseball bat. It'll give a Christmas spirit. . .

This here's my newsagent



but we're keeping these secrets. So don't forget to rush out to your newsagent on February 15th and grab a copy of *Computer and Video Games*!

### THE EMPIRE

As you may have already guessed the *Seventh Empire* is missing from the pages of this issue. What's the excuse this time?

Well, it's like this you see. There we were, happily leading our office Pot the Empire instructions for the final move, when all of a sudden it says "Look, everyone else is having a good time getting ready for Christmas and you are expecting me to process all this Empire business! I've got relatives too, you know. And I've got to get a present for my little Vic 20. With that, his screen went blank and we couldn't save more the small-

Ma's my newspaper are real close. His sister's kid is Fred or something. . . Anyway we got an arrangement. Every month, you know what he does? He looks out my copy of *Computer & Video Games* and keeps it, just for me.

So none of the other points on the street can get hold of my copy. And that's important to me. Maybe it's important to you too. So go on! we got newspaper with that screen before all filled out. It has the Harry text, you'll games like him.

To my newsagent: Please deliver to me a copy of *Computer and Video Games* every month from 15p.

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