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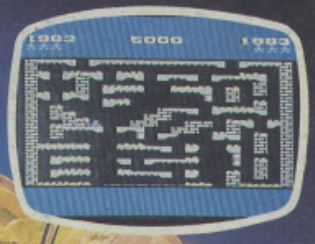

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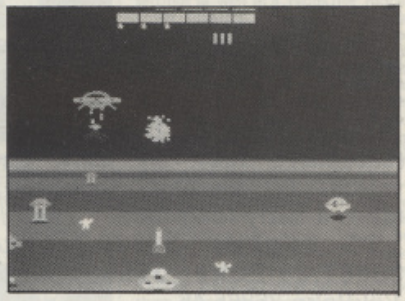

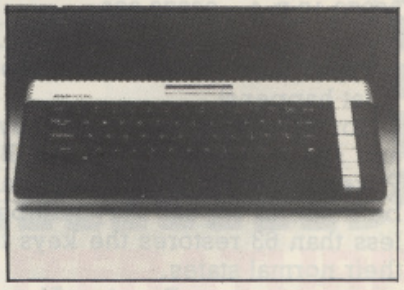

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Readers Letters

Pit Tips

Dear Ed.

Here are a few useful hints and tips for the excellent Activision Pitfall game for the VCS. At the start of the game go to the left side of the screen; this will help you. If you fall down a tar-pit, or turn into the fire or cobra you will come out in front of the obstacles. Also, if you go the other way (to the right) you run against the rolling logs. By going to the left you run with the logs. When you come to the crocodile you must make Harry jump on to the backs of the crocs' heads and when the heads close you must jump on to the next crocodile and so on.

Philip Deacon (13)
Birstall,
Leicester

Vic Trick

Dear Ed,

So you thought you couldn't get Hi-Res graphics on the Vic without buying a crtridge? Wrong. Type in this program, (carefully), then sit back and watch. Be warned, though, it takes a fairly long time.

```
10 Poke 36879,8:Poke 36867,24:Poke 36866,16 or 128:Poke 36865,46
20Poke 36864,18:Poke 36869,240 or 13: Poke 56,33
30 For A = 0 to 255:Poke 7680 + A,A:Poke 38400 + A,5:Next: For A = 5120 To 7168:Poke A,0: Next
40 For H = 5 To 1 Step -1: For A = 0 To 13 Step 3: B = Cos(A) *25 + 64:C=Sin(A)*9*H+50
50B% = B/8;C%=C/8;D=B%+C% *16+ 7680;E=Peek(D)
60 F=5120+E*8+(C and 7):Poke F,Peek (F) or (2 (7-(B and 7)))
70 Next A,H:Poke 36878,15:Poke 36876,230:
```

Type in "SYS64802 and see what happens!

Normally only the cursor keys and space repeat on the Vic. By Pokeing 650,255 all the keys can be made to repeat. Any number less than 63 restores the keys to their normal states.

Royston Almey
Earl-Strutton

The Count Countered

Dear Ed,

I wonder if any readers are interested in some hints and tips I've written for the Atari 400/800 dventure game *'The Count'?* If you have trouble with the flagpole and it keeps on breaking then try this: tie the sheet to the bed and then throw the end out of the window.

If you keep on getting robbed try and get to the sleep store, you'll find that the wooden stakes and cigarettes in the room have a century's worth of dust in them. If you have trouble with the oven, go back at night and then say "go oven''. The oven's solar powered. If you can't find the oven, try smoking in the room with the sign saying "Strictly No Smoking - signed Count Dracula"; this will make the coffin appear. If you can't get the coffin open at night, go back to day time and use the thing that you found in the oven to break the moving bolt, so that Dracula cannot lock the coffin. By doing this you can open the coffin when you like and then you can kill Dracula with the stake. Once you have killed Dracula you are then carried off by the angry mob who have since turned friendly.

Gary Knight
Middleton Cheney
Oxfordshire

Broken Star

Dear Ed,

I know this is going back a bit, but I have an old video game called *Starchess.* It plays only one game, a kind of intergalactic version of chess. Unfortunately it has become faulty and I'm wondering if you know the whereabouts of the manufacturer so I can get it repaired. Every repair shop I've taken it to reckons it's had it. Any ideas?

Anthea Garland
S. Manchester

Starchess was manufactured by a company called Videomaster who have since been taken over by Waddingtons, the games company. *Starchess,* which was a revolutionary game in its day, is sadly no longer available; nor is it likely that you'll be able to get it repaired as it used a number of custom-designed chips - sorry. *Ed.*

Missing Sphinx

Dear Ed,

I have recently been given the *Riddle of the Sphinx* cartridges for the VCS, but there are no instructions supplied with the cartridge. I've managed to work most of it out for myself, but there are a couple of things I'm still not clear about:

1. What are the figures that appear on the screen when the colour/Black-White switch is put into the Black-White position?
2. What are the four treasures and what are they good for?

This is an excellent game and I'm sure that if I had the book I would get even more enjoyment out of it. Any advice guys?

David Jessup
Islington,
London

I'm surprised you've got as far as you have without the instructions, you need to know what you're doing! However, to answer your questions: the Colour/Black-White switch turns the wound and thirst scores on and off. The four treasures are as follows - the eliptical object is the disc of Ra and it heals wounds; the goblet is self-explanatory - it quenches thirst; the necklace shields the prince from rocks and scorpions; and finally, the Sceptre can be used as a chariot, speeding the prince on his way. If you write to the importers of Imagic carts - Adam Leisure -we're sure they'll be only too happy to oblige with a new instruction booklet. They can be contacted at Ripon Way, Ripon Road, Harrogate, N. Yorks. Good Luck - *Ed.*

If you've got something to say about the video and computer games scene, or, if there's something you want to comment on the magazine they why not write to us. The address to send all correspondence is: Winning At Video & Computer Games, AIM Publications, 31/35Beak Street, London W1R 3LD. ●

ATARI VCS OWNERS

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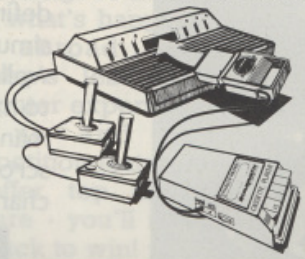
a Supercharger game by Starpath

WHAT IS THE SUPERCHARGER?

The Supercharger plugs directly into the cartridge slot of your Atari VCS to increase its game playing power. With special digital electronics, it multiplies the VCS RAM memory by 49 times, from 128 to 6272 bytes. The Supercharger is unique, in that it can accept programs that have been recorded on standard audio cassette tapes. These are easier and less expensive to develop and market than plug-in cartridges and cost considerably less! The Supercharger is supplied with a standard cable and jack plug which will plug into the earphone socket of any domestic cassette tape recorder. Supercharger lets you play games with high resolution graphics, faster action, and far more complexity. With the extra memory provided by the Supercharger you will now be able to play superior games which could not normally run on an unadapted Atari VCS because of its memory limitations.

MULTI LOAD GAMES - For added complexity and depth

Cassette tape allows Starpath to offer unique Multi Load games. Games like Dragonstomper and Escape from the Mindmaster include several 'loads' on one cassette. When you have finished the first part of a game, you can then load another program giving a different screen or type of game play, thus continuing the game in several distinct parts. This feature is particularly useful in adventure type games. Multi Load games offer complexity and depth that no conventional ROM cartridge game can currently compete with.



FREE CASSETTE - Phaser Patrol (Two screen game)

The Supercharger comes with a highly acclaimed and award winning Phaser Patrol game, and costs only £19.00 including VAT. Descriptions of all the games are given below. For further details, complete & return the coupon below.

£19

PHASER PATROL (FREE!)

Phaser Patrol is a single load game which is FREE with the Supercharger unit. A space game, it has two screens, one featuring the intergalactic battlefield, (below left), and the other showing a Sector Map (below right). The game begins when the devious 'Dracons' launch a surprise attack and you belong to the force which must prevent them from reaching earth. The sector map enables you to warp-hop from one sector to another and it also tells you in what areas the Dracon ships are, so you will need to refer to it before you go into battle. As well as telling you the location of the Dracons, the map shows you where your starbases are, these can bail you out if you get into any trouble. When you have decided on which sector of Dracons to attack, you can go on to the second screen, the battlefield. On this screen you have a view of the vast galaxy ahead and a control panel to keep you informed of your position. A one player game, Phaser Patrol is a highly detailed action packed cassette.

MUTANTS FROM SPACE

Single Load action from Starpath, just as soon as you begin this game you will be under attack. Your task is to vapourize the mutant warriors before they overrun your home planet. Up to four can play and the screen keeps track of the highest score. As well as having nine difficulty levels and two speeds, Communist Mutants from Space (it's full title), has got several features which make it an exciting game cassette providing a variety of options. The real skill in this game however, is winning without using the special features that it offers you!

Price: £8.65 + VAT = £9.95

FIREBALL

You are a juggler, and able to juggle anything from china plates to daggers! Your task in this Single Load game is to smash wall after wall of blocks as you juggle with red hot FIREBALLS! When the ball comes down from the top of your screen, catch it, and then release it back at the wall of blocks. You can score up to a million points! And, if you get to proficient at one pattern of blocks, there are another four to choose from! Up to 4 players can take part in this game and up to 6 fireballs can appear on the screen at once. Be sure you don't get burned!

Price: £8.65 + VAT = £9.95

KILLER SATELLITES

You are the only test pilot of the one rocket ship that can protect the earth from an alien attack of molten metal. The invasion has started, have you the courage and skill to save mankind? A Single Load game, Killer Satellites is for 1 player featuring 2 difficulty settings as well as a 'rapid fire' mode. Other features include: a fuel level indicator; a laser overheat monitor which indicates the temperature of your gun; a global radar scanner and an energy barrier, which can be used to protect you from some of the alien projectiles . . . . but not all of them!

Price: £8.65 + VAT = £9.95

SUICIDE MISSION

Your mission in this game is to shrink down, smaller than a speck of dust, to do battle with a deadly killer virus deep within a human body. Equipped with a microscopic submarine, head for an infection, perilously close to the heart, and towards a fight where you are heavily outnumbered. This is arterial warfare at it's finest. Fire at one of the many germs, and it divides into two. Fire again and the numbers increase once more. A 1 or 2 player game featuring protective shields and two different shooting styles, Suicide Mission has three difficulty options.

Price: £8.65 + VAT = £9.95

DRAGONSTOMPER

Dragonstomper is one of Starpath's Multi-Load cassettes. An adventure game, you've been swept through a time tunnel, right back to the age of warlocks and wizardry. Your mission is to find the Amulet of the Druids. There are clues, but not all easy ones. There are peaceful lakes and forests as well as deadly perils and lurking somewhere is a very vengeful dragon. There are many rewards along the way, but few will reach the final goal. The MULTI LOAD feature gives you THREE seperate game segments, for longer, more challenging game play.

Price: £8.65 + VAT = £9.95

ESCAPE/MINDMASTER

A Multi-Load cassette, your task in this game is to escape from the alien Mindmaster's laboratory, where he has held you as a specimen for study. To win your freedom, you must pass through six 3-D mazes, with each of them being more complex than the last. The first 5 mazes have problems to solve and some surprise intelligence tests. The sixth maze is something special! As this game is too complex to load into your Atari at one time, it loads in FOUR different sections, a feature of the extra play power of the Starpath MULTI LOAD cassettes.

Price: £8.65 + VAT = £9.95

VIDEO GAME CLUB

In a fast moving market like video games, it is difficult to keep up to date with all the developments that take place. With new programmes and accessories being introduced at a fast rate by several different manufacturers, it is impossible to get all the information you require from one manufacturer alone. It is for this reason, that we have set up owners clubs for the more popular video games and home computers, to keep you fully up to date with what is going on with your particular machine. As far as we know, Silica Shop are the only company to offer such clubs, but that is not surprising since we are the specialists. We currently have **FREE** clubs for the **Atari VCS, Atari 400/800** home computers, and **Mattel Intellivision.** Soon we will have clubs for **Colecovision, Aquarius** and **Vectrex.** So if you own one of these machines, fill in the coupon opposite, and we will enrol you **FREE OF CHARGE** in the club relevant to your computer or video game.

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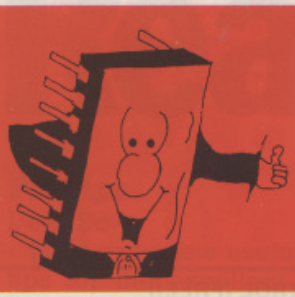
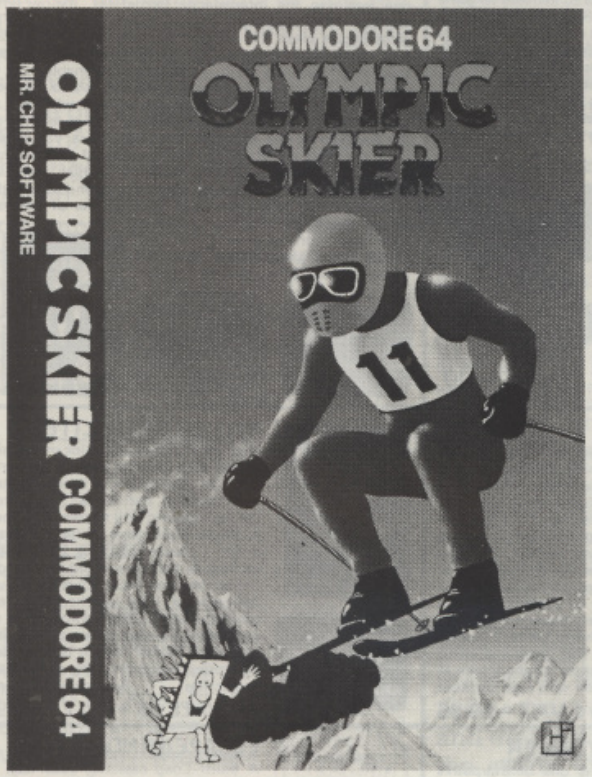


Mr. Chip
SOFTWARE

NEW For the Commodore 64



OLYMPIC SKIER

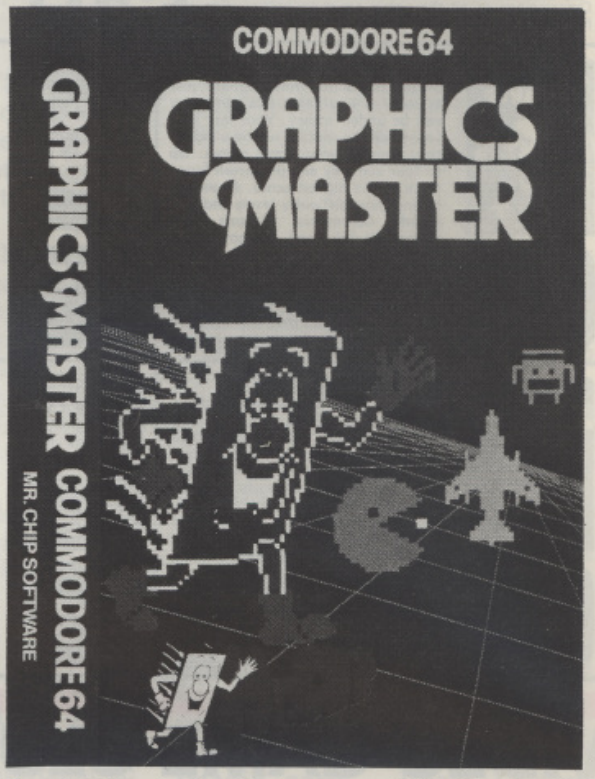
Thrill to the excitement of your own winter olympics with this great new game from the author of JACKPOT. Infact this program contains not one game but three. Manoeuvre through the gates on the SLALOM. Press your man to the limit on the SKI-JUMP and speed down the DOWNHILL course jumping and avoiding the obstacles in your way. 100% machine code, joystick or keyboard control. **£5.99.**

All our CBM 64 programs are available on disk. Please allow £2.00 extra.

NEW For the Commodore 64

GRAPHICS MASTER

Allows the user to define multi-colour graphics on the Commodore 64. The program allows both user defined characters and sprites to be made simultaneously and then saved to tape or disk. As well as offering the usual edit commands, common to many programs. GRAPHICS MASTER contains many unique commands including character scrolling, inverting and even the ability to rotate characters. Full user instructions provided. **£7.50**



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Welcome to the new-look 'Winning At Video And Computer Games', we hope you approve of the changes. The new style will, hopefully, allow us to include even more reviews, news, tests, features and software listings but, more importantly it will allow us more space for your programs and letters. This is your magazine and gives you the chance to pass on your experiences to other readers. If you've written a games program, found a way to beat someone else's or just want to challenge other readers to beat your highest score, then tell us about it.

You will notice that the news coverage has increased too, it had to there's so much happening! To keep you in touch with what's happening, at home and abroad, some of the country's leading games and computer experts will be writing for us and our regular competition feature will continue to offer top class prizes but beware - you'll need more than just luck to win!

'Winning At Video And Computer Games' is the magazine that you need to read if you're going to stay on top. Make it a habit and remember, we want to hear from you so get writing.

Screen Gems

Unless your local friendly software dealer will, let you play with the games on show there's no real way of telling whether or not the lavishly illustrated cassette card bears any relationship to the contents of the game or not. All too often the sales blurb disguises the fact that a game may be just another tired variation of an old game, or worse.

Now there's a way to actually see what the game is all about in an interesting 30 minute video hosted by ex-Tiswas star Chris Tarrant. The video is enticingly titled *'The World's Greatest Computer Games'* — that's certainly open to debate, but the twenty or so games featured do include a fair cross-section of what's currently available, and the amiable Mr. Tarrant does a creditable job of presenting each game, punctuated by occasional asides to look at hardware.

Naturally the Spectrum features heavily throughout the programme but a number of other machines do make an appearance for the sake of balance. The video has been professionally produced and the results do not betray the fact that it was assembled rather hurriedly.

If all goes well with the first issue then follow-ups will be made at regular intervals. In the meantime the producers are working on a similar venture aimed at explaining the intricacies of business software, and this will be followed with another video devoted to educational software.

The *World's Greatest Computer Games* is expected to be available by the time you read this, and should be lurking in your local video and electronic shop either for sale or rental. In case of difficulty, or if you want more information, *contact TV Choice at 38 Mount Pleasant, London WC1X 0AP or give them a tinkle on 01-278 5323.*

Gambling With Chips

Mr Chip Software seems to have cornered the gambling games market this month with their new five-game line-up. The new releases include a superior version of Pacman; a triple card game; a one-armed bandit simulation; an arcade shooting gallery and the biggest gamble of all — a General Election simulation.

The Pacman game — called *Pacmania* is designed to run on the Commodore VIC20. This 12 level version of the old favourite has the genial gobbler running around a standard maze (with invisible walls if desired) under keybard control. There is no joystick option for this program, although the control keys are user-definable.

Kwazy Kwacks is a VIC 20 version of the popular 'carnival' game, featuring a shooting gallery full of ducks and rabbits. A limited supply of bullets along with rogue bullet-eating flying ducks add to the fun. The game is playable with keyboard or joystick control and features a neat hi-res double-height display which is a real bonus. Another plus point is the switchable sound effects: the caps lock key kills the sound effects completely.

Mr Chips one armed bandit simulation, *Jackpot,* has already been getting excellent reviews and it has to be one of the best fruit machine games yet. The game features a four reel fruit display with nudges using well-designed graphics. Two versions are available, one for the VIC20 and the second for the Commodore 64 which uses the machine's graphic capabilities to the full.

The *Mini Roulette* is, in fact, three games in one. All three games are based on playing cards, the roulette game relying upon the players to gamble on the nature of the upturned card (ie black or red, odd or even and what suit it is). The second card game is pontoon — an old favourite and well presented. Finally there is Hi/Lo, a version of the TV quiz game where contestants have to guess whether a hidden card is higher or lower than the previous card. Mini Roulette gives each player £50 to gamble with which can be moved from game to game.

Finally we have *Westminster* — an intriguing game for the 64 based upon the General Election. The game can be played with up to four players, each representing a political party. As the game progresses each ▶

'candidate' has to tour up to 60 constituencies canvassing votes. It's a demanding game with a truly comprehensive instruction manual, and it should appeal to just about everybody, irrespective of their political colour or concern.

All Mr Chips games are sold on cassette for around £5.50, and if your local stockist has sold out you can *contact Mr Chip at: 9 Caroline Road, Llandudno, Gwynedd LL30 2TY.*

Zaxxon for Atari

At last! Zaxxon for the Atari VCS. CBS Electronics have managed to somehow cram the amazing Zaxxon game into an Atai-compatible cartridge. As you might expect the Atari VCS is not really up to the highly complex graphics normally used on the Zaxxon game, however, given the limitations CBS have done a good job. They've managed to retain nearly all of the elements of the original game though the three-dimensional graphics have been sacrificed in favour of a simple birds-eye-view, similar to River Raid. The new cartridge should have reached the shops by the time you read this.

Money Minder

Kuma, computer people of this parish, have just announced a neat *Home Budget* program for the CBM 64. Home Budget keeps close track of all family finances and includes a number of 'what if?' options that will be able to confirtm in a jiffy that a new lawnmower is, indeed, about as welcome as a poke in the eye with a sharp stick! The program allows for up to twelve categories of expenditure and three categories of income. All data is logged for time and date and, just in case you're worried about snoopers, there's a built-in security code to protect all the information. All this and more for a mite under a tenner.

Whilst we're on the subject of Kuma you'll be pleased to know that Spectrum owners can now experience the delights of *Vegetable Crash* - a kind of battle of the beets, militaristic mushrooms or even malicious marrows . . . Enough, enough . . . *Vegetable Crash* should keep angry animal conservationists happy. Mind you it might upset a few vegetarians. Find out for youself for £6.95. For more details *contact Kuma direct at: 12 Horseshoe Park, Pangbourne RG8 7JW or give them a tinkle on 07357 4335.*

Atari go soft

Atarisoft is the name of a new Atari venture aimed at getting their own back on the companies that have been selling Atari-compatible cartridges. Well, to be fair it's probably not vengeance that inspired Atari, just the reasonable assumption that they're probably missing out on a slice of the pie by not making their popular games titles available to owners of machines other than Atari micros.

Atarisoft will initialy concentrate on five popular machines; carts will be available for the Vic-20, CBM 64, and TI/99; cassette programs will be written for the Spectrum and BBC Model M/Electron. The first batch includes such old favouites as *Pac-man, Centipede* and *Donkey Kong.* In addition there will be a range of educational, financial and personal development (what's that?) programs.

An excellent version of Logo, the powerful teching language has just been developed for the Atari home micros. The Logo cartridge needs only 16K of RAM and features four dynamic graphic titles, almost unheard of in other versions. Other features include a 128 graphic colour capability and multi-voice sound effects. The new cart comes complete with a comprehensive 200-page instruction manual and has already been receiving high acclaim amongst members of the teaching profession. The whole package should be selling for around £60. Atari are giving schools and colleges the opportunity to buy a complete Logo teaching kit which includes a 600XL micro manual and Logo cart for just £175 (ex. VAT).

New carts for the VCS this spring include the first ever *Peanusts* game - Snoopy and the Red Baron; an excellent game with some of the best VCS graphics yet. Another new fun game is *Mario Brothers,* two crazy carpenters trying to rid their house of pests. Snoopy is expected to sell for £19.99 whilst the Mario Brothers weigh in at a whopping £29.99. Atari have three educational games based on the Sesame Street Muppet series; *Cookie Monster Munch, Alpha beam with Ernie* and *Big Bird's Egg Catch* are all designed to help young children grasp the basics of mathematics, letters of the alphabet and develop early reading skill. Atari have designed a special 'Kid's Controller', especially for smaller, less agile hands. *Cookie Monster Munch* and *Alpha Beam Ernie* both come with Kid's Controllers for a special price of £29.95, though the carts are available separately for £19.99.

Before we leave Atari altogether here's their latest chart for the top-ten VCS carts:

1 *Pole Position*
2 *Phoenix*
3 *Jungle Hunt*
4 *Moon Patrol*
5 *Centipede*
6 *Dig Dug*
7 *Kangaroo*
8 *Galaxian*
9 *Battlezone*
10 *Space Invaders*

Brad Blasts the Barbarians

Express Marketing, a relative newcomer to the games scene, has launched an intriguing new game in which there's a chance to win a brand spanking new colour TV. The game has five inter-related missions of increasing difficulty. At the end of the game there is one last clue to solve - **the answer could win you a new TV.** So find out who your nearest stockist is and have £5.95 ready. If in doubt *contact Express Marketing at 73 Watery Lane, Birminghma B9 4HN* who will give you full details.

Glug-Glug

It's difficult to imagine having enough bottle to go into a computer shop and ask for Glug-Glug, you'd feel silly, wouldn't you? Oh well, ours is not to reason why. *Glug-Glug* is one of five new games from CRL, written for the 48K Spectrum. *Glug-Glug* (I even feel silly typing it!) is all about sunken treasure; it's not as bad as it sounds! The other CRL Spectrum games are as follows: *Orpheus* - planetary attacks, laser blasters, mega bombs, you know the kind of thing . . . looks good. The topically named *Olympics* program concerns itself with the quest for gold in fourteen sporting events without having to get off your bum -so, so graphics. *Great Detective* is the penultimate Speccy game and this is based around a dastardly plot to steal the Crown Jewels which, naturally, you have to prevent. Finally there is *Pandamonia,* a particularly bloodthirsty adventure set atop the world's tallest skyscraper. Lots of battling aliens, deadly guards and nasty falls. All of the Spectrum games are priced £5.95.

For the CBM 64 theres *Omega Run,* a fighter plane game against the clock as terrorists attempt to blow up the world with a stolen 'doomsday device', only 25 ▸

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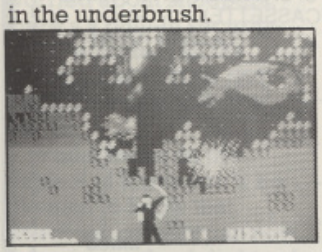
Finally from CRL there is *Test Match* for the BBC. You too can play a full five day test and one day world-cup match on your living room telly. All the rules of real cricket, 8 teams to choose from and up to 450 overs per game. *Test Match* is expected to sell for £7.95. In case of difficulty *contact CRL at: 9 Kings Yard, Carpenter's Road, London E15 2HD. The CRL hot-line is 01-533 2918.*

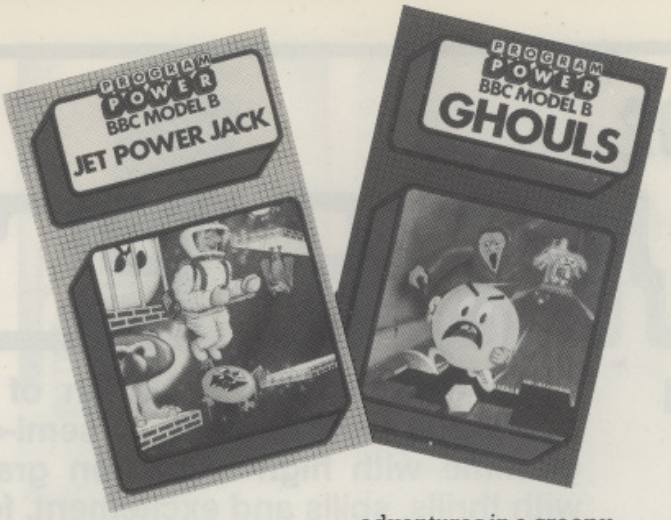
Superior Software

With a name like that they've got a lot to live up to. Anyway, Superior Software have no less than 6 new programs for the Acorn Electron this month. We've not yet had time to fully evaluate each game, but from the top they are: *Centibug, Alien Dropout, Invaders, World Geography, Fruit Machine* and *Constellation* - yours for just £7.95 each. Why not ask for more details from *SS at Regent House, Skinner Lane, Leeds 7.* And don't forget to tell them we told you.

News from Audiogenic

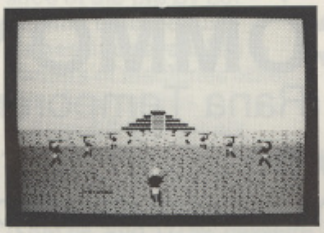
Two new games for the Commodore 64 and news of a new disc duplication plant from Audiogenic this month. First the games. *Forbidden Forest* is, so the publicity blurb maintains, 'a game with a difference'. We've heard that before. But wait, *Forbidden Forest* is different - it has 4-dimensional graphics. Never heard of 4-D? Well, it appears to be centred around a scrolling forest landscape (that's 3 dimensions), plus the fourth dimension - time. In other words day turns into night as our microchip hero (a champion archer), takes on the various nasties that lurk in the underbrush.





More Beeb games

Micro Power have just announced two new games for the BBC Model B; the first is *Jet Pack,* an exciting space adventure game featuring Jack the intergalactic hitch-hiker and the evil space Googjies. The second game is *Ghouls,*



Forbidden Forest is available on disc from all good computer stores for £12.95.

After fearsome forests it's artful Aztecs in *Aztec Challenge.* This disc-based game for the 64 concerns a hapless warrior chosen to be the annual human sacfifice. The only way out is to survive a series of ordeals all designed to put up life insurance premiums; sounds nasty. *Aztec Challenge* is available on tape (£8.95) or disc (£12.95) from all leading computer stockists.

Finally Audiogenic are pleased to announce that their Datagenic division is now busily duplicating discs in their new plant at the rate of 2,00 copies per day. Datagenic can offer duplication on a wide variety of formats for just about every machine you can think of. So if you're into disc duplication or would like further details on their two new games, why not drop them a line at *PO Box 88, Reading, Berks RG1 2SN.*

adventures in a creepy mansion with plenty of loose floorboards, poison-tipped arrows and malevolent ghosts. Both games sell for £7.95 and can be obtained from leading stockists or *Micro Power Ltd., Northwood House, North Street, Leeds LS7 2AA.*

Imagine That

Imagine Software has been pretty busy recently; apart from a well-publicised drive against piracy they have taken the dramatic step of slashing the price of all games programs to just £3.95 as of March 26th. This move is certainly going to ruffle a few feathers in the industry, and could well make the average software pirate think twice about the economics of duping a program when the real thing only costs four quid. We wish them luck and will be keeping an eye on their progress.

Still in the same vein, Imagine have just released a nifty program written for the Commodore 64 that will cut the loading times of cassette programs by aroud 70%. The *Injectload,* written by Mike Glover, uses a series of machine-code routines to bypass the reliable but time-consuming error checks. As an added bonus Imagine also reckon that *Injectload* will make it almost impossible to copy a program.

We'e not finished yet. Imagine have just switched to a new style cassette inlay card to give purchasers a much better idea of what they're buying. The new inserts will contain actual screen shots and more descriptive instructions. You'll also be treated to a picture of the author and a short blurb on the company. In keeping with the subject they've also put a bar-code insert to aid stock control.

Finally, news of a Mexican gardener called Pedro, the star of a new Imagine game. *Pedro,* which is available for the 48K Spectrum, CBM 64, Dragon, BBC B and Electron uses a 3-D graphic display to show Pedro planting flower seeds. A wide variety of animals try to hinder Pedro's progress, Pedro naturally does his best to eradicate the pests by throwing compost at them or stamping on the creatures. All good fun for living room conservationists - good graphics too.

Snow Business

Quicksilva's new releases for the Spring include an intriguing game, written for the 48K Spectrum, and based on Raymond Briggs' highly successful book and film, *'The Snowman'.* The game is loosely based on an episode in the film where a little boy builds and dresses a snowman who later comes alive. The object of the game is to first build the snowman from lumps of snow scattered around the screen (not a million miles away from Donkey Kong). After the Snowman has been built he has to be dressed, all the time avoiding the gas flames which will melt the snow. In later screens the flames turn into sleep monsters which send the boy to bed. The game has plenty of interesting elements but is ultimately predictable. It should, however, amuse even the most hardened game player for a while. *Snowman,* written by David Shea will be selling for around £6.95.

In addition to *Snowman,* Quicksilva have also released five other games which we will be reviewing in depth in a subsequent issue. For the Spectrum there is *Dragonsbane,* a powerful adventure program; *Fred,* mummies, pharoes, ghosts and pyramids — looks

interesting; and *Lazerone*, a fast moving alien shoot-out with a novel line in laser cannons. The last two games are for the Commodore 64; *Sting 64* concerns itself with one Bertie Bee defending his hive from a swarm of raiding bees and, finally, *Boog a Boo* (the flea), a version of the best-selling Spectrum game set in the colourful world of alien vegetation.

The Commodore 64 games will sell for £7.95 whilst the Spectrum programs are all available for £6.95. In case of difficulty *contact Quicksilva at: 13 Palmerston Road, Southampton, Hampshire SO1 1LL (0703 37497).*

New from Parker

Parker have just launched three new carts for the Philips G-7000 system, based on games already available to Atari VCS owners. The first, and probably most popular will be *Frogger*, one of the top sellers on other formats. Joining *Frogger* will be *Super Cobra* the helicopter flying game, and *Popeye* who battles with the evil Bluto and the fearsome sea-hag. Look out for these new Videopac games this month. *Parker Video Games can be found at: Palitoy, Owen Street, Coalville, Leicester LE6 2DE.*

ARCADIA

by Bradley

Did You Know...

You might think video games are a comparatively recent innovation — in fact, the first fully interactive computer game was devised in 1962 by a young programmer called Steve Russell. The game, called *Spacewar*, could only be played on large commercial computers. Research has since shown that Steve Russell's game cost the US Government and companies with large computers several million dollars through programmers illiciltly playing *Spacewar*, and using expensive computer time.

The first arcade video game, *Pong*, was installed in 1972 in Andy Capp's bar in Sunnyvale, California. The machine broke down after just two days. Engineers sent to repair the machine found the fault straight away — the coin box was jammed full of money!

The compact casssette used to store computer programs was invented 21 years ago by Philips. To date some 10,000 million blank cassettes have been manufactured making it the most popular recording medium of all time.

The first commercial TV game contained well over 300 components, including numerous complex microchips — that was in 1972. By 1975 the number had fallen to 200 components and just 9 chips. The following year the number fell to around 75 components with one main microchip. Today's complex games and computers now contain around 200 components but each of the dozens of chips in modern TV game or computer is many times more complex than the entire early TV games.

Nolan Bushnell, the man who perfected the video game and founded Atari is now involved in a chain of pizza restaurants in the USA. *Chuck & Cheese's Pizza Time Theatre* features animated robots that sing and dance while you eat your pizza. Bushnell is still involved with arcade video games, though the success of Pizza Time keeps him occupied. There are expected to be over 1,000 Pizza Time restaurants by 1985 with plans for branches in the UK and Japan in the next year or so.

Your turn...

Gotta game? Reckon its good enough to be published in the mag? We can't make any promises but if you want to have a go send it to us, preferably in cassette form with a complete listing, together with any documentation. If it makes it past our review panel and into the magazine then we'll pay you for your efforts. Make sure it's an original (we can tell, we read the other mags and books too!) and please make sure it works OK before sending it to us.

To make life easier please use the form below and make sure you remember to include your name and address — unless you've perfected a telepathy program!

Title .....
Micro ..... Model .....

Memory needed (k) ..... Peripherals needed .....

Author's name .....

Author's address .....

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Loading details .....

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Signature ..... Date .....

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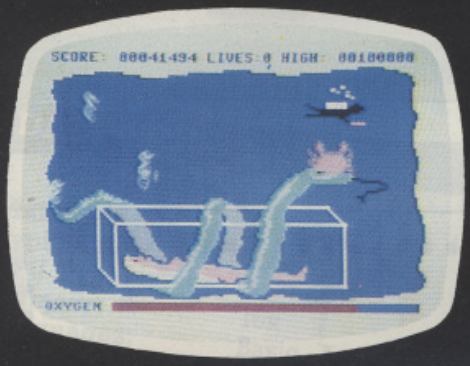
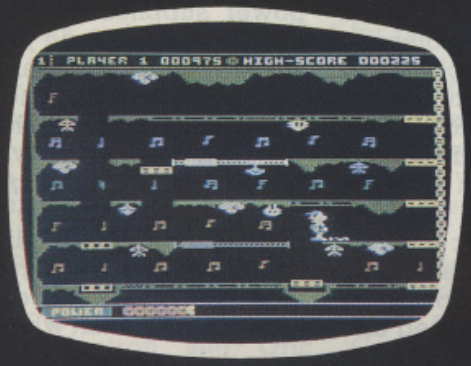
Atari's new range of game-playing home computers face some tough opposition these days. Thomas Russel investigates the new 600XL, a replacement for the Atari 400 — how does it measure up?

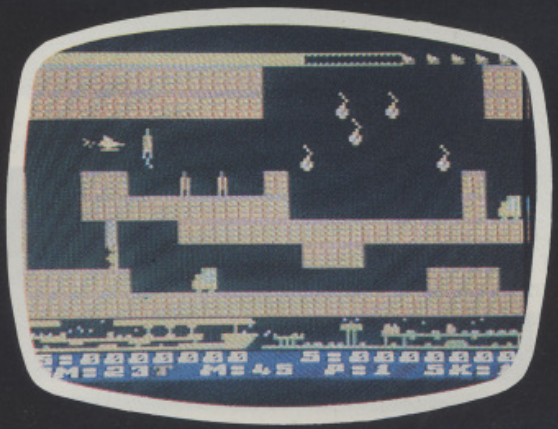
Atari 600XL

~All Keyed Up

Test File

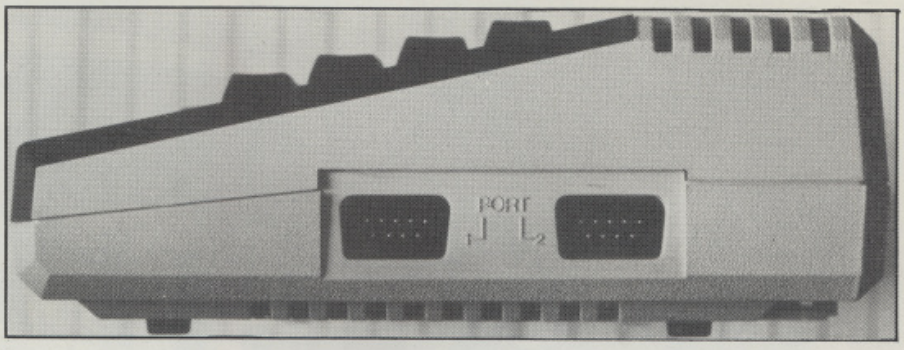






Roughly translated the word 'Atari' is Japanese for 'prepare to be attacked' — a fair comment on Atari's past record in the highly competitive video game and home computer business. However, it's a tough world for any micro these days;with new machines appearing almost weekly, Atari have taken a bold step in launching two completely new micros to replace their ageing 400 and 800 machines.

Atari are, perhaps, best known for their involvement in the video game business, and it was hardly surprising that the 400 and 800 micros were heavily orientated towards the game market. Their replacements, the 600XL and 800XL, are no less capable of protecting the Earth against the alien hoardes, and as a bonus they retain almost complete compatability with software designed to run on the 400 and 800 machines. That's a big bonus ▶



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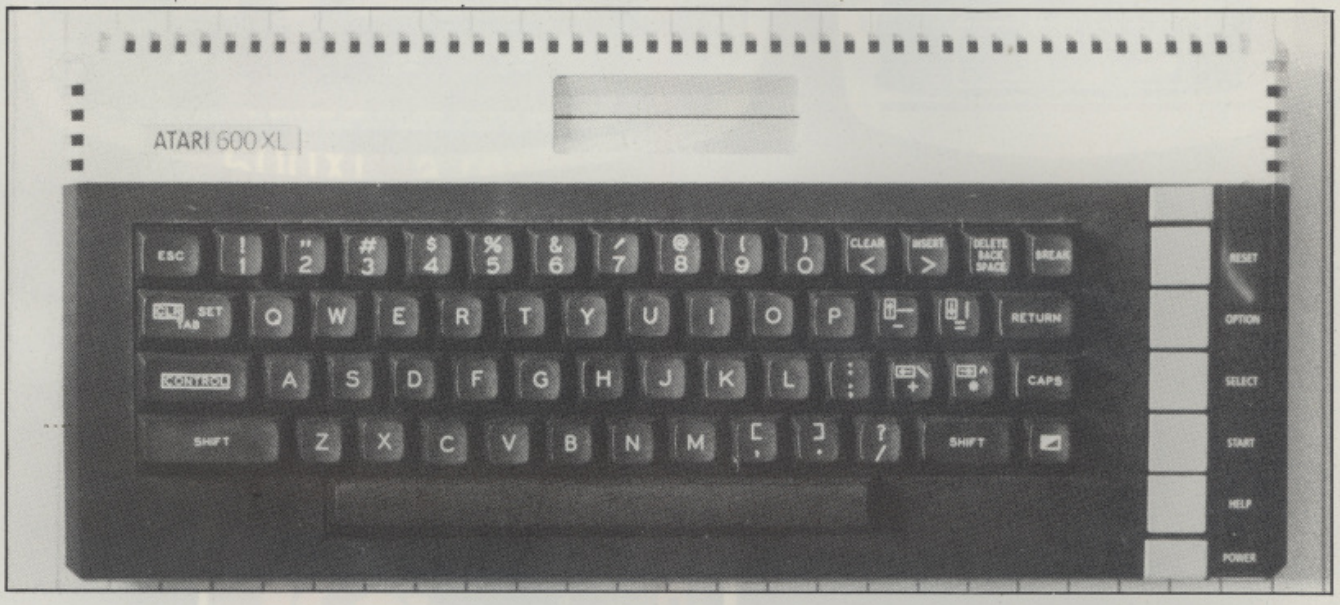


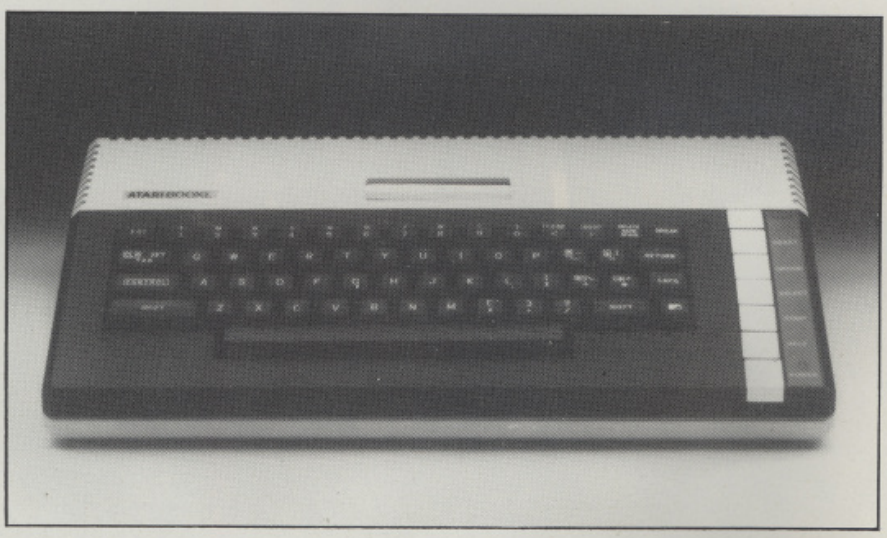
for any new machine — an established library of several hundred games, educational as well as business packages, must heavily influence the decision of anyone looking for a micro.

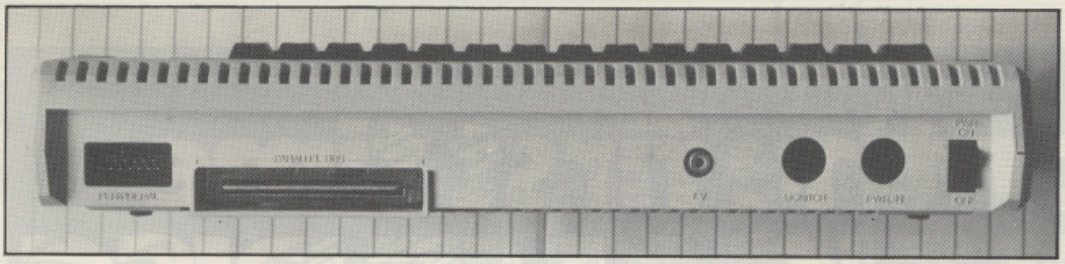
Many of the major drawbacks of the 400 and 800 have been heavily ironed out on the new machines, but the most significant changes have been to the 400 model with its replacement: the 600XL. This is the machine we'll be concentrating on in this particular review.

The 600XL is a proper micro. Everything is in the right place; it has a full-specification, full-stroke QWERTY keyboard that rivals anything currently produced by rivals Commodore, Sincliar, Dragon etc. Some thought has been put into the ergonomics, (an important and often ignored facet of a micro's design) ensuring that all the primary functions are close to hand and that the tiresome chore of button and key pressing is kept to a minimum. Input and ouptut ports are a little limited in scope, allowing Atari to keep a tight grip on the peripheral market by effectively barring all but their own plug-in products (unless you are willing to resort to expensive interfaces).

In contrast Atari have retained the standard joystick sockets thus enabling the hand controllers first developed for the 2600 TV game to plug straight in. Needless to say it will also accommodate any Atari-compatible controllers. There is the normal RF output socket for connecting direct to a TV aerial socket; but, in addition, Atari have thoughtfully provided a 5 pin DIN socket for a direct video connection to a colour monitor. Power is supplied by what can only be described as a reject from the Central Electricity Generating Board — it must be one of the biggest transformer/power supplies ever. Its about the same weight and just marginally smaller than a house brick.

Software reaches the CPU by two direct routes: much of the off-the-shelf software is available on plug-in ROM cartridges which slot into a hatch on the top of the cabinet; Programs on disc or tape use the peripheral port although, as previosly mentioned, Atari will only talk unto Atari when it comes





DATA PANEL

Make/Model:	Atari 600XL
Typical price (£):	160
CPU Type:	8 bit 6502
Memory:	16k
Languages:	Basic, Assembler, Pilot, Logo
Keyboard:	Standard, 61 keys
Display:	TV/Mon, 320 x 192, 5 spirte, 256 colour
Sound:	4 voices & effects
Interfaces:	Own for disc, printer, cass, RS232 Centronics optional
Software:	500 plus titles, all areas
Distributor:	Atari (UK) Slough, 0753 33344
Summary:	A well-designed machine with an impressive games capability.
	PLUS: Price, facilities, graphics keyboard
	MINUS: Expensive peripherals, manuals

to peripherals, so be prepared to marry the manager's daughter.

So much for the cosmetics, now for the part you've all been waiting for — the guts. The 600XL is sold as a 16K machine (expandable with plug-in memory modules to 64K). It's based around the 8-bit 6502 CPUchip running at 1.8MHz. The 6502 has a good track record, turning up in the BBC, Electron and Oric button boxes. A 24K on-board ROM is crammed full of Atari BASIC and diagnostic software — a definite improvement over its predecessor which relied on a BASIC plug-in cartridge. The display has a text format of 40 x 24 characters with a maximum graphics resolution of 320 x 192 pixels and an impressive range of 256 colours and 5 sprites. In English that means it can do a pretty good job of filling the screen — more of its game potential later on. The 600XL has a fair to middling sound capability with four voices and variable tone, volume and distortion. These are modulated onto the voice signal for through-the-TV sound. It can be most impressive and is used to good effect on much of the available software.

Connecting the 600XL up to the outside world can be an expensive business. If you decide to ignore the Atari peripherals you'll need to invest in the XL 'Expander' which will set you back around £135. This has a Centronics and 2 RS232 interfaces plus slots for 8 modular expansion cards. Atari' own plug-ins include a cassette program recorder, 64K memory module, touch tablet, trak ball controller, disc drive and three excellent printers. The printers consist of a 4 head colour printer/plotter, 80 column dot matrix printer and a remarkable letter-quality printer that is one of the cheapest on the market. It uses a kind of simplified 'daisy-wheel' system with character embossed rollers impacting onto a ribbon.

And so to the games. The 600XL is not, unfortunately totally compatible with existing Atari software; around 50 of the 500 plus programs available on cartridge, cassette and disc will not run properly on the 600XL. This minor drawback is not as bad as it might seem as few of the worthwhile programs are included in the list of non-runners.

Unfortunately there's not enough space to spare to list all of the available software suitable for the 600XL, but suffice it to say that the machine's capabilities make it one of the best game-playing micros on the market. Worthy of mention is the excellent version of Donkey Kong and Scrable. In addition there is the well-designed Atariwriter word processing program and innovative Paint Box package (used in conjunction with the graphics tablet) — this brilliantly written program allows full access to the 600's excellent graphics capability.

★ ★ ★ ★ ★

In conclusion the 600XL is a real improvement over the 400 with its membrane type keyboard — at last Atari have produced a machine at the right price, with a well-thought out range of features and facilities that should appeal to both gamers and those interested in the more serious applications of a home computer. There are drawbacks: adding to the Atari can prove expensive. But Atari's own range of peripherals may dissuade first-timers from looking to other manufacturers' products. At £160 or thereabouts it represents good value for money. Cartridges can be pricey but there's plenty of worthwhile software on cassette and disc. The range of games programs is one of the best and there's very little in the way of rubbish to be found. Recommended, but watch the prices!

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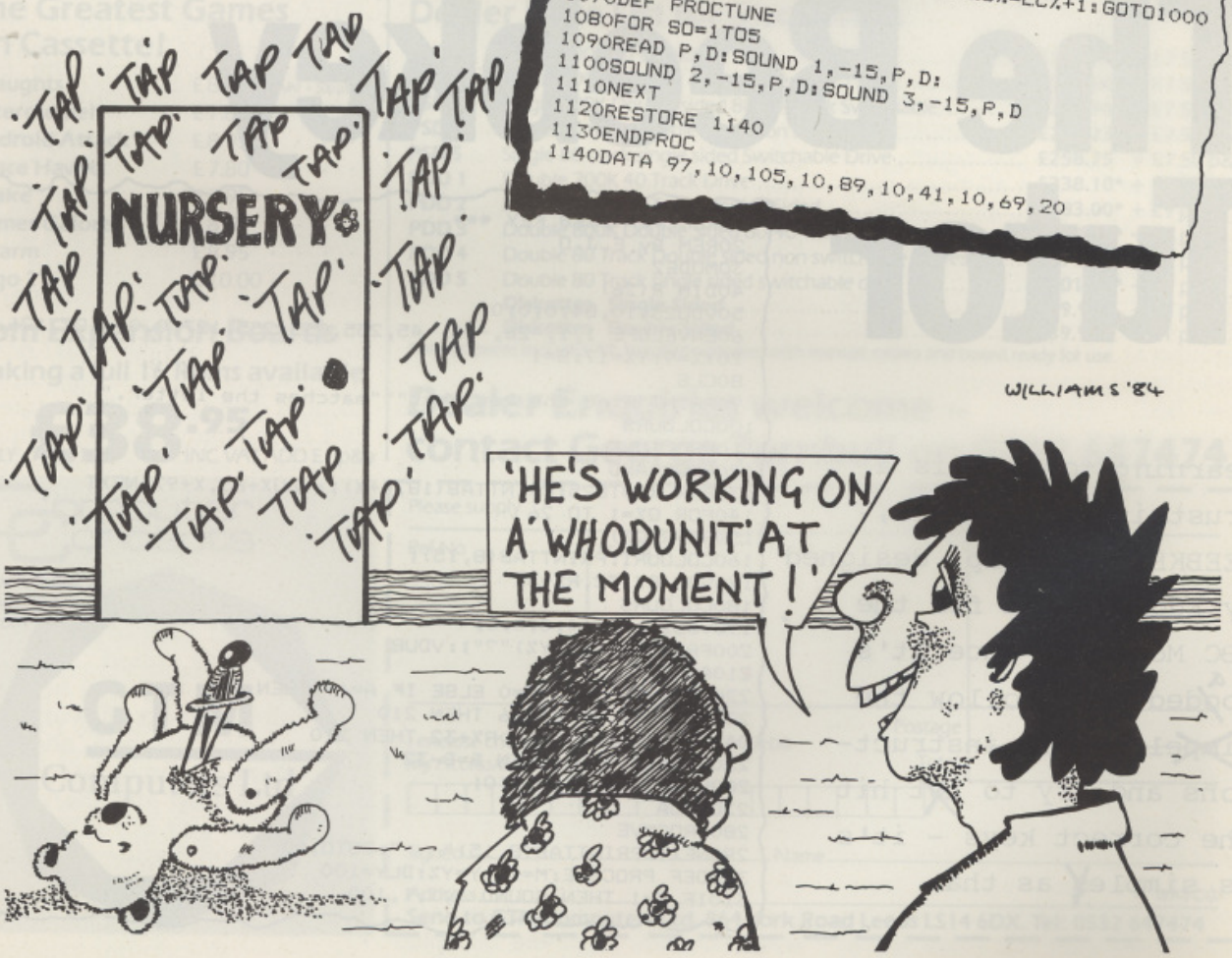
The Beebkey Tutor

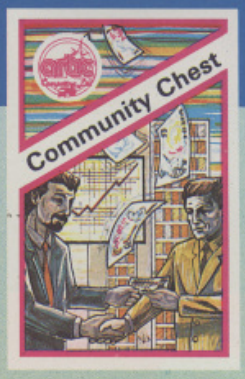
Learning to type is a frustriting business, BEEBKEY can help, designed by Eddie Oland for the BBC Model B. Once it's loaded just follow the simple instructions and try to hit the correct keys - it's as simple as that

```
10REM *** BEEB KEY ***
20REM By E.J.O
30MODE2
40DIM R(26)
50VDU23;10,84;0;0;0;
60ENVELOPE 1,1,-26,-36,-45,255,255,255,127,0,0,-127,126,0
70X%=9:Y%=17:S=1
80CLS
90PRINT"Find the key that" "matches the letter."
100COLOUR5
110PROCTUNE
120PROCRAND
130FOR X=0TO25:PRINTTAB(18,4+X);:VDUX+65,X+97:NEXT
140FOR Q%=1 TO 26
150R%=R(Q%)
160COLOUR1:PRINTTAB(8,15);
170VDU R%,32,R%+32
180COLOUR3
190VDU23;10,64;0;0;0;
200PRINTTAB(X%,Y%)"?";:VDU8
210A=GET
220IF A=17 THEN S=0 ELSE IF A=19 THEN S=1
230IF A<33 OR A>126 THEN 210
240IF A<>R% AND A<>R%+32 THEN 210
250B=A:IF B>96 THEN B=B-32
260VDU23;10,84;0;0;0;
270VDUA
280PROCMVE
290NEXT:PRINTTAB(8,15)"    ":GOTO100
300DEF PROCMVE:M=X%:Y=Y%:DLY=100
310IF S=1 THEN SOUND 1,1,1,100
```

```
320PROCRGT
330PROCUP
340PROCLFT
350PROCDWN
360PROCLFT
370PROCUP
380PROCRGT
390PROCDWN
400PROCRGT
410PROCHME
420ENDPROC
430DEF PROCSLW:FOR SLOW=1TO DLY:NEXT:ENDPROC
440DEF PROCRGT
450FOR M=M TO M+2:REM * RGT
460PROCSLW
470PRINTTAB(M,Y);:VDUA
480PRINTTAB(M-1,Y);" "
490NEXT:M=M-1
500ENDPROC
510DEF PROCUP
520FOR Y=Y TO Y-4 STEP-1:REM * UP
530PROCSLW
540PRINTTAB(M,Y);:VDUA
550PRINTTAB(M,Y+1);" "
560NEXT:Y=Y+1
570ENDPROC
580DEF PROCLFT
590FOR M=M TO M-2 STEP-1:REM * LFT
600PROCSLW
610PRINTTAB(M,Y);:VDUA
620PRINTTAB(M+1,Y);" "
630NEXT:M=M+1
640ENDPROC
650DEF PROCDWN
660FOR Y=Y TO Y+4:REM * DWN
670PROCSLW
680PRINTTAB(M,Y);:VDUA
690PRINTTAB(M,Y-1);" "
700NEXT:Y=Y-1
710ENDPROC
720DEF PROCHME
730M1=M:Y1=Y:DIR=1
740REPEAT
750PROCSLW
760PRINTTAB(M1,Y1);:VDUA
770PRINTTAB(M1-1,Y1);" "
780M1=M1+1
790REMSOUND &0011,1,RND(80)+(M1*4),50
800UNTIL M1>17
810M1=M1-1
820IF B-64+3<Y1 THEN DIR=-DIR
830REPEAT
840PROCSLW
850PRINTTAB(M1,Y1);:VDUA
860PRINTTAB(M1,Y1-DIR);" "
870IF Y1<>B-64+3 THEN Y1=Y1+DIR
880UNTIL Y1=B-64+3
890PRINTTAB(M1,Y1);:VDUA
900PRINTTAB(M1,Y1-DIR);" "
910DLY=1500:PROCSLW
920IF A>90 THEN A=A-32
930PRINTTAB(M1+1,Y1);:VDUA,A+32
940PRINTTAB(M1,Y1);" "
950IF S=1 THEN SOUND&0011,0,0,0:SOUND 0,-15,4,2
960ENDPROC
970DEF PROCRAND
980FOR Q%=1TO26:R(Q%)=0:NEXT
990LC%=1
1000R%=RND(26)+64
1010FOR Q%=1TO LC%
1020IF R(Q%)=R% THEN TERM=Q%:Q%=LC% ELSE TERM=0
1030NEXT
1040IF TERM<>0 THEN 1000
1050R(LC%)=R%:IF LC%<>26 THEN LC%=LC%+1:GOTO1000
1060ENDPROC
1070DEF PROCTUNE
1080FOR S0=1TO5
1090READ P,D:SOUND 1,-15,P,D:
1100SOUND 2,-15,P,D:SOUND 3,-15,P,D
1110NEXT
1120RESTORE 1140
1130ENDPROC
1140DATA 97,10,105,10,89,10,41,10,69,20
```



Tonight you could be lost in a world of a thousand mirrors



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WAVCG

SPECTRUM 48K

Star Trek 48

The ever-popular Star Trek TV programme is the basis for this superb game written for the Sinclair Spectrum. Unlike other, similar shoot-'em-up games this one has got an ending.

The program may look complex but it isn't, in fact it should readily convert to any similar machine as there are very few statements relevant only to the Spectrum.

When the program is run there is a short delay of approximately two minutes whilst the Spectrum reads in the machine code and graphic data. As soon as 'Select Level' appears type in a number between 0 and 9, 0 being the easiest level. There is another delay of around 30 seconds whilst the game sorts out the galaxy.

The commands are as follows:

WARP - This is used to travel from one sector to another - simply type in the sector number e.g. 000.

SHIP - This is the most important command, it gives you a menu of objects to scan for, simply type in the required number and it will print out the position of that object.

PHASER - used to shoot Klingons. The 'Enter' key energises the phaser, the 'Space' key initialises the weaponry and the '0' key fires. It takes an average of four Phaser blasts to destroy a Klingon.

PHOTON - Use only in dire emergency when you're nearly dead. Use keys 5 & 8 to aim.

SCIENCE - Shows the contents of a quadrant.

IMPULSE - To be used when you wish to dock with a starbase or starfleet. Use 5 & 9 to manouevure, use E & O to dock.

LIST - Use to list commands.

REPAIR - Speeds up ship repair.

PANIC - Try it and see; can be used only once per game and uses up to 1000 units of energy.

ALERT - Used to change the condition of the shields, i.e. on, half on, off. Red is full on, yellow is half on and green is off. Shields drain a lot of energy so use them sparingly.

DAMAGE - The ship will repair itself automatically but this command will describe the damage sustained by each part of the ship. The higher the number the greater the damage.

Hints & Tips

If you enter a sector containing a Klingon he will shoot at you so be prepared. To make the game harder there is a Black Hole hidden in the galaxy which will suck you in if you get too near it. To finish the game you have to explore all planets, kill all Klingons and then land at Starfleet HQ. As the program contains machine code great care should be taken.

We recommend you SAVE the program before running. Finally, in the listing, italics should be entered as the corresponding graphic. Have fun.

```
   1 REM WRITTEN BY :-
ROBERT KIRKBRIDE
EDITED FOR PUBLICATION BY :-
ROBERT KIRKBRIDE AND MARK ALLAN
```



```
   2 RANDOMIZE RND+10: CLEAR 599
99
   3 DIM H$(10,15): DIM H(10)
   4 POKE 23658,8
   5 POKE 23609,8
  12 BORDER 0: PAPER 0: FLASH 0:
 BRIGHT 0: INK 0: INVERSE 0: OVE
R 0: CLS : LET A$="SELECT LEVEL"
   PRINT AT 3,12;"(0-9)"
  13 PRINT AT 5,5;"
   PRINT AT 5,5;INT (RND*5);A$; FO
R T=1 TO 70: IF INKEY$="" THEN N
EXT T: PRINT AT 0,0;"
": FOR T=1 TO 70: IF INKEY$="
THEN NEXT T: GO TO 13
  14 LET PEEK=PEEK 23560: IF PEE
K<CODE "0" OR PEEK>CODE "9" THEN
 GO TO 13
  15 PRINT AT 0,9;"SELECT LEVEL"
  GO SUB 9100
  16 RESTORE 9120
  17 LET SKILL=9-(PEEK-48)+1: LE
T SKILLA=PEEK-48
  18 RESTORE 9120: GO SUB 9100
  19 FLASH 0: PAPER 0: INK 7: BO
RDER 0: BRIGHT 0: OVER 0: INVERS
E 0: CLS
  20 PRINT AT 10,2;"Please wait
a few seconds."
  40 LET X1=10: LET Y1=10
  50 LET A=-RND+65535
  70 LET SC=0: LET SH=6000: LET
PH=10: LET CO=1: LET SH=4000
  75 LET KLI=0
  80 LET XQ=0: LET YQ=0: LET ZQ=
0
  81 LET PA=0
  90 GO SUB 2590
 100 CLS
 120 POKE 23672,0: POKE 23673,0:
 POKE 23674,0
 125 LET TIME=0
 126 REM
 127 REM
 129 REM
 130 IF TIME>0 THEN GO SUB 6900:
 LET TIME=INT (TIME)
 131 LET SC=INT (SC)
 132 LET DAM=0: FOR T=1 TO 10: L
ET DAM=DAM+O(T): NEXT T
 135 CLS
 140 GO SUB 2350
 170 PRINT AT 1,9; INK 5;"2";"
                ";AT 1,9;
 180 LET b$=""
 190 FOR T=0 TO SKILL*100: LET A
$=INKEY$: IF A$="" THEN NEXT T:
GO SUB 3130: GO TO 170
 195 IF a$=CHR$ 12 AND LEN B$>0
 THEN LET b$=b$( TO LEN b$-1): PR
INT CHR$ 8;" ";CHR$ 8;: GO TO 19
0
 197 IF A$<>CHR$ 13 AND A$<>CHR$
 12 THEN IF A$>CHR$ 0 AND A$<CHR
$ 31 OR A$>CHR$ 91 THEN NEXT T
 200 IF LEN B$<20 THEN PRINT INK
 6; FLASH 0;a$;
 220 IF a$=CHR$ 13 THEN GO TO 25
0
 225 IF A$<>CHR$ 13 AND A$<>CHR$
 12 THEN IF A$>CHR$ 0 AND A$<CHR
$ 31 OR A$>CHR$ 91 THEN NEXT T
 230 LET b$=b$+a$: NEXT T
 240 DATA "DAMAGE","ALERT","REPA
IR","WARP","IMPULSE","PHASER","P
HOTON","SCIENCE","SHIP","LIST"
 250 RESTORE 240
 257 IF B$="LIST" THEN GO TO 411
0
 258 IF B$="PANIC" THEN GO TO 50
00
 260 LET i=1
 270 READ a$: IF b$=a$ THEN GO T
O 300
 280 LET i=i+1: IF i<>11 THEN GO
 TO 270
 290 GO TO 4110
 310 IF o(i)>0 THEN PAUSE 100: C
LS : GO SUB 2730: GO TO 130
 320 GO TO (330 AND i=1)+(400 AN
D i=2)+(500 AND i=3)+(600 AND i=
4)+(1990 AND i=5)+(1440 AND i=6)
+(1700 AND i=7)+(950 AND i=8)+(7
30 AND i=9)+(1130 AND i=10)+(411
0 AND i=11)
 325 REM
 330 CLS
 340 PRINT "DAMAGE CONTROL"
 350 PRINT "
 360 LET I=2
 370 GO SUB 2730
 380 LET I=I+1: IF I<10 THEN GO
TO 370
 390 GO TO 130
 395 REM
 400 CLS
 410 PRINT "ALERT CONTROL"
 420 PRINT "
 430 PRINT "1=GREEN"
 440 IF SH>500 THEN PRINT "2=YEL
LOW"
 450 IF SH>1500 THEN PRINT "3=RE
D"
 460 LET D$=INKEY$: IF D$<"1" OR
 D$>"3" THEN GO TO 460
 465 LET CO=VAL D$
 470 IF SH<500 THEN LET CO=1
 480 IF SH<1500 AND CO=3 THEN LE
T CO=2
 490 GO TO 130
 494 REM
 495 REM
 500 CLS
 505 LET CHECK=0
 510 PRINT "REPAIR CONTROL"
 520 PRINT "
 530 PRINT "THE DAMAGE IS NOW"
 540 LET I=1
 550 LET O(I)=O(I)-INT (RND*5)-1
: IF O(I)<0 THEN LET O(I)=0
 560 IF O(I)>0 THEN GO SUB 2730:
 LET CHECK=1
 570 LET I=I+1: IF I<11 THEN GO
TO 550
 575 IF CHECK=0 THEN PRINT "NOTH
ING"
 580 LET TIME=TIME+INT (RND*20)+
100: LET EN=EN-200
 590 GO TO 130
 592 REM
 593 REM
 594 REM
 600 CLS
 610 PRINT "WARP DRIVE"
 615 LET KLI=0
 620 PRINT "
 630 PRINT "TO WHAT QUADRANT X,Y
,Z ?"
 640 INPUT Q
 645 LET X=INT (Q/100): LET Y=IN
T (Q/10)-X*10: LET Z=Q-X*100-Y*1
0
 650 IF X<0 OR X>7 OR Y<0 OR Y>7
 OR Z<0 OR Z>7 THEN BEEP .3,-20:
 GO TO 600
 660 PRINT "WHAT SPEED (1 TO 9)"
 670 LET Q$=INKEY$: IF Q$<"1" OR
 Q$>"9" THEN GO TO 670
 675 LET A=VAL Q$
 677 LET SPEED=(9 AND A=1)+(8 AN
D A=2)+(7 AND A=3)+(6 AND A=4)+(
5 AND A=5)+(4 AND A=6)+(3 AND A=
7)+(2 AND A=8)+(1 AND A=9)
 678 LET SPEED=SPEED/200
 679 IF X=X0 AND Y=Y0 AND Z=Z0 T
HEN LET EN=EN-50: GO TO 130
 680 LET D=(ABS (X-X0)+ABS (Y-Y0
)+ABS (Z-Z0))
 690 LET EN=EN-D*A
 700 LET Z0=INT (Z): LET Y0=INT
(Y): LET X0=INT (X)
 701 CLS
 702 LET Q$="  ": LET B=1: FOR
A=17 TO 4 STEP -1: PRINT AT A,B;
Q$: BEEP SPEED,A+2: BEEP SPEED,A
+2-5: BEEP SPEED,A+2-10: PRINT A
T A,B;"  ": LET B=B+2: IF B>25
THEN GO TO 710
 703 NEXT A
 710 LET TIME=TIME+200*D/A
 720 GO TO 130
 725 REM
 726 REM
 727 REM
 730 CLS
 740 PRINT "SHIPS COMPUTER"
 750 PRINT "
 760 PRINT "A DATA BASE SCAN FOR
WHAT ?"
 770 PRINT "1=STARBASE"
 780 PRINT "2=KLINGON"
 790 PRINT "3=BLACK HOLE"
 800 PRINT "4=M CLASS PLANET"
 810 PRINT "5=G CLASS PLANET"
 820 PRINT "6=STARFLEET HQ"
 830 LET Q$=INKEY$: IF Q$<"1" OR
 Q$>"6" THEN GO TO 830
 831 PRINT 'VAL Q$;" SELECTED";
PRINT '"PRESS R AT ANY TIME TO R
ETURN TOGAME"
 835 LET A=VAL Q$
 840 IF A=3 THEN GO TO 930
 850 IF A=6 THEN PRINT "STARFLEE
T HQ ";XHQ;YHQ;ZHQ;: GO TO 130
 885 POKE 23692,255
 886 LET PRINT=0: LET PRINTA=15
 890 FOR Z=0 TO 7: FOR Y=0 TO 7:
 FOR X=0 TO 7
 900 LET G=PEEK (F+X+Y*8+Z*64)
 901 IF A=1 THEN IF G=6 OR G=16
THEN PRINT AT PRINTA,PRINT+4;X;Y
;Z: LET PRINT=PRINT+1: IF PRINT=
7 THEN LET PRINT=0: LET PRINTA=P
RINTA+1
 902 IF A=1 THEN IF G=10 THEN PR
INT AT PRINTA,PRINT+4;X;Y;Z: LET
 PRINT=PRINT+1: IF PRINT=7 THEN
LET PRINT=0: LET PRINTA=PRINTA+1
 903 IF A=5 THEN IF G=9 THEN PRI
NT AT PRINTA,PRINT+4;X;Y;Z: LET
 PRINT=PRINT+1: IF PRINT=7 THEN L
ET PRINT=0: LET PRINTA=PRINTA+1
 904 IF A=4 THEN IF G=20 THEN PR
INT AT PRINTA,PRINT+4;X;Y;Z: LET
 PRINT=PRINT+1: IF PRINT=7 THEN
LET PRINT=0: LET PRINTA=PRINTA+1
 905 IF INKEY$="R" THEN GO TO 13
0
 906 IF A=5 THEN IF G=19 THEN PR
INT AT PRINTA,PRINT+4;X;Y;Z: LET
 PRINT=PRINT+1: IF PRINT=7 THEN
LET PRINT=0: LET PRINTA=PRINTA+1
 915 IF A<>2 THEN NEXT X: NEXT Y
: NEXT Z: GO TO 130
 917 IF G>20 AND G<70 THEN PRINT
 AT PRINTA,PRINT+4;X;Y;Z: LET PR
INT=PRINT+1: IF PRINT=7 THEN LET
 PRINT=0: LET PRINTA=PRINTA+1
 920 NEXT X: NEXT Y: NEXT Z: GO
TO 130
 930 IF PEEK (F+XBL+YBL*8+ZBL+64
)<>177 THEN GO TO 130
 940 PRINT "BLACK HOLE ";XBL;YBL
;ZBL: GO TO 130
 941 REM
 942 REM
 943 REM
 950 CLS
 960 PRINT "SCIENCE COMPUTER"
 970 PRINT "
 980 LET Q=PEEK (F+XQ+YQ*8+ZQ*64
)
 990 PRINT "COMPUTER INDICATES"
1000 IF Q=7 OR Q=17 THEN PRINT "
A BLACK HOLE": GO TO 130
1010 IF Q=5 OR Q=15 THEN PRINT "
A STARBASE": GO TO 130
1020 IF Q=10 THEN PRINT "AN EXPL
ORED M CLASS PLANET": GO TO 130
1030 IF Q=9 THEN PRINT "AN EXPLO
RED G CLASS PLANET": GO TO 130
1040 IF Q=20 THEN PRINT "AN M CL
ASS PLANET"
1050 IF Q=19 THEN PRINT "A G CLA
SS PLANET"
1060 IF Q>40 THEN PRINT "A KLING
ON WARSHIP!": POKE (F+XQ+YQ*8+ZQ
+64),Q-20: GO TO 130
1070 IF Q>20 THEN PRINT "A KLING
ON WARSHIP!": GO TO 130
1080 IF Q=0 THEN PRINT "NOTHING"
: GO TO 130
1090 POKE (F+XQ+YQ*8+ZQ*64),Q-10
1100 LET SC=SC+25: IF Q=20 THEN
LET SC=SC+25: LET MP=MP-1
1105 IF Q<>20 THEN LET GP=GP-1
1106 FOR T=1 TO 100: NEXT T
1110 GO SUB 2800
1120 GO TO 130
1200 REM
1210 REM
1220 REM
1440 CLS
1450 PRINT "PHASER BANK"
1460 PRINT "
1470 PRINT "PHASERS READY AND WA
ITING."
1480 LET Q=PEEK (F+XQ+YQ*8+ZQ*64
): IF Q<21 THEN PRINT "BUT WHAT
ARE YOU FIRING AT ?": GO TO 130
1490 PRINT "PRESS SPACE TO START
"
1495 PRINT "PRESS '0' TO FIRE"
1500 LET Q$=INKEY$: IF Q$<>" " T
HEN GO TO 1500
1510 CLS : LET KYP=12
1512 IF INKEY$="0" THEN GO TO 15
80
1514 IF KYP=12 THEN LET CH=1
1516 IF KYP=18 THEN LET CH=-1
1517 PRINT AT 1,KYP;"  "
1518 LET KYP=KYP+CH
1520 PRINT AT 1,KYP;"  "
1522 FOR T=0 TO 10: NEXT T
1525 GO TO 1512
1580 POKE 23677,127: POKE 23678,
9: DRAW OVER 1;0,166
1582 POKE 23677,127: POKE 23678,
9: DRAW INVERSE 1;0,166
1584 IF KYP=15 THEN GO TO 1600
1586 GO TO 130
1600 POKE 63006,5: POKE 63025,28
: LET U=USR 63000: LET U=USR 610
00: BORDER 0
1630 LET V=PEEK (F+XQ+YQ*8+ZQ*64
): LET B=V-INT (RND*5): LET B=V-
7
1640 IF B>21 OR (B>41 AND V>40)
THEN POKE (F+XQ+YQ*8+ZQ*64),B: G
O TO 130
1650 LET KLI=0: GO SUB 2930
1660 LET SC=SC+INT (RND*50)+21
1670 POKE (F+XQ+YQ*8+ZQ*64),0
1680 LET KL=KL-1
1690 GO TO 130
1691 REM
1692 REM
```

```
1693 REM
1700 CLS
1710 PRINT "PHOTON TORPEDOE"
1720 PRINT "
1730 IF PH=0 THEN PRINT "YOU AIN
T GONE NONELEFT": GO TO 130
1740 LET 0=PEEK (F+X0+Y0*8+Z0*64
): IF 0<21 THEN PRINT "WHAT ARE
YOU FIRING AT ?": GO TO 130
1760 PRINT '"Press 'Space' to st
art"
1770 LET q$=INKEY$: IF q$<>" " T
HEN GO TO 1770
1780 CLS : LET KXP=5: LET KYP=IN
T (RND*32)
1781 PRINT #1;AT 0,15;"↑"
1784 IF INKEY$="5" AND KYP<29 TH
EN PRINT AT KXP,KYP;" ": LET KY
P=KYP+1
1785 IF INKEY$="8" AND KYP>0 THE
N PRINT AT KXP,KYP;" ": LET KYP
=KYP-1
1788 LET RND=INT (RND*3): PRINT
AT KXP,KYP;" ": IF RND=0 THEN L
ET KYP=KYP-1
1790 IF RND=1 THEN LET KYP=KYP+1
1792 LET KYP=KYP+(KYP<0)-(KYP>30
)
1794 PRINT AT KXP,KYP;"🚀"
1795 IF KYP=15 OR KYP=16 THEN GO
TO 1800
1796 GO TO 1782
1800 PLOT 92,0: DRAW OVER 1;36,4
8: PLOT 157,0: DRAW OVER 1;-36,4
8
1802 FOR A=15 TO 5 STEP -1: PRIN
T AT A,16;"▲": BEEP .01,A: BEEP
.01,A-5: PRINT AT A,16;" ": NEXT
A
1804 IF KYP=15 OR KYP=15 THEN PR
INT AT KXP,KYP;" ": GO TO 1810
1806 LET PH=PH-1: GO TO 130
1810 FOR T=0 TO 8: PLOT 128,131:
DRAW RND*20,RND*20: PLOT 128,13
1: DRAW -RND*20,-RND*20: PLOT 12
8,131: DRAW RND*20,-RND*20: PLOT
128,131: DRAW -RND*20,RND*20
1811 BEEP .008,10+T: NEXT T
1820 LET PH=PH-1
1940 LET sc=sc+INT (RND*50)+21
1950 POKE (f+xq+yq*8+zq*64),0
1955 LET KLI=0
1960 LET kl=kl-1
1970 CLS
1980 GO TO 130
1990 CLS
1991 REM
1992 REM
1993 REM
2000 PRINT "IMPULSE ENGINES"
2010 PRINT "
2020 LET 0=PEEK (F+X0+Y0*8+Z0*64
)
2030 IF 0=10 OR 0=9 THEN PRINT "
ORBIT SUSTAINED": LET SC=SC+(INT
(RND*10)+1): GO TO 130
2040 IF 0<>6 AND 0<>16 THEN PRIN
T "THERE IS NOTHING TO ORBIT": G
O TO 130
```

```
2050 PRINT "PREPARE FOR DOCKING
PROCEDURE"
2060 PRINT "USE THE CURSOR KEYS(
5,8) TO";"TO MOVE YOUR SHUTTLE"
2070 PRINT "PRESS SPACE TO START
."
2080 LET 0$=INKEY$: IF 0$<>" " T
HEN GO TO 2080
2090 LET X5=INT (RND*10)+5: LET
Y5=0
2120 LET X1=INT (RND*10)+5: LET
Y1=INT (RND*10)+5
2130 CLS
2140 PRINT AT Y1,X1;"●";AT Y5,X5
;"E"
2150 LET A$=INKEY$: IF A$="5" TH
EN LET X5=X5-1
2160 IF A$="8" THEN LET X5=X5+1
2170 LET Y5=Y5+1
2180 IF Y5=18 THEN GO TO 130
2190 IF X5<0 THEN LET X5=0
2200 IF X5>19 THEN LET X5=19
2210 IF X5=X1 AND Y5=Y1 THEN GO
TO 2230
2220 LET EN=EN-1: GO TO 2130
2240 CLS
2250 PRINT "DOCKED."
2260 LET EN=6000: POKE (F+X0+Y0*
8+Z0*64),0
2261 LET SH=SH+2000: IF SH>4000
THEN LET SH=4000
2262 PRINT AT 20,0;"ENERGY-"
2265 PRINT AT 21,0;: FOR A=0 TO
31
2266 BEEP .01,A: PRINT AT 21,A;"
▮": BEEP .01,A-5: PRINT AT 21,A;
OVER 1;"▮"
2267 NEXT A
2270 FOR A=0 TO 5: LET U=USR 620
00: NEXT A
2280 IF XQ=XH0 AND Y=YH0 AND Z=Z
H0 THEN GO SUB 8920: GO TO 3500
2290 LET I=1
2300 LET D=INT (RND*10)+1
2310 LET O(D)=O(D)-5: IF O(D)<0
THEN LET O(D)=0
2320 LET I=I+1: IF I<6 THEN GO T
O 2300
2330 LET SH=SH+100+INT (RND*400)
: IF SH>4000 THEN LET SH=4000
2340 GO TO 130
2341 REM
2350 REM
2351 REM
2355 IF PEEK (f+xq+yq*8+zq*64)<>
20 THEN FLASH 0: CLS : GO TO 236
0
2370 PRINT "++++++++++++++++++++
++++++++++"
2380 PRINT AT 2,0;"++++++++++++
++++++++++++"
2395 LET TIME=TIME+PEEK 23673
2420 FOR i=0 TO 21: PRINT AT i,0
;"*";AT i,31;"*": NEXT i: PRINT
#0;AT 0,0;"*";#0;AT 0,31;"*";
2450 PRINT AT 19,18;"SCORE=";sc;
```

```
AT 20,7;"ENERGY=";en;" ";AT 20,1
9;"TORPEDOES ";pn;
2460 PRINT AT 21,1;"SHIELD=";SH;
: PRINT #0;AT 0,1;" QUADRANT=";x
q;yq;zq;" KL=";kl;" PL=";mp+gp;"
"
2465 IF PEEK (F+X0+Y0*8+Z0*64)<>
20 THEN PRINT AT 21,15;"KL.EN.="
---"
2470 LET b$="GREEN": IF co=2 THE
N LET b$="YELLOW"
2480 IF co=3 THEN LET b$="RED"
2490 PRINT AT 18,10;"CONDITION="
;b$;
2500 PRINT AT 19,1;"STARDATE=";T
IME;
2510 PRINT AT 1,1;"COMMAND=";
2520 IF PEEK (f+xq+yq*8+zq*64)>2
0 THEN LET KLI=1: GO SUB 3130
2530 LET d=INT (RND*10)+1: LET o
(d)=o(d)-2: IF o(d)<0 THEN LET o
(d)=0
2540 LET en=en-50-co*50+50: IF e
n<0 THEN GO TO 3480
2550 LET d=ABS (xq-xbl)+ABS (yq-
ybl)+ABS (zq-zbl)
2560 IF INT (RND*d*5)=1 THEN GO
SUB 3750
2570 IF xq=xbl AND yq=ybl AND zq
=zbl THEN GO TO 3490
2580 RETURN
2585 REM
2586 REM
2587 REM
2590 DIM o(10): LET f=60000
2600 LET U=USR 60500
2610 LET kl=20+INT (RND*(SKILLA+
3)): LET gp=INT (RND*10)+6: LET
mp=INT (RND*10)+6
2620 FOR i=1 TO kl: GO SUB 2690:
POKE (f+x+y*8+z*64),40+INT (RND
*20)+1: NEXT i
2630 FOR i=1 TO mp: GO SUB 2690:
POKE (f+x+y*8+z*64),20: NEXT i
2640 FOR i=1 TO gp: GO SUB 2690:
POKE (f+x+y*8+z*64),19: NEXT i
2650 FOR i=1 TO SKILL+2: GO SUB
2690: POKE (f+x+y*8+z*64),16: NE
XT i
2660 LET xhq=x: LET yhq=y: LET z
hq=z
2670 GO SUB 2690: POKE (f+x+y*8+
z*64),17: LET xbl=x: LET ybl=y:
LET zbl=z
2680 RETURN
2690 REM
2691 REM
2700 LET x=INT (RND*8): LET y=IN
T (RND*8): LET z=INT (RND*8)
2710 IF PEEK (f+x+y*8+z*64)<>0 T
HEN GO TO 2700
2720 RETURN
2740 LET D=I
2750 RESTORE 2760
2760 DATA "DAMAGE CONTROL","ALER
T","REPAIR","WARP DRIVE","IMPULS
E ENGINES","PHASER BANK","PHOTON
 TORPEDOE","SCIENCE COMPUTER","S
HIP COMPUTER"
2770 FOR T=1 TO D: READ 0$: NEXT
T
2780 PRINT 0$;"=";O(D)
2790 RETURN
2791 REM
2792 REM
2793 REM
2800 BORDER 0: PAPER 0: INK 7: C
LS
2801 PLOT 255,0: DRAW 0,175,-PI:
FOR A=0 TO 16: PRINT AT 10,A;"🚀
": BEEP .01,A: BEEP .01,A-5: P
RINT AT 10,A;" ": NEXT A: PRIN
T AT 10,A;"🛸": FOR T=0 TO 5: F
OR C=1 TO 7: PRINT AT 10,A; INK
C;"🛸": NEXT C: NEXT T
2820 RANDOMIZE : LET PEOPLE=INT
(RND*20): LET SIZE=INT (RND*10)+
100: LET ATMOS=INT (RND*5): LET
WAT=INT (RND*100): LET TECH=INT
(RND*18)
2830 PRINT "LIFE=";PEOPLE;" BILL
ION"
2840 PRINT "RADIUS=";SIZE;" K"
2850 RESTORE 2860
2860 DATA "CORROSIVE","DENSE","N
ORMAL","THIN","NONE"
2870 FOR I=0 TO ATMOS: READ B$:
NEXT I
2880 PRINT "ATMOSPHERE:";B$
2890 PRINT ;WAT;"% WATER"
2900 PRINT "TECH LEVEL=";TECH
2910 LET SC=SC+TECH-8+PEOPLE-10
2920 RETURN
2940 FOR T=1 TO 50: PRINT AT 1,1
5; INK RND*7;"🚀": BEEP .005,50
-T: NEXT T: PRINT AT 10,0;"
2945 PRINT AT 1,15;"
2955 FOR A=0 TO 2: LET U=USR 620
00: NEXT A.
2960 RETURN
3129 REM
3130 REM
3131 REM
3135 IF KLI=0 THEN RETURN
```

```
3140 LET 0=PEEK (F+X0+Y0*8+Z0*64
)
3145 PRINT AT 5,1;"
                    ": INVERSE 1: PL
OT 60,35: PLOT 190,35: DRAW -65,
118: PLOT 60,35: DRAW 65,118: IN
VERSE 0
3150 IF 0<41 THEN LET W=(0-20)*5
3155 IF 0>=41 THEN LET W=(0-40)*
5
3160 PRINT AT 21,15;"KL.EN.=";0-
21: LET KLI=1
3170 LET X1=5: LET Y1=0
3181 PRINT AT 10,12;"WARNING";AT
 11,12;"       ": PRINT AT 13,8;
 FLASH 1; BRIGHT 1;"KLINGON WARS
HIP"
3185 FOR T=0 TO 2: LET U=USR 610
00: NEXT T
3190 PLOT 60,35: PLOT 190,35: DR
AW -65,118: PLOT 60,35: DRAW 65,
118
3200 POKE 63006,10: POKE 63025,2
8: LET U=USR 63000
3210 IF CO=1 THEN IF INT (RND*2)
=0 THEN GO TO 3280
3270 RANDOMIZE : IF INT (RND*3)<
>0 THEN RETURN
3280 IF SH<0 THEN GO TO 3430
3285 POKE 63006,5: POKE 63025,28
: LET U=USR 63000
3290 IF W>RND*100+CO THEN GO TO
3350
3300 PRINT AT 5,1;"YOU HAVE SUFF
ERED A MINOR HIT": LET U=USR 620
00
3310 LET SH=SH-90-INT (RND*60):
LET EN=EN-50-INT (RND*50)
3320 IF SH<0 THEN GO TO 3430
3330 LET D=INT (RND*10)+1: LET O
(D)=O(D)+1: PRINT AT 21,8;SH#
3340 RETURN
3350 PRINT AT 4,1;"YOU HAVE SUFF
ERED A MAJOR HIT": FOR T=0 TO 1:
 LET U=USR 62000: NEXT T
3360 LET SH=SH-200-INT (RND*100)
: LET EN=EN-100-INT (RND*100)
3380 LET I=1
3390 LET D=INT (RND*10)+1
3400 LET O(D)=O(D)+INT (RND*3)
3410 LET I=I+1: IF I<6 THEN GO T
O 3390
3420 PRINT AT 21,8;SH: RETURN
3425 REM
3426 REM
3427 REM
3430 LET B$="whilst doing battle
 against the Klingons"
3450 CLS : LET m$="  On Stardate
 "+STR$ INT (time/1000)+", "+b$+
", the Enterprise & crew were lo
st to space."
3460 GO SUB 3940
3470 GO TO 3640
3480 LET b$="after depleting it'
s energy supply": GO TO 3440
3490 LET b$="after flying into a
 Black hole": GO TO 3440
3510 POKE 23692,255: LET m$="  A
dmiral Fitzpatrick here,,,   Cap
tain, after studying your log an
d data tapes, and taking into ac
count that you were "
3520 IF time<8000 THEN LET m$=m$
+"on time": LET sc=sc*1.5: GO TO
 3530
3525 LET m$=m$+"late": LET sc=sc
/1.5
3530 LET m$=m$+"  and that you "
3540 IF kl=0 AND mp=0 AND gp=0 T
HEN LET m$=m$+"completed": LET s
c=sc*2: GO TO 3550
3545 LET m$=m$+"failed": LET sc=
sc/2
3550 LET m$=m$+" your          mis
sion."
3560 GO SUB 3940
3570 PRINT '''
3580 LET m$="I am going to recom
mend that you be "
3590 RESTORE 3600
3600 DATA "Promoted",2000,"Decor
ated",1500,"Reassigned",1000,"Dem
oted",500,"Resigned",250,"Execut
ed",-1
3610 READ b$,s: IF sc<s THEN GO
TO 3610
3620 LET m$=m$+b$+" after gettin
g a     total score of "+STR$ INT
 sc
3630 GO SUB 3940
3640 PRINT '''
3645 GO SUB 9500
3650 PRINT "Another Game (y/n) ?
"
3660 LET a$=INKEY$: IF a$="Y" TH
EN RUN
3670 IF a$="N" THEN CLS : STOP
3680 GO TO 3660
3750 REM
3751 REM
3755 REM
3760 LET X0=X0+(X0<XBL)-(X0>XBL)
3770 LET Y0=Y0+(Y0<YBL)-(Y0>YBL)
3780 LET Z0=Z0+(Z0<ZBL)-(Z0>ZBL)
3810 PRINT AT 4,12;"WARNING"
3820 PRINT AT 5,12;"
3825 PRINT '
```

```
3830 PRINT AT 7,1;"The Enterpris
e is being drawn": PRINT AT 8,1;
"through space towards a Black"
AT 9,1;"hole."
3835 LET dur=.02: FOR t=1 TO 2:
LET dur=dur-.002: FOR q=10 TO 12
: LET U=USR 61000: OUT 254,q-10+
(t-5): NEXT q: NEXT t: OUT 254,1
5
3836 BORDER 0
3837 LET PA=0
3840 RETURN
3900 REM
3901 REM
3902 REM
3950 LET a$=""
4000 FOR a=1 TO LEN a$
4010 PRINT #2;CHR$ (1);a$(a);
4020 NEXT a
4030 RETURN
4040 REM
4041 REM
4042 REM
4110 CLS : PRINT "Commands Are:-
"
4120 RESTORE 5110: FOR a=0 TO 9:
READ a$: PRINT a$: NEXT a: GO TO
 130
5000 CLS : IF PA=1 THEN PRINT "A
LREADY BEEN USED": GO SUB 8900:
GO TO 130
5002 LET PA=1: PRINT "PANIC BUTT
ON OPERATED": LET KLI=0
5005 PRINT "STAND BY FOR WARP":
FOR T=0 TO 100: NEXT T: LET X=IN
T (RND*8): LET Y=INT (RND*8): LE
T Z=INT (RND*8): LET SPEED=1: GO
 TO 673
5100 RESTORE 5110: FOR T=0 TO PE
EK-48: READ Z$: NEXT T: PRINT AT
 10,2; BRIGHT 1; INK 1;PEEK-48;"
-";Z$: RETURN
5110 DATA "DONKEY LEVEL","SIX MO
NTH OLD BABY LEVEL","COWARD LEVE
L","DAMSEL IN DISTRESS LEVEL","E
ASY LEVEL","NOT SO EASY LEVEL","
DEFINITELY NOT SO EASY LEVEL","P
RETTY WICKED LEVEL","WHIPLASH LE
VEL","SUPERMAN LEVEL"
7901 PRINT AT 3,1;"
8002 FOR T=1 TO 8: READ DUR,NOTE
: BEEP DUR,NOTE-12: NEXT T
8004 NEXT A
8005 IF KLI=1 THEN LET KLI=0
8006 RETURN
8010 DATA .1,11,.1,11,.8,16,.05,
11,.05,16,.05,11,.05,16,1,20
8020 POKE 23692,255: PRINT AT 21
,0: PRINT : PRINT TAB 10; FLASH
1;"GAME OVER": RESTORE 8030: FOR
 T=1 TO 20: READ NOTE,DUR: BEEP
NOTE/3,DUR: NEXT T
8025 RETURN
8030 DATA 1,12,.5,12,.5,11,1,9,1
,9,.45,7,.45,9,.45,7,.45,5,.45,4
,.45,2,.45,4,.45,5,1,7,1,0,1,2,1
,5,1.5,4,.5,2,1,0
8100 DEF FN a(n)=(CODE a$(n)-48
AND CODE a$(n)<58)+(CODE a$(n)-5
5 AND CODE a$(n)>64)
8105 LET a$="F31110D0260A3A485C1
F1F1F0EFEEE10ED794310FE2520F4101
520E8FBC9"
8110 FOR T=1 TO LEN A$ STEP 2: P
OKE 63000+T/2,16*FN A(T)+FN A(T+
1): NEXT T
8120 RETURN
8900 LET a$=" Press any key to c
ontinue.... "
8901 FOR T=1 TO 64
8902 LET a$=a$(2)+a$(3 TO 32)+a$
(1)
8903 PRINT AT 21,0; INK 4;A$
8905 IF INKEY$="" THEN NEXT T
8906 RETURN
8920 RESTORE 8930: FOR T=1 TO 20
: READ NOTE,DUR: BEEP NOTE/3,DUR
: NEXT T
```

```
8925 RETURN
8930 DATA 1,12,.5,12,.5,11,1,9,1
,9,.45,7,.45,9,.45,7,.45,5,.45,4
,.45,2,.45,4,.45,5,1,7,1,0,1,2,1
,5,1.5,4,.5,2,1,0
9030 GO SUB 8100
9050 RESTORE 9060
9060 DATA "61000",6,255,197,6,25
5,120,211,254,15,251,193,15,245,
201,256,"62000",240,6,1,197,33,1
5,0,17,40,0,229,205,181,3,225,17
,16,0,167,237,90,125,254,255,32,
237,193,16,230,251,201,0
9061 DATA 256,"62500",1,1,255,33
,255,0,17,1,0,229,213,197,205,18
1,3,193,209,225,125,145,111,16,2
42,201
9062 DATA 256,"63500",62,0,17,0,
88,6,24,197,6,32,18,19,16,252,19
3,16,246,201
9063 DATA 256,"60800",243,33,96,
234,1,88,2,22,0,114,35,11,120,17
7,194,136,237,251,201
9064 DATA 256,USR "A",60,126,255
,255,255,255,126,60,60,66,129,12
9,129,129,66,60,255,255,192,255,
255,192,255,255,198,198,216,248,
248,216,198,198,255,0,0,0,0,0,0,
0,0,48,120,255,121,48,0,0,34,115
,122,254,127,15,0,0
9065 DATA 1,227,230,131,129,255,
171,255,100,252,5,247,255,255,24
0,96,64,224,224,240,224,0,0,0,0,
0,240,80,248,252,214,252,24,60,1
26,255,231,231,255,60,16,56,124,
124,254,214,145,56,0,0,12,30,255
,30,12,0,0,16,48,127,127,48,16,0
9066 DATA 252,254,171,254,252,19
2,128,0,255,129,129,129,129,129,
129,255,0,0,0,0,0,0,0,0,0,255,25
5,32,32,255,127,255,0,0,15,10,31
,53,107,63,0,0,0,0,0,0,0,0
9069 DATA 256,"END"
9070 READ A$: IF A$="END" THEN P
OKE 63503,32: POKE 63508,21: RET
URN
9075 LET LOC=VAL A$
9080 READ DATA: IF DATA<>256 THE
N POKE LOC,DATA: LET LOC=LOC+1:
GO TO 9080
9090 GO TO 9070
9100 READ AAA: READ BBB: FOR T=1
 TO AAA: READ CCC: READ DDD: BEE
P CCC/BBB,DDD: NEXT T: RETURN
9110 DATA 11,10,2,0,2,0,1,0,2,0,
2,4,1,2,1,2,1,0,1,0,1,-1,3,0
9120 DATA 43,5,1/3,2,1/3,2,1/3,2
,2,7,2,14,1/3,12,1/3,11,1/3,9,2,
19,1,14,1/3,12,1/3,11,1/3,9,2,19
,1,14,1/3,12,1/3,11,1/3,12,2,9
9130 DATA 2/3,2,1/3,2,2,7,2,14,1
/3,12,1/3,11,1/3,9,2,19,1,14,1/3
,12,1/3,11,1/3,9,2,19,1,14,1/3,1
2,1/3,11,1/3,12,2,9,1,14,7,19,1/
3,19,1/3,19,1/3,19,1/2,19
9510 FOR t=1 TO 10: IF sc<h(t) T
HEN NEXT t: GO TO 9530
9515 IF t<>10 THEN FOR e=10 TO t
+1 STEP -1: LET h$(e)=h$(e-1): L
ET h(e)=h(e-1): NEXT e
9520 GO SUB 9550
9525 LET h(t)=sc
9530 CLS : PRINT PAPER 1; BRIGHT
 1; INK 0;"          Hi-Score Tab
le          ": FOR t=1 TO 10: IF
h(t) THEN PRINT AT 1+2*t,4; INK
(RND*6)+1;h$(t);"  ";h(t): NEXT
t
9535 RETURN
9550 CLS : PRINT FLASH 1; BRIGHT
 1; INK 1; PAPER 4;"Your Score h
as Been ranked No.";t
9560 INPUT "NAME PLEASE "; LINE
h$(t): RETURN
```

Review

Starcade's SAVAGE POND

1 PLAYER **16K**

Savage Pond leaves the reviewer caught between two extremes. On the one hand the review should flow easily because the game is such a joy but on the other it is difficult because you cannot make comparisons with other games. Savage Pond is unique.

It is becoming increasingly rare to find a totally original game among the growing wealth of Atari software but Gwyll Jones of Starcade has come up with a real winner. This is as far removed as you can get from the world of aliens, guns and violence yet it maintains all of the excitement and edge of the seat involvement of the classic arcade games. The game is set in the real world, the world of Nature that you or I could see in the countryside every day if we were alert and sensitive enough. In every stream and pond across the country there is a battle for life as fierce and as demanding as any defence of the earth from alien invasion. Whilst we sit comfortably at home battling off imaginary monsters, tiny creatures fight real battles against real enemies in the most savage of environments - Nature itself.

Savage Pond allows you to control the destiny of a tiny tadpole in a village pond and see him through his journey to adulthood to become a handsome frog. You must breed as many frogs as possible to build a healthy colony. This may not seem as exciting as battling off invading aliens but believe me, the suspense and excitement of achieving your goal is just as strong as in any other arcade style game.

The sense of excitement is first awakened by simply reading the instruction manual which you should do before commencing play. The playing instructions are given in narrative form and the booklet finishes off with detailed descriptions of all the characters you will encounter. These are serious and accurate descriptions of pond life, including latin names, and are a novel and interesting touch. Savage Pond is after all about the real world.

In your pond are lots of amoeba waiting to be ingested whilst on the floor of the pond are deadly hydra with poisonous tentacles. Overhead a dragon fly flits lazily by and lays an egg which sinks slowly to the bottom. Juicy worms fall into the water from time to time and you must eat these to journey along the evolutionary trail. On the bed of the pond are three eggs of frog spawn from which hatch your tadpoles to commence their grim battle through life. As well as eating worms and amoeba, you must stop the dragonfly eggs from reaching the floor of the pond where they will hatch out into dragonfly nymphs. Nymphs eat tadpoles and there is very little chance of escape. Once you have managed to eat five of those juicy worms, a beetle larva appears and if you can eat it quickly, you progress along the evolutionary trail and further hazards will be introduced to the pond. These include deadly freshwater jellyfish, water fleas, a water spider and Mother Nature's deadliest enemy - Man - who uses the quiet pond to dump deadly radioactive waste.

The game ends when three tadpoles have died but if you manage to breed a frog, an extra egg will be laid when your last tadpole dies. A female frog will bounce onto the screen to mate with your proud frog on his little island and a new egg will be laid. Watch out for the cheeky wink of Mr Frog as he embraces his lady friend. At higher levels you can control the frog as well as the tadpoles to kill off the dragonfly and fight off vicious bees.

On screen there is plenty of colour and movement. Amoeba pulsate, jellyfish bob up and down and the dragonfly buzzes overhead. Worms wriggle to the bottom and your tadpole swishes his tail through the water without respite. The movement of the tadpole is quite amazing and unlike any player movement I have seen on any other game. It is a very accurate representation of darting and flitting underwater movement.

Savage Pond is a real joy. A totally unique concept, well thought out and superbly programmed. Whilst a far cry from the usual arcade action it retains all of the excitement. It is an ideal family game and children and adults alike will marvel at the graphics and storyline. Not much more I can say except that you will not find such an original and compelling game anywhere else. Buy it and sit back proudly knowing that one of the most original games ever written for the Atari was written here in Britain by a young programmer who must surely have a bright future. ●

Piracy~Profit or Peril

Software piracy is currently costing the industry millions of pounds each year. Stuart Dollin looks at the implications of this growing problem.

You're not the sort of person who goes around pinching other people's property, are you? Of course not. After all that's wrong, isn't it? You'd never do anything like that would you? Or would you?

Well don't sit there looking quite so smug, because if you've ever copied a computer program from a friend's cassette then you're just as much a villain as if you'd nicked it fom your local branch of Smiths.

'But one little copy can't hurt', I hear you say. Perhaps on its own your little copy might be pretty insignificant; but when its added to all those other 'little copies' up and down the country it starts to become very serious.

Have you ever thought about what it takes to get a good computer game cassete into the shops? First of all someone has to write the program. It will probably take him (or her) several weeks to do so, and while they are busy beavering away at their computer, they're not actually earning any money. Obvious innit! You can't sell cassettes until you've actually written the programme.

In the meantime the poor programmer has got to live; and very simply it's the money coming in from programs already on sale that keep people going while they develop new ones. Trouble is it's those selfish people who can't be bothered to buy their own programs, but instead copy them from friends that are stopping the flow of money back to the software companies. ▶

Bruce Everiss is Operations Boss of *Imagine*, one of the top program, companies, and he reckons that a good game will sell up to 200,000 copies. He also says that every one of those 200,000 will be copied around 10 times - yes that's a potential 2,000,000 copies that could be sold. Just imagine (sorry about the pun) how many new games they could develop if they actually sold that number!

In fact that is wildly optimistic and out of those 10 people who copy the tapes only about 2 or 3 would actually buy the cassette if copying were impossible. Even on these terms it would make a tremendous difference.

The crazy thing is that as a game goes up the software chart, fewer and fewer people actually buy the things. One computer users' club actually ran off 2000, yes 2000 copies of one game in an evening while, in just a few weeks one pirate in the London area did no fewer than 130,000 copies of Imagine tapes.

You don't need to be a Maths genius to work out that this is 65 per cent of all sales. Take away those sales and there's no money to develop new games.

But aren't all those software houses big and strong and can stand that sort of competition? Well, quite apart from the fact that this sort of piracy is illegal, no they aren't big and strong, and no they can't stand it. Why should they?

You'd be pretty annoyed if you'd sweated over a hot computer for weeks and weeks to produce the most brilliant game ever invented and find that Joe Bloggs down the road bought your first cassette and is now running off copies for his mates so they don't come to you to buy the game.

Imagine have already warned that they will put less and less effort into producing games software to sell in this country and concentrate on the United States.

"Over half our work is for the big American computer companies," says Bruce Everiss. "We get paid as soon as the work is done so there is little risk. The British market is different. There's not a lot of point in putting a lot of time and money into developing new games, just to find that a few people are buying the games and the rest are illiegally copying them. After all, our programmers need to be paid just like anyone else".

Because there are other people who will buy programmes from companies like Imagine lock, stock and barrel, there isn't a lot of incentive for them to produce new games to sell in Britain.

Companies like Commodore, Atari and others in the States are just dying to buy up everything that our super-skilled British programmers can churn out. Which means that, in the end, you, me and everyone else who loves playing games on his home computer is suddenly going to find that new programs are going to be appearing far less often -and they may not even be as good as those we've come to like.

Why spend weeks and months developing a program you know is going to be ripped off as soon as it hits the streets? Why not just cobble something half-way decent together and get it out quick before it's pirated to death?

Ah, you may say, then why not bring the price down? Well £5.50 for a duplicated cassette is not expensive when you start to think what exactly goes into it. First there's the time of the programmer himself and his fee -just like a musician or actor or whatever appears in a film, or the author of a book, the programmer gets a fee or royalty from every copy of his program sold. Then there's the cost of actually making the copy itself: the blank tape; the information card and so on; then there's advertising - it's not much good making a brilliant game if no-one knows about it; and finally there's distribution -getting the cassette into the shops. Add on the shopkeeper's profit, without that he can't afford to run a shop, and you soon hit the price you pay.

If you were to reduce the number of copies sold, this would hit all the links in the chain with the end result of having just a few shops selling second rate gear. You're not going to trek for miles and miles to the nearest video shop are you - that's another cause of people pirating software tapes.

If you don't believe me just be warned. The pirating of video tapes has nearly wiped out the video business in several countries. The results have been that new films weren't being

released on tape because the companies couldn't afford to buy or make them. This meant that the video shops went out of business because they didn't have anything to sell, which meant that the poor old video fan ended up with no films and no shops to go to. It could happen in just the same way to the computer software in the UK and very soon.

Of course, you could say that if the companies were really bothered then they'd put the law on those people who were breaking it. And so they could, except that they have to sue people individually. If you copy, or perhaps we should say rip off a tape made by say Quicksilva or Imagine, they can only sue you for loss of profit which is around 10 to 20p.

It costs lots of money to take a case to court - certainly several thousand pounds - all for the sake of walloping one person. Even if the company succeeds (and don't forget that they need to produce evidence and prove a case) they would need to do the same thing several thousand times before it had any impact.

The answer in the end, according to Bruce Everiss, is to issue the programs on ROM cartridges. Everyone knows how much the plug-in ROM cartridges for the Atari VCS and Intellivision are - between £20 and £30. The great advantage is that they need a computer to get any information out of them which means that you build anti-copying instructions into the program. The disadvantage is that they are relatively expensive to make: ROM chips are considerably more expensive than magnetic tape especially the bigger ones necessary for the more complicated games. A worldwide computer chip shortage doesn't exactly help matters either.

So stealing other people's ideas is not only wrong, in the end it's going to be you, the computer user, that suffers as well as affecting everyone else in the business.

Basically, if people go on thinking it's clever to copy tapes rather than buy their own, the supply of new games will dry up. Computer shops will either close or turn part of their businesses over to other things. The magazines that you buy will start to get into difficulties because there will be far fewer products to write about and less advertising money to support them, and the only software that is available will be on ROM cartridges at high prices for those machines that happen to have ROM ports. In other words misery for everyone.

But, as I said at the start, you're not a thief are you? Don't encourage your friends to be by loaning out your games cassettes!

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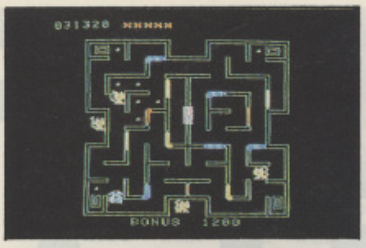
1. 

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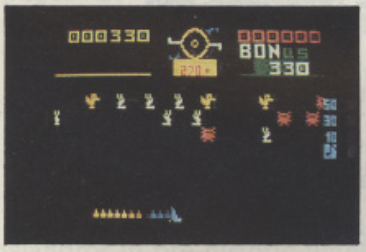
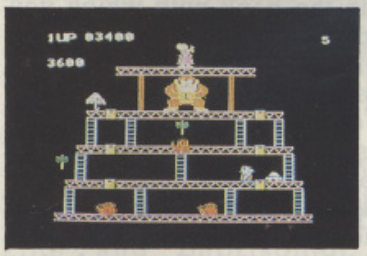
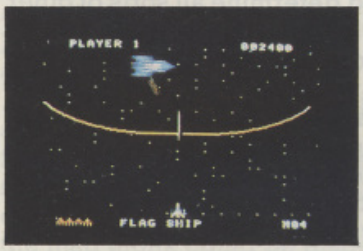
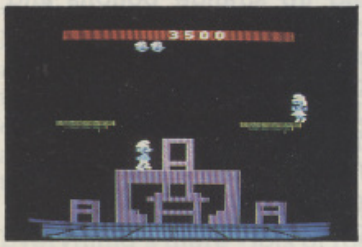
5. 

6. 

7. 

8. 

CBS ELECTRONICS

ENTRY FORM

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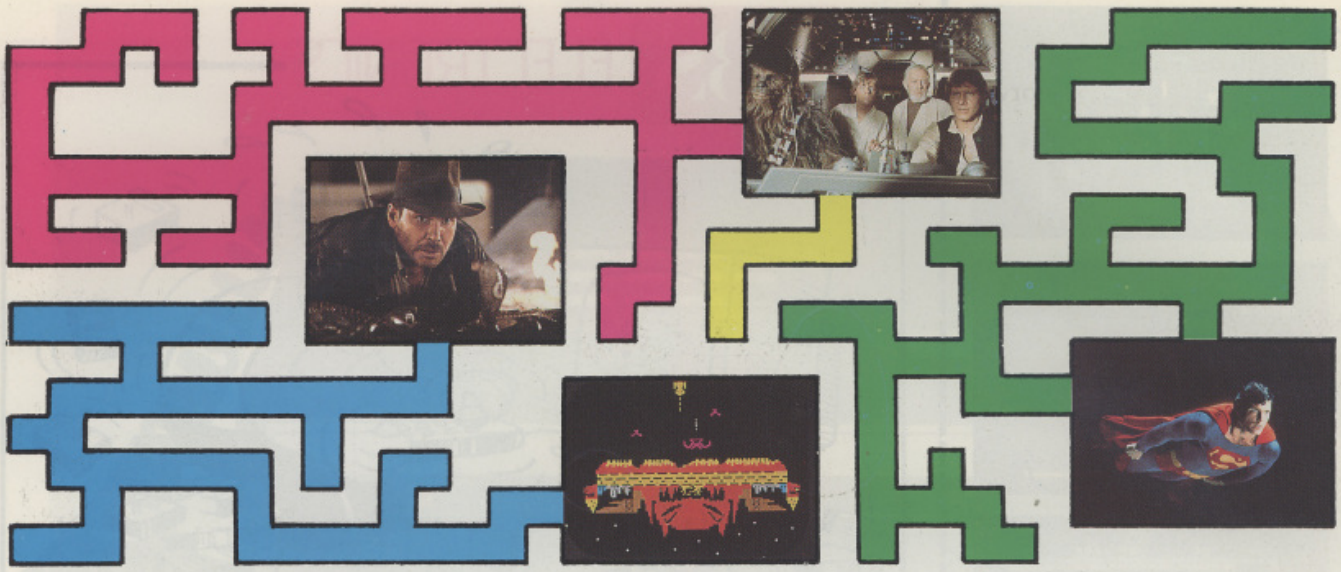
Game screens. (Enter number)

Donkey Kong ... 6 ..... Space Panic ... 3 .....
Smurf ..... 8 ..... Mouse Trap ... 1 .....
Turbo ..... 4 ..... Zaxxon ... 2 .....
Carival ..... 5 ..... Space Fury ... 7 .....



The Adventure Game Maze

Feature

The adventure game is now almost as popular as the familiar shoot-em-up space games.

If you thought an afternoon was quite long enough to polish off a game of Monopoly, there is a small band of enthusiasts who think nothing of spending days playing out their fantasies according to a precise set of rules - and now the word is spreading to computer gamesters.

But what exactly is an adventure game? It all started way back in 1974 when an American company, Tactical Studies Rules (TSR) published *Dungeons and Dragons*. Already there had been groups of enthusiasts re-creating the adventures found in books like *The Hobbit* and *Lord of the Tings*. They used sets of rules based on the traditional wargames played by armchair generals since before the start of the century.

Dungeons and Dragons was such a success that the book sold out within a year and despite many imitators, TSR brought out a revised version followed by Advanced D & D and then Expert D & D.

This was 1979 and had it not been for the explosive growth in home computer owners, D & D might have just remained a rather obscure craze.

However, put the game into a computer and you can play it more realistically - the machine reacts to your moves instantly, it has an element of unpredictability and best of all you can actually see your adversaries and the various locations on the screen.

Dungeons and Dragons was played very much to a strict formula and adventure games have all tended to come from that. The idea was to stick to real life as closely as possible. You even had to throw a dice to decide how much money you had in the bank with which you could equip yourself for the adventure.

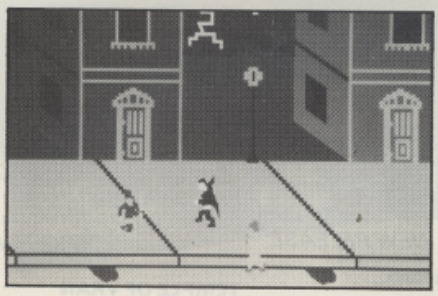
The best bit, at the start at least, was choosing which of the four types of person you were going to be - thief, cleric (that is priest, monk or whatever), fighter or a magic user. A roll of the dice would determine all sorts of other things such as strength, dexterity, wisdom, and so on and by the time you'd finished, your chosen game character had a very full background.

Once inside the adventure world you would meet all sorts of nasty monsters and magicians picking up strange potions and rewards, using up food and water, planning to conserve your energy and strength, until you finally rescued the damsel imprisoned in the innermost dungeon and found the treasure.

The adventures found in most computer adventure games are

usually rather simpler than the traditional *Dungeons and Dragons*. Limited memory space means that certain things such as choice of character attributes (strength, dexterity etc) have to be left out. The compensation is, of course that you can have pictures and sound - and the machine reacts instantly. No need to throw a dice and then look up in a book of rules what to do next.

Surprisingly creating adventure games isn't all that difficult. As a programmer you don't have to worry about difficult things like moving graphics or calculating how to target weapons and create



the routines necessary to work out when you've hit something and when you've missed it.

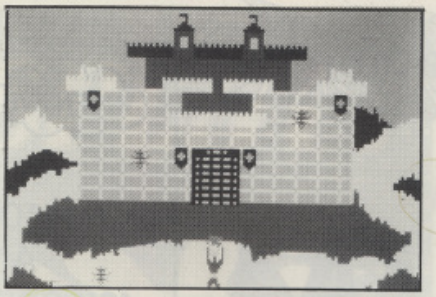
Adventure games are a series of decisions leading to stored pages of text sometimes with graphic illustrations. But where do you start?

Most difficult decision of all has nothing to do with computers -what sort of adventure are you going to create? Will it be in outer space or medieaval England? Will it be on a magic island or in pre-historic times.

Next you must use your imagination to set the scene. Something like this: A long time ago good king Otto had a beautiful daughter and lived in a big castle. One fateful night when all the household were asleep, Franz the Mad Monk killed the king and imprisoned his daughter in a secret room in the heart of the castle, guarded by a dark knight.

The kingdom fell on hard times and the castle was hated and feared. It was rumoured that all sorts of evil things lurked in its corridors and the only way that the mad monk could be disposed was to rescue the princess to lead her people. You, as the adventurer have been given the task of liberating princess and country and your reward will be all the piles of treasure that lie in the castle.

Do you get the picture? Everything's there - lots of rooms,



all unknown, plenty of monsters and a reward at the end of it.

So much for the story writing -the next job is to actually get it into the computer. The basis of an adventure game is a set of rooms. They have doors leading into other rooms - to make life easy we label them North, South, East and West - they may contain articles which you can pick up such as magic potions or weapons and they may contain monsters, friendly or unfriendly.

Your first job, then is to draw up a map of the whole of the game area showing doors, objects and monsters. You can then enter this information into the computer in the form of an array. Say we have 6 rooms in all. That would give you a six by six array - six across because you have doors in four directions plus object plus monster; six down because there are six rooms.

What values do you actually put in the array? It depends - if we are talking about the elements that describe the doors you would have a 0 for no door and the number of the room to which it leads if there is a door. For objects and monsters you enter a code number that describes the particular object or monster represented.

So if the first row of the array was say 0 4 5 0 2 0 we could say that the room had no door leading north, a door leading south into room 4, a door leading east into room 5, no door leading west, an object represented by the code 2, and no monster.

A map helps you to be consistent so that if you step northwards through a door from room A to room B, going back through the door in the other direction brings you back where you started from, i.e. room A.

You can create magic doorways by letting the computer generate random numbers for certain locations in the array. That way you won't know where the magic door leads.

With the basic scenario established, you have then to populate it with all the elements of the adventure - and most important is the object. What are you trying to achieve? In our little example it was the rescue of the princess. You may think that getting to her secret room is enough, or you may decide you

have to find your way out of the castle, as well as in.

Next you work out some hazards. Bottomless pits and spiked floors are good ones and they can go in the same position in the array as the objects.

Finally there are the monsters. You will have to decide how nasty they are going to be, what their weaknesses are, how our hero can overcome them, or indeed how they will overcome him.

All you have to do is put them together! Easier said than done? Obviously you will have to know your way round your own model of computer, but there are plenty of basic principles to follow. If you are going for a text only game, life is relatively easy. The game is very much a set of decisions based on where you find yourself after each move.

Let's start at the beginning. The game plan has to be entered into the machine in the form of an array. Descriptions of each hazard, monster and object are all entered in subroutines, including such information as updating the score according to what you find and adding objects to a list somewhere else in the program that remembers just what you've picked up.

You can now start to plan the game. Imagine you're at the entrance to the castle. You'll need a text statement introducing ▶

you to the adventure telling you all about your various options and leading you into the first room. From the array the program will pick out another text statement describing the room. You input which way you want to go which brings you into the next room. The information in the array will indicate which room you have moved to, and instruct the program to find a text statement to describe this new room. If there's a monster you may choose to fight, in which case the conmputer may randomly decide whether you win or lose, and pick a text statement to inform you either way, or you may choose to flee in which case the computer could put you back in the same room as before or another. It really depends on how you decide to play the game.

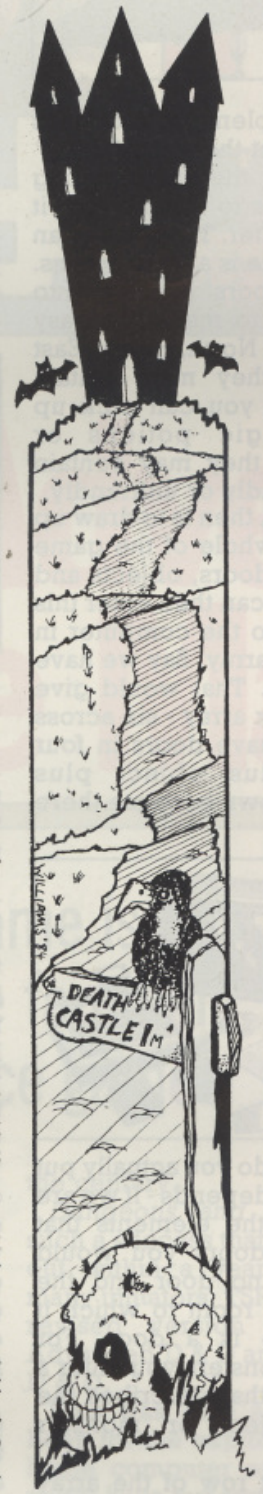
Picking up objects, scoring points, and so on are handled in a similar way. In fact the game consists of nothing more than a basic scenario, some simple descriptions of the hazards and rewards and a lot of print statements. The game is a series of steps. Each time you enter a room you are faced with a set of decisions. Which way do you move, what do you pick up, do you fight the monster? When you make your choice, a print statement will be called up from somewhere in the program telling you what you've done and what your options are. In this way you move from point to point tying together different sections of the program.

Refinements include graphics. Instead of a simple print statment describing a room or monster, or whatever why not have a picture of it or a little tune, or both?

Whatever sort of game you choose to create, don't forget that you can start small, a few rooms, a couple of monsters and build up from it. Again, individual computers work slightly differently so consult your handbook for such things as arrays and keyboard inputs.

Adventure gaming is one of the biggest areas of computer games after the 'zap the aliens' brigade and you don't need to know huge amounts about programming to create games.

After all why buy someone elses ideas when you can create your own! ●



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COMPETITION

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Arcades~ Laser Blockbusters

VIDEO DISC TECHNOLOGY IS NOW BEING APPLIED TO ARCADE VIDEO GAMES. TERRY BADDOO HAS BEEN TRYING OUT THE NEW MACHINES IN THIS, THE FIRST PART OF A NEW REGULAR SERIES DEVOTED TO ARCADE GAMES.

The amusement arcade has long been a feature of British leisure time. On city streets, coastal promenades and funfairs, the arcades sprang up throughout the Fifties and Sixties. They became shelters from the great British climate, heavens for truants, and places where people simply came to pass time and have fun.

As the one-armed bandits, pinball machines and other mechanical games were superseded by video technology, it seemed certain that these pleasure palaces would soon vanish. In fact the reverse seems to have happened. Far from causing a wane in the popularity of amusement arcades, the ever increasing accessibility of home video games has only served to sharpen the appetites of the arcade users. Visit any of these arcades during opening hours, and you can guarantee that most machines will be surrounded by avid players and spectators, skilful, knowledgeable, and eager to challenge everything the manufacturers produce. As we rapidly approach the twenty first century, science fiction is becoming science fact. As a sign of the times, manufacturers of arcade amusement games have moved into the age of the laser, with several new and exciting designs of laser disc entertainment, many based on contemporary movie themes.

Atari's *'Firefox'* is a significant addition to the arcade scene, integrating laser disc live action, film visuals and digital graphics. In lay terms, this technological jargon translates into a high level of realism for the player. After playing Firefox, I felt ready to loop the loop in a Phantom jet, dock a lunar module and sign on for the Jedi, all before lunch.

Named after the Clint Eastwood movie, Firefox places you in the role of a crack pilot with a mission to steal a prototype warplane from the Russians. The mission must be accomplished without the use of Smirnoff or any other

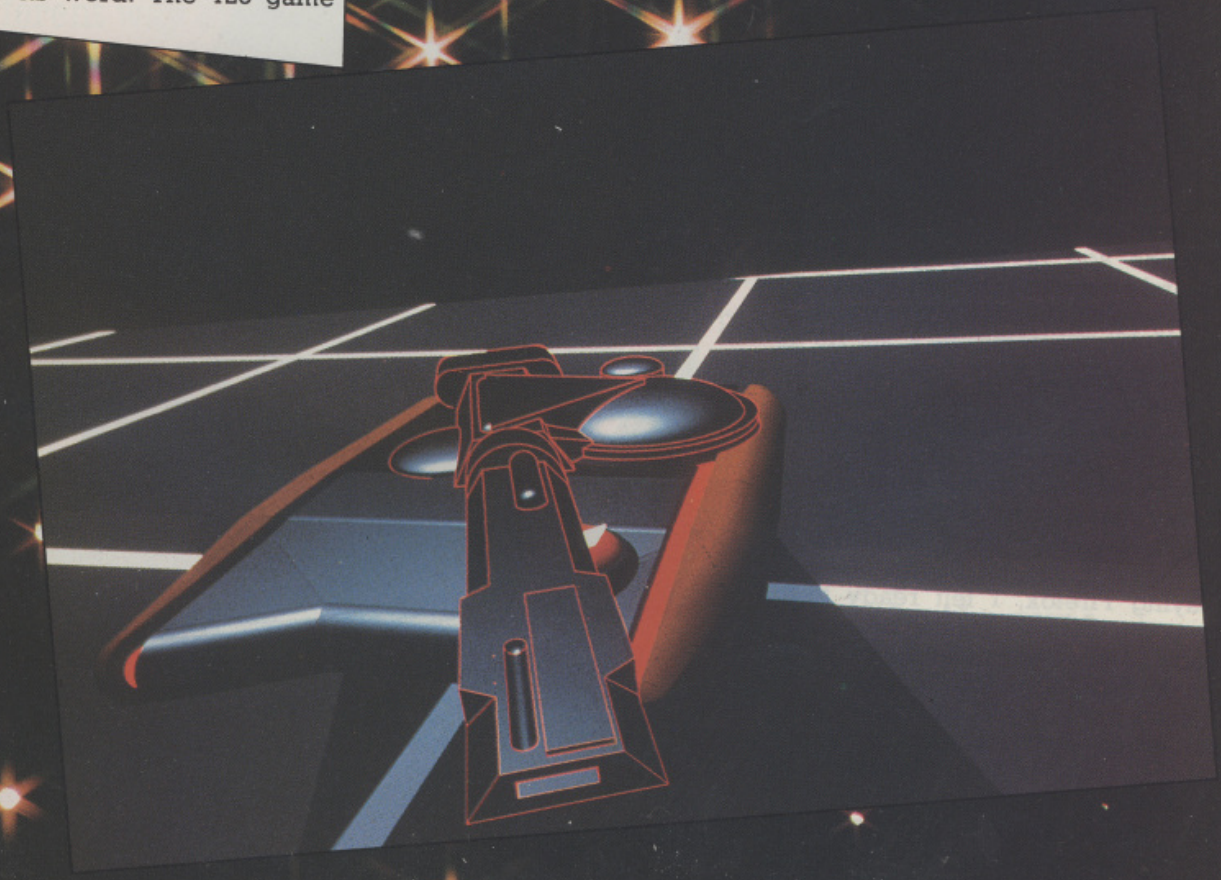
artificial stimulant, and there are one or two obstacles like infra-red radar tracking, MiG fighters and other Firefoxes to avoid. The 'pilot' must also keep a check on fuel level and ammunition status as he/she battles his or her way past opponents. There's a selection of excape routes, a choice of high or low altitude flying, and a highly responsive controller to enhance the feeling of simulated flight. In fact it's so convincing that I half expected an air stewardess to offer me the duty-frees while I was playing. The game is played against a background of changing scenery from the actual film footage, including changes from day to night. The audio effects are extremely realistic, and are accompanied by some of the movie soundtrack and a Clint Eastwood voiceover (every player fets a free cigar and poncho with each game).

The technology behind Firefox is the result of a collaborative effort between Philips of North America and Atari, which has produced a sophisticated laser disc player specifically suited to industrial and commercial uses. The system prides itself on leaving no 'dead spots' in the action, and I must say that the game is true to its word. The 128 game play challenges mean that no two flights are the same, which is a big plus when catering for a public requiring infinite variety. Firefox is definitely ready for take-off.

Bally introduce the intergalactic video game, *'Galaxy Ranger'*. Instead of Silver, this modern-day Lone Ranger rides a spaceship, complete with inevitable laser cannon. The object of the game is to transform yourself into a space sharpshooter, battling your way past the hazards to take on the sinister alien battle cruiser. Destruction of the alien cruiser must be accomplished within a given period of time, but after this time has elapsed, the player can continue on time bonuses earnt from his/her accuracy during the normal game. The special effects aren't as elaborate as those on Firefox, but the game still tests the powers of observation and reflex to the full. (What's the closest thing to silver? The Lone Ranger's bum. Just a little Lone Ranger joke, there.)

Bally also produce the exciting *'Discs of Tron'* video game. Following on from the Walt Disney movie, Tron, this features a new 'Total Environment Cabinet' that 'takes the player into the depths of the Tron world for added realism? As you take over the controls, you become Tron the video warrior, fighting for truth, justice and the micro-chip way, against Sark, the defender of the Master Control Program. I'm not quite sure if the Total Environment Cabinet is particularly significant, as all it basically means is that the chair has a back to it. It's like calling a bath a 'hydro decontamination unit'; it sounds fancy, but it's still just a bath. Anyway despite the over-the-top verbal descriptions, it still looks a lot of fun. Visually it's very exciting, and it's a much more interesting battle of the discs than, say, Duran Duran versus Kajagoogoo. I played one of these games on a recent trip to the US and although I was my customary inept self, it was one of my more favourite wastes of time: definitely worth a scan.

Taito of Japan have arrived with the first laser disc car racing game. Known as the *'Laser Grand Prix'*, this simulates the thrills and spills of real Formula I Grand Prix racing. The laser disc displays



footage from an actual race involving professional drivers, and the authentic controls demand the same kind of skills required to drive Formula I. There is a selection of three kinds of event: the 'Drag Race' course over a simulated 400 metres of the Fuji Speed Way; the 'Trial Race', in which the player makes a circuit around the track, unhindered by competition; and finally the 'Spark Race', where it's all systems go in all-out simulated battle with your competitors. There is a further game offered as a bonus for success in the Spark Race: an extra run in the 'Fantastic Race', a simulated grand final for winners.

Although I haven't had the opportunity to 'test drive' this game as yet, it looks like a lot of fun. There's the chance to challenge your frinds for the fastest lap times, and also the opportunity to boost your ego by taking on a real pro driver, whose skills have been specially built into the machine for you to challenge. Laser disc technology seems to have paved the way for improved realism, and Taito have taken full advantage of this capability.

Hot on the exhaust fumes of Grand Prix comes *'MACH 3'*, from Mylaster. 'MACH', in this context, stands for Military Air Command Hunter, and the game offers two realistic flying games in one unit. Both 'Fighter Raid' and Bomber Run' use actual footage of bombing raids over enemy territories. According to the literature supplied, 'the fast paced live action, superimposed graphics and realistic sound make it feel like it's really happening . . . to you!' It might be argued that this graphic glorification of war is in dubious taste. I mean to say, who wants to feel like they're really blowing away hundreds of innocent people? Anyway, enough of the moralising, I'm late for my bus back to Greenham Common. The game's a big seller in the USA and I'm sure it will do very well here. Perhaps next on the Mylstar drawing board is a game called 'Garotte', where you can 'really feel like it's happening to you'? Enjoy.

Williams of Chicago, Illinois, boast 'the most sophisticated laser disc game ever' . . . but I thought Atari, Mylstar and Taito said that? Oh well, that's entertainment. The *'Star Rider'* is powered by 'the revolutionary Discan System', which is apparently one of the most advanced forms of video disc technology, producing an ever-changing environment in response to the player's actions. For example, as the player steers, the perspective of the road will change in automatic response. A computer-generated background will alter the screen images as the Star Rider motorcyclist races his way around the galaxy. The Discan system also incorporates a three-channel sound system, giving excellent stereo sound effects.

What does all this amount to in real terms? Star Rider offers the player a strange, almost surrealistic, experience, as he/she races through the atmosphere in pursuit of victory at the Cosmodrome. A variety of unexpected hazards reveal themselves to the rider as he/she cruises through the fantasy landscapes of 'Cubitania', 'Hexagonia' and numerous futuristic kingdoms. It's all done in the best possible taste, without any of the death and destruction that seems to characterise so many of the other video games on offer at the present time.

So what difference has the new laser technology made to business in your average city amusement arcade? I talked briefly to one of the managers of the Playland arcade in New York City, and asked his about the general impact of the laser disc games in his particular neighbourhood. He told me, 'Kids today are constantly on the lookout for a more real experience, and the new games seem to cater for these needs. Your average player may not be too well versed in the technology behind the new games, but he knows what he want and what he like. Games featuring Laser discs are new and exciting, and I guess they point the way to the future.'

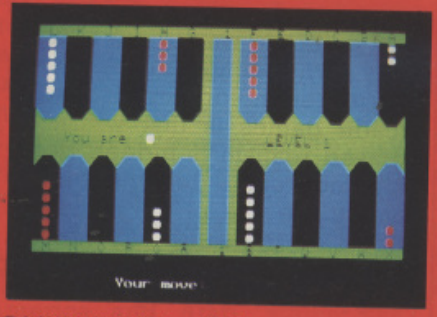
My own feelings on the advent of laser technology in the field of arcade games is that whilst increased realism is indeed desirable, most of the designs seem to involve the use of the same old effects on the same old themes. Someone's invariably blowing up an opponent, or racing him to the death, to the point where we are beginning to face the video game cliché (good guy versus bad guy) all too often. The names change, but to be honest when you've seen one 'Captain Zoom Zoom versus the Klingons', you've seen them all. I feel that laser discs offer a far broader scope for the imagination than is currently being utilised by most of the manufacturers. People today are ready for more sophistication than the current scene can offer. Watch the movie 'War Games' and witness how far the technological outlook of your average player has progressed. The present crop of laser disc games, whilst fun, do not extend the player as far as they should. I don't necessarily believe that games should always seek to educate, but with the rapidly increasing amount of leisure time, we shouldn't forget their educational potential.

We've come a long way from the pierhead penny bagatelle machines of the early part of the century to the laser technology of today. The potential for development seems endless, but as we strive for realism and the utimate, high, how near are we to the Videodrome? After all, this is 1984. ●

A SUPERB RANGE OF GAMES SOFTWARE FOR SHARP MZ-700 SERIES

FROGGER — £6.95

This most popular of arcade games has been totally recreated for the Sharp computer. Superb graphics and as fast as you like from beginner's level up to 'Super-human'. Get each of four frogs over the busy motorway, then hop from boat to raft to log to crocodile until safely home sitting on a lily pad. Terrific fun.



BACKGAMMON — £7.95

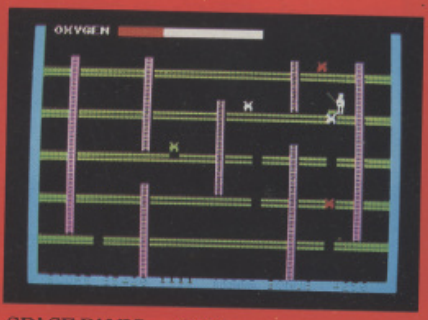
Now available for the MZ-700, this traditional board game can now be played against the computer. Simple to follow instructions for the beginner — higher levels available for the more experienced player.

CHESS — £9.95

Suitable for the rank beginner through to the more experienced player, this Chess program may be used in three different ways.

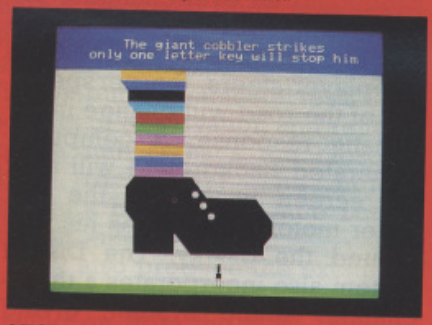
1. As a referee between two players, checking for valid moves, CHECK and CHECKMATE situations.
2. As an opponent with 14 levels of intelligence to match your skills.
3. As a teaching aid when asked to play against itself or show you the best move if you get into difficulties.

Long games may be saved on cassette for completion at a later time and a print-out of all moves made is available.



SPACE PANIC — £7.95

How long can you survive in the multi-storey building filled with alien bugs. This machine-code programme accurately simulates the arcade game where you climb ladders and dig holes to catch the aliens then fill them in again once they are caught. The red ones must fall through one floor, the green ones, two floors and white ones, three floors. Red aliens who have time to dig themselves out get rather cross and become green. PANIC!! Joy stick or keyboard control.



NIGHTMARE PARK — £6.95

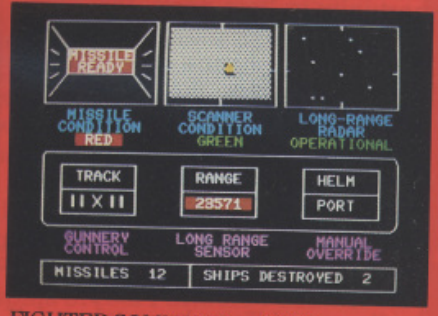
If you have never played this type of game before, you're in for a treat. As you make your way along the intricate pathways to the exit, you are constantly given tasks to perform or games to play. Each of these must be successfully completed before you are allowed to continue. It takes a lot of doing. You must remain quick and alert at all times. A little luck is handy. Amazing graphics and sounds!!!

XANAGRAMS — £9.95

Not only a terrific spelling test but also a great game. You are asked to guess up to five words, represented by blocks on the screen in a crossword format. All the letters that you need are shown on the right of the screen in alphabetical order and the computer will give you the first letter if you ask it nicely. Suits almost any age with 3 skill levels and from 1 to 5 words to be guessed. Really habit-forming!!!

GALAXIANS — £7.95

A high-speed machine-code version of the popular arcade game where the massed space invaders must be cleared from the skies. After a few seconds they will begin to swoop and dive at you, showering you with scatter bombs as they go. The game becomes progressively more demanding as you kill more and more of the marauding aliens. Very entertaining — hours of fun!!! Joy stick or keyboard control.



FIGHTER COMMAND — £6.95

A mission flown completely on instruments where you are pursuing a fleet of ten enemy aircraft fleeing from you. They will show on your long range radar screen and you must manoeuvre your craft to get them within range of your missiles. If you get too near, they will fire at you and warp away to safety. You only have one chance to destroy incoming missiles with your lasers.

LIGHTNING PATROL — £3.95

Choose your rank in the RAF and you are immediately sent on a mission to catch and shoot down ten enemy Mirage jets that are fleeing after their attack on your airbase. You must manoeuvre your plane to get them in your gun-sights whilst they are weaving about the sky to avoid being hit. Limited ammunition and fuel available so efficiency and accuracy are all important to your completion of the mission. Promotion for the successful but poor performances can mean you are asked to leave the air force. Joy stick or keyboard control.

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The Sharp Edge

Nick Bewlay

SHARP HAVE BEEN MANUFACTURING HIGH QUALITY MICROS FOR SOME TIME BUT THEY HAVE RARELY RECEIVED MUCH ACCLIAM FOR THEIR OTHERWISE EXCELLENT PRODUCTS.

It all started in 1915 when Tokuji Hayakawa invented a new type of propelling pencil - he called it the 'Ever-Sharp' pencil. Ten years later Sharp, as they became known, were manufacturing crystal radio sets - the rest, as they say, is now history.

Sharp are now one of the world's largest high technology corporations, involved in numerous fields including video and audio products, office equipment, and manufacturing microelectronic components for everything from

PROFILE

pocket calculators to communications satellites. Sharps involvement in computers began as early as 1964 when they introduced the world's first all transistor desktop calculator; two years later Sharp calculators were manufactured using integrated circuit microchips and by the mid seventies they had developed one of the first wafer-thin LCD display calculators.

The first Sharp computers appeared in 1981 with the first of the now famous MZ series -amongst the first computers to offer built-in screens and data stores, all in one conveniety-sized package. More recently Sharp have introduced the MZ-711 personal computer, a powerful home computer with colour graphics and an impressive 64K of memory.

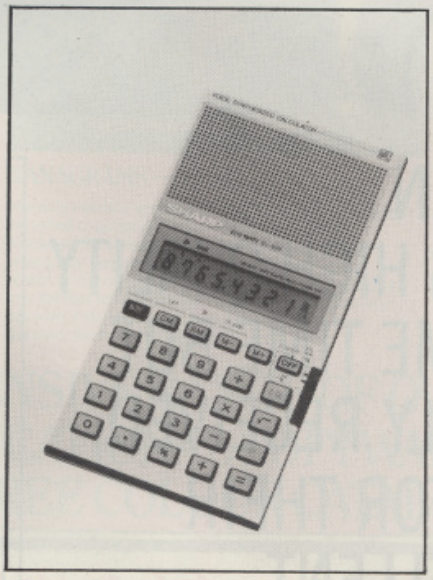
The MZ-700 series computers will be selling for a very reasonable 250 pounds but one of the big advantages of the MZ-700 series is the provision of good quality, low cost colour printer/plotter for just £130.

There's a very good selection of software available for the MZ series computers including a number of well-designed games. One of the companies specialising in Sharp software is, not surprisingly, Sharpsoft who have dozens of good games suitable for the MZ computers. Adventure game fans will be interested in Dark Star and The Secret Kingdom, two well thought out games that should keep the most dedicated button basher occupied. Sharpsoft also offer a number of utilities packages for home budget and database programs. In addition there is a package for the FORTH language which will appeal to more experienced programmers.

Owners of Sharp computers will be familiar with Knight Computers who have been involved with Sharp micros for some considerable time. Knight stock just about all of the software available for the MZ series and publish a useful newsletter, avilable free to members of the International Sharp User Group, run by Graham Knight himself. Life membership is just £3.00 and it's well worth it if you're interested in Sharp computers.

Solo Software is another company specialising in Sharp computers. Formed just two years ago by Nick Bewlay Solo Software are currently marketing around 200,000 programs per month. Solo also supply a large number of books and peripherals as well as over 60 programs for the MZ-80A, MZ-80K and MZ-700.

Finally, Kuma computers are also well known for supplying Sharp products including a number of programs and products for the MZ-700. In addition Kuma have a well-designed floppy disc drive unit which will connect directly with the MZ-700. The SFD 700 is supplied complete with an interface card, disc, cable and manual for £495 (plus VAT). ●



Useful addresses for Sharp owners.

Sharp Electronics (UK) Ltd., Sharp House, Thorp Road, Newton Road, Manchester M10 9BE

Sharpsoft Ltd., 86/90 Paul Street, London EC2A 4NE.

Knight Computers, 108 Rosemount Place, Aberdeen AB2 4YW

Solo Software Ltd., Unit 95B, Blackpole Trading Estate West, Worcester WR3 8TJ.

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PROFILE

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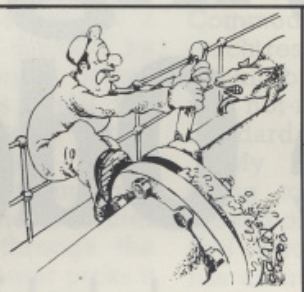

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Playing Against The Odds

Who are the people behind the computer games - are they really all 12 year old geniuses earning millions each year? In this new regular series we intend to find out. Our first guest is Richard Leinfellner from Palace Software.

PROFILE

When Palace Software - yes it's the same Palace that makes movies and distributes video cassettes - were looking for a young programmer to adapt their notorious horror flick *Evil Dead* into a video game, they picked on 20 year old Richard Leinfellner.

"I was always interested in electronics at school" says Richard, "and I learned about computing on a Business Research Machines 380-Z, which was the standard school computer at the time. In fact, I hated writing games programs - you have to be very efficient and tidy for those - but preferred to do things like breaking into programs you weren't supposed to be able to, and modifying other people's programs".

It came as a further surprise to learn that Richard was not particularly a horror film fan either. "As a movie I din't particularly like *Evil Dead*" he says. "But even I could see that it had great potential",

For those of you who haven't seen the film (which is available on video cassette) it tells the story of a group of teenagers who spend the night in an isolated cottage. Unwittingly they let loose an evil spirit which turns them one by one into mutants.

"It was an obvious game scenario" says Richard. "After all, most games depend on killing and surviving, whether it's zapping incoming space invaders, or shooting your way out of a cavern. This is the basis of the film, and of the video game that has been developed out of it."

With all the fuss generated in the press over Evil Dead (it has been condemned by some as a "video nasty" although both the film that was shown theatrically and the film on the video cassette are identical, and have a proper '18' certificate) was Richard concerned about working on such a controversial project?

"Not at all" he replied. "Whatever you may think about the movie, there will be no more killing in the game than any other video game. I could also say that in some games you kill simply for the sake of scoring points. At least in this one you kill for the purpose of surviving. The only way you could make a video 'X' rated would be to make it obscene and this one certainly isn't that!"

Obscene or not, there is one feature from the film that is going into the game that is still being kept under wraps.

Having come up with a good idea for the game, the next job

was to find a computer to design it for.

"I was most familiar with the BBC computer when I joined Palace" says Richard. "It had lots of advantages but someone else had already been assigned to develop the game for the BBC, so I started on the Commodore 64 version. I hated the computer at first. The BASIC was very bad and also very slow; the disc drive was also incredibly slow, while the documentation provided - instruction books and so on - was so sparse that it took me just over a week to work out how to document a disc.

"Thinking about the BBC, that machine has nice graphics and the BASIC is a lot faster, but at the same time they take up so much memory space. A full screen of graphics for the BBC will take up around 20K of its 32K RAM capacity. This makes it impossibly tight for long programs, and muti screen displays become a nightmare.

On the other hand the memory in the 64 is rather more flexible, and there's twice as much of it! I can, for example, get a whole screen display into 2K of memory; and by switching out the unused operating systems such as the BASIC interpreter, I can have up to around 56K of RAM available to actually play the game - a vast improvement on the BBC."

Getting back to *Evil Dead,* with a basic scenario decided (they were going to show the cottage looking down from the top with opening and closing doors, windows and so on) the next stage was to draw it out on a huge sheet of graph paper.

"Each square on the graph represented one picture element - pixel for short - and these were entered into the machine as data statements so we could call up the basic shape anytime we wanted", says Richard. The huge plan, about six foot by four foot, still dominates the office in London's Kings Cross.

So far the game is about half completed and already it has thrown up interesting technical problems that Richard has had to solve.

"There are things that the manufacturers tell you the machine can do that it can't", says Richard, "and scrolling the screen dsiplay sideways without flicks is one of them.

"Basically I have devised a routine to move the display byte by byte. It's a bit long and I think if any of my teachers ever saw it they'd probably throw up their hands in horror, but it works".

Then there's the problem of collision detection. To explain further, the basic scene is a cottage with rooms divided by brick walls. If the graphic of one of the characters hits a wall, the computer is supposed to detect this and sound a warning - only it hasn't being doing so in time, with the result that the character has been half-way through the wall before the computer picks it up, by which time it can't back out and so crashes or locks up.

"In the end I solved that one by building in a routine that remembered up to 16 moves back which enabled the computer to get itself out of trouble". It's these seemingly little things that take up the development time, and become part of the 'neatness' and 'efficiency' of a good games program.

* * * * *

So far *Evil Dead* is in development for Commodore 64 and BBC, but Richard also has thoughts on the Spectrum.

"Although the Spectrum is big in the UK it doesn't have the same worldwide appeal as other models - the Commodore 64 is now the world's biggest selling computer and we are looking for overseas sales" says Richard. "The other thing of course is that the Spectrum is on its way out. As a computer it's horrible to work on from the keyboard itself down to the method of entering commands and the BASIC language".

Most companies tend to write programs on other machines first and then transfer to the Spectrum when they are substantially complete. The only problem with that approach is that you have to write most of it before you know it's going to work.

"Whatever Sinclair might say, I think the QL is going to be the next big games computer; with its huge memory, the possibilities are almost endless. Adventure games will never be the same again. I mean most games today rely on a maximum of 64K memory. The QL has 512K. Can you imagine how much complexity you can build into a game with that much memory?"

When he's not actually pounding the keys and solving the mystery of that added element to make *Evil Dead* so much more entertaining, Richard's main interest is in developing hardware ancillaries -adding bits here, modifying bits there so that his development Commodore machine bears as much resemblance to one you or I could buy in a shop as a souped up hot-rod might to a bog standard production saloon.

"My biggest modification is going to be to the operating system of the 64. At present if the *Evil Dead* program locks up, as it has an increasing habit of doing because of its length, then there's nothing I can do to retrieve it, which means reloading from disc - and that is so slow. While I'm at it I can also tinker around with other parts of the operating system. Another handy piece of hardware is my byte status indicator. This just tacks onto the data bus at the back of the machine and lets me see exactly what each data byte looks like without having to call it up on the screen. For example, to move a character left means that the bottom byte is high, to move it right means that the second byte should be high and the lowest low. With the indicator I can check this instantly and if, for any reason, the screen isn't behaving as it should I can soon trace the fault".

The good news for Commodore is that after several month's use, Richard actually prefers the 64 to the BBC. Despite the slow BASIC and even slower disc drive, the 64 has far better sound and graphics capabilities and there's this flexible memory.

"Because the games don't use the operating kernals (these are the 'preset' pieces of program that carry out various tasks on command such as input or output functions) I can arrange for them to be switched out, leaving more memory space available for the game. I could also dispense with other bits; it all depends on whether I need to or not. The point is that I have the choice. This sort of thing is impossible with the BBC.".

So with a plea for a faster disc drive from Commodore, it's back to the highland spring water and yet more problems to solve and routines to devise for *Evil Dead.*

As a footnote, Palace Software will be launching the *Evil Dead* game together with other film inspired software later in the year.

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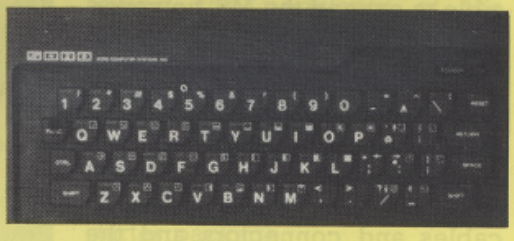
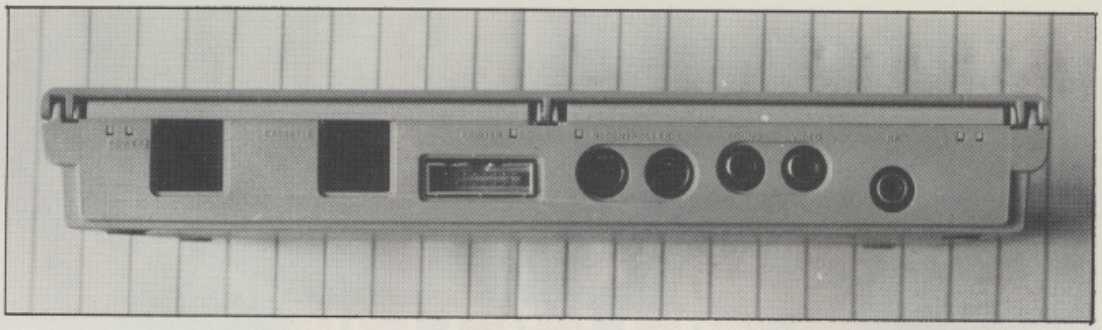
CGL M5 ~The Game Brain?

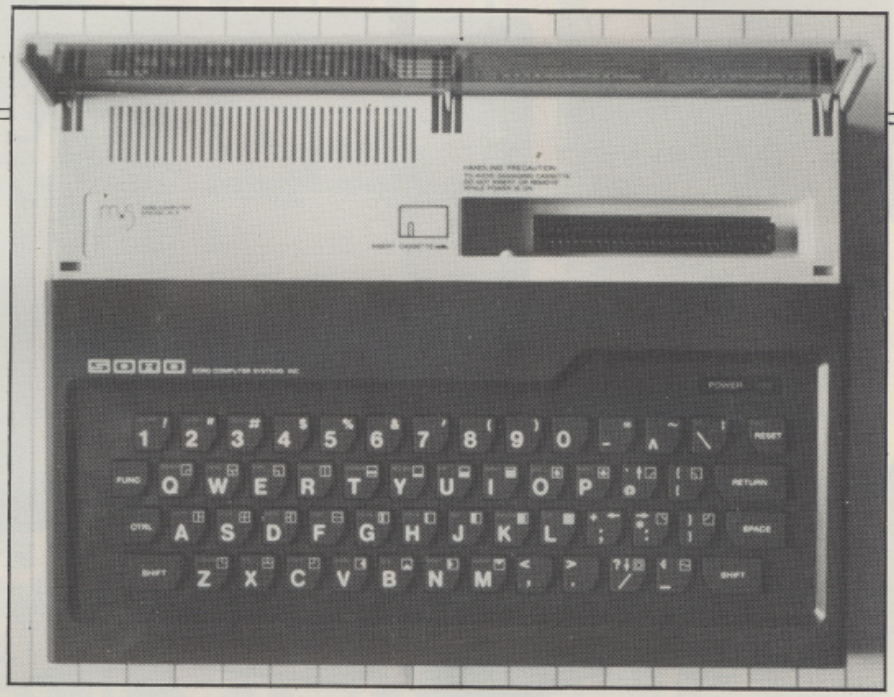


Test File

The CGL M5 is geared towards the game player with an impressive line-up of graphics facilites. Thomas Russel puts this new Japanese Spectrum look-alike through its paces.

The difference between TV games and home computers is becoming increasingly difficult to spot. Many advanced TV games, such as the Intellivision, Colevision and the Vectrex system can become powerful home computers with the addition of a simple keyboard and interface. Older video games systems, such as the Atari 2600 and Philips G-7000 can be grudgingly persuaded to mimic a simple home computer; but the implications ▶





Test File

are clear — it's easier to make a home computer play games that it is to turn a TV game into a home computer. This simple truth is well illustrated by the CGL M5, a home computer certainly, but there is more than a passing nod towards the video game market with a range of plug-in ROM game cartridges and a creditable line-up of cassette-based games software.

The M5 is manufactured by Sord for CGL (Computer Games Ltd.) and features an impressive 20k of user RAM, though the screen uses some 16k of that to produce the graphics. It's possible to expand the M5, however, to 52k with the addition of a plug-in RAM pack. The CGL Starter Pack, which is currently being sold for £149.95 looks like a pretty good deal; it includes the M5, dedicated cassette deck, BASIC I ROM, two games on cassette, cables and connectors and the manuals — more on them later!

Although all the games will operate from the keyboard, there's a strong chance you'll be needing joysticks before long (the CGL items will set you back a further £24.95). Extra application software, such as BASIC G, BAISC F and FALC (business package) can be purchased in ROM form for £35; game carts work out at £24 each and two game cassettes £9.00 each.

So what do you get for the money? The M5 is a largely well-designed machine. ROM carts plug into a socket on the top panel, covered by a hinged flap. Joysticks, cassette deck, printer and add-on peripherals plug into a row of sockets on the back panel. The only real flaw is the keyboard — it's a calculator style rubber button job, very similar to the Spectrum. There's very little feel to the keys which are spaced too close together; typists will hate it! The key legends are badly printed, so identifying certain functions can be tiresome. Like the Spectrum the M5 uses key-word commands, so some keys can have three of four different functions.

* * * * *

In use the M5 is fairly easy-going and, the comprehensive graphic facilities are capable of some excellent results. The graphics resolution of 256 x 192 pixels with up to 16 colours and a commendable 32 sprites means there's plenty of scope for budding games designers. The sound channel is modulated on to the video signal for TV sound; the M5 has 3 voices with a range of special effects which, again, allow plenty of scope for experimentation.

So far it's all been pretty good news. Now for the bad bit — the instruction manuals. The BASIC manual and guide to programming is enough to put anyone off computers and games for life. It's badly written and obviously translated from the Japanese by someone who knew someone who could talk English. To make matters worse, the M5 comes complete with a correction sheet detailing over 30 different mistakes in the manual — there is simply no excuse for this! The manual is a positive hindrance and would seriously affect the chances of a first-timer or beginner of every coming to grips with the intricacies of computing. Even for a relatively experienced home computer user the instruction book fails to explain commands — CGL please replace it as soon as possible.

Gripe over. Now to return to what is a very capable little machine. The selection of games available for the M5 are, to be kind, a little unimaginative when compared with some of the games now on the market. However, in amongst the carts supplied by CGL I discovered a couple worthy of mention: *Guttang Gottong* and *Up Up Balloon* are both very good, taking some considerable time to master — if you can at all. *Guttang Guttong* involves the player in controlling a kind of mad railway layout. By switching portions of track around the idea is to keep the

train on the rails and prevent a collision with other trains that periodically appear on the layout. *Up Up Balloon* is a kind of simple shoot-up game involving a hapless balloonist trapped in a canyon trying to fend off attacks from a variety of ghoulish adversaries — great fun. Many of the games are obviously Japanese in origin, which only confirms my suspiciions that the Japanese have an entirely different sense of humour. No doubt *'Heavy Boxing'* has them rolling in front of their TV sets; it left me cold!

Using the M5 as a home micro (once the problems with the manual have been overcome) can be quite rewarding. The limitations of the 4k of user memory (16k of the advertised 20k is used for the screen) are not always apparent, though for any serious application the expansion packs will soon be needed. The M5 faces some pretty stiff competition these days, not least from the Spectrum and its massive library of software. In comparison the M5 is a much more advanced machine in terms of graphics and facilities, so this must be weighed against the popularity of the Spectrum. Other machines to bear in mind are the Atari 400XL (see this issue) which, although potentially much more advanced, will work out significantly dearer if you take into account the data recorder supplied in the M5 starter package.

* * * * *

The M5 does have its drawbacks, but these are mainly limited to the dreadful manual and fairly small number of software titles available, and this will almost certainly be increased as the M5 gains popularity. For around £150 the M5 starter pack represents a fairly good deal for a dedicated game player who doesn't mind a certain amount of DIY. The graphic capabilities are excellent and will certainly put the Spectrum to shame. For serious applications the M5 is a little limited, mainly by the keyboard, though there's a useful range of peripherals, including printers etc, which can be hooked up with the M5. A micro worth considering. ●

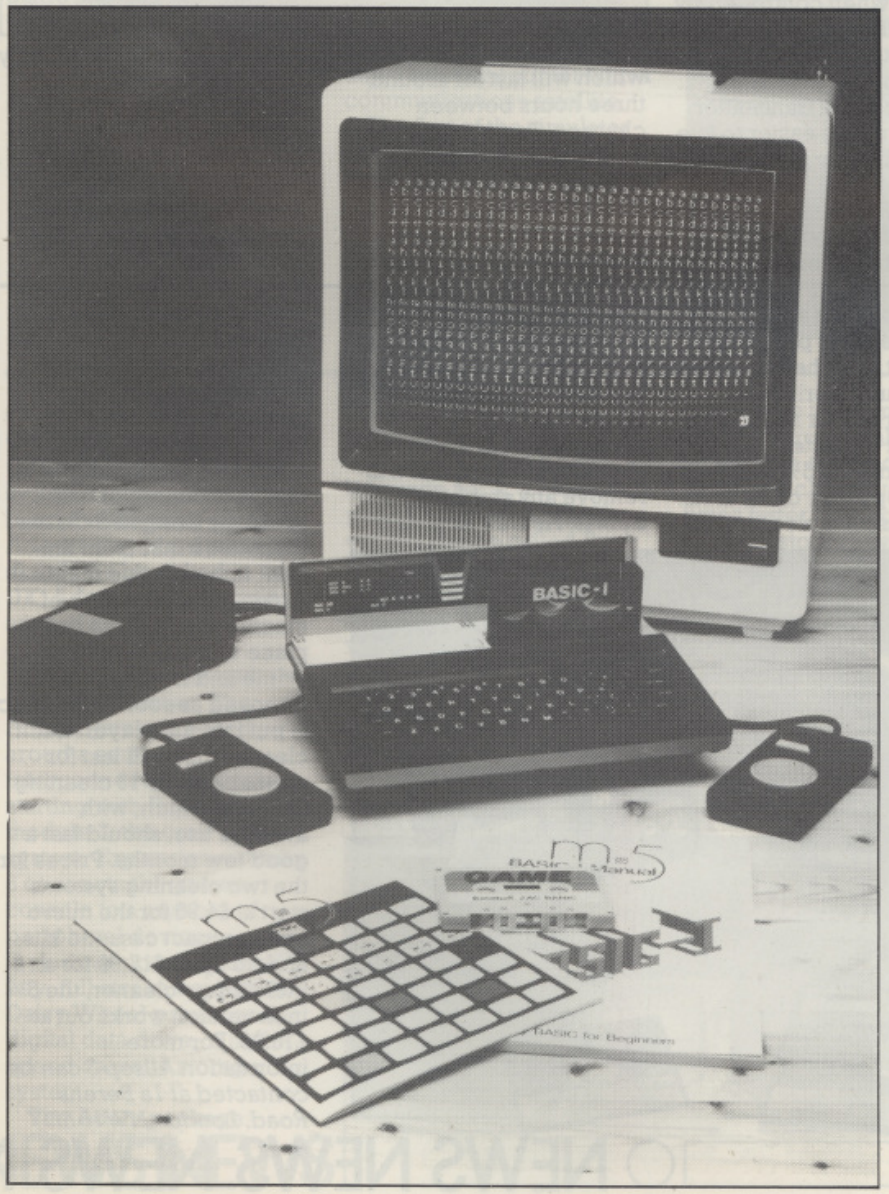
DATA PANEL

Make/Model:	CGL M5
Typical price (£):	150
CPU Type:	8 bit Z80A
Memory:	20k
Languages:	Basic I, G, F, FALC (Similar PIPS II)
Keyboard:	55 key calculator type
Display:	TV/Mon, 256 x 192, 32 sprites, 16 colours
Sound:	3 voices plus effects (ADSR)
Interfaces:	Joysticks, Centronics expansion opt.
Software:	50 plus title, mainly games
Distributor:	Computer Games Limited, Loughton, 01-508 5600

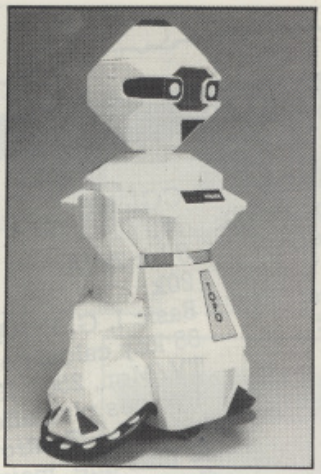
Summary: A game playing micro in an attractive low-cost package

PLUS: Price, display.

MINUS: Keyboard, manuals, lack of software at present.



The Androbots Arrive



Having your own personal robotic slave moves one step closer to reality with the launch of *Topo* and *FRED,* two controllable robotic platforms designed to operate under instruction from a home micro computer.

Topo is the largest and most sophisticated of the pair, standing some three feet tall. It can be taught to manoeuvre itself around obstacles, sensing and remembering its environment. A built-in voice synthesiser, also operable from a computer, gives *Topo* a voice. Software for controlling *Topo* is now available for Apple II computers; packages for the BBC, Commodore and Spectrum micros are expected shortly.

Topo has two extendable 'arms' which enable it to carry small objects. A range of manipulators and sensors will soon be available to extend *Topo's* repertoire. Now for the price; hold onto something solid — *Topo* will be selling for around £1,500! You could have a real human flunkey for just a little more.

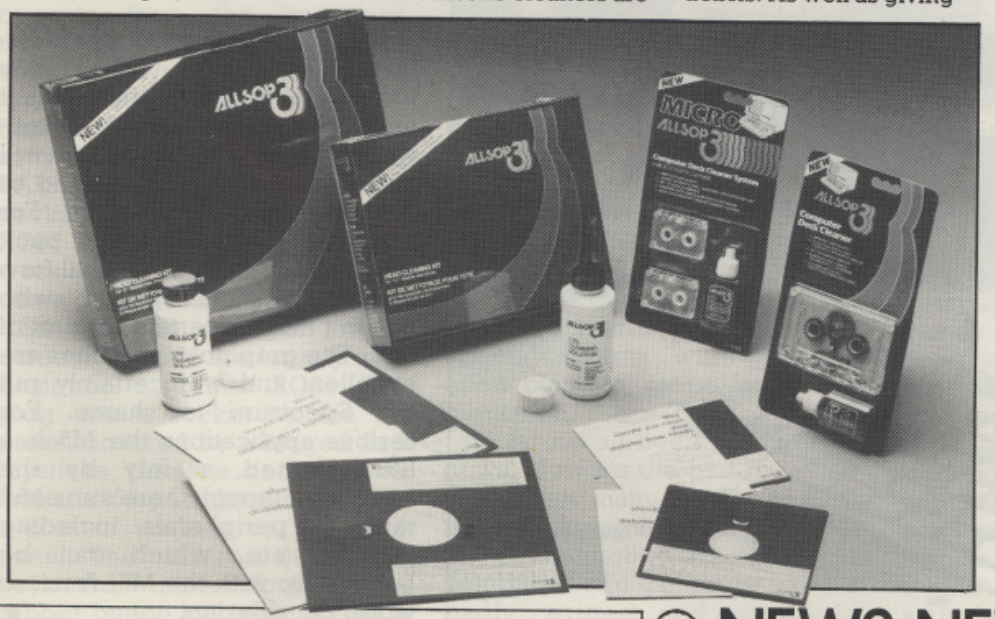
FRED or Friendly Robotic Educational Device is the name given to a 12 inch robot that shares some of the features of its larger brother. *FRED* has a built-in voice synthesiser but no arms. Instead *FRED* has a pen-holder that enables it to draw when placed upon a large sheet of paper. *FRED* can handle quite complex designs when controlled by a micro though *FRED* can be remotely controlled by hand using an infra-red remote control transmitter. *FRED* is a little easier to live with, selling for around £200,00.

Both *FRED* and *Topo* operate from a set of internal batteries (re-chargeable in *Topo's* case) which will last for around three hours between charges. *Topo*can move at an impressive 2 feet per second; *FRED,* whilst no less agile, trundles at a leisurely 5 inches per second. *FRED* and *Topo* are manufactured in the USA by Androbot Inc., and are distributed in the UK by Prism Consumer Products Ltd. For more details *contact Prism at Prism House, 18/29 Mora Street, City Road, London EC1V 8BT.*

Sloppy Floppies

Cassette and floppy disc data storage units are like any other magnetic recording system — they need periodic cleaning to avoid a build-up of grime on the magnetic recording heads. Allsop 3, well known for their audio and video cleaning products have just launched a range of computer peripheral cleaning kits for micro and compact cassette recorders, and 5¼ and 8 inch floppy disc drive units.

The cassette cleaners are based on specially designed cassettes with a kind of scrubbing brush that moves back and forth across the head. The cleaning pad is soaked in a cleaning solution that will remove any stubborn debris. As well as giving the head a good wipe over, the cassette also cleans the capstan and pinchwheel with a separate cleaning pad to avoid cross-contamination.



The two floppy disc cleaners consist of two specially designed cleaner diskettes made from lint-free, non-abrasive material. Again a liberal splosh of cleaning fluid in the right place will ensure all the grime and muck is removed as soon as the disc is put into the player. Each cleaner disc will last for approximately 13 cleaning sessions which, with average use, should last a good few months. Prices for the two cleaning systems start at £4.95 for the micro and compact cassette kits, and go up to £17.99 for an 8 inch floppy cleaner, the 5¼ inch version works out at £16.99. For more information *Allsop 3 can be contacted at 1a Berens Road. London NW10 5DY*

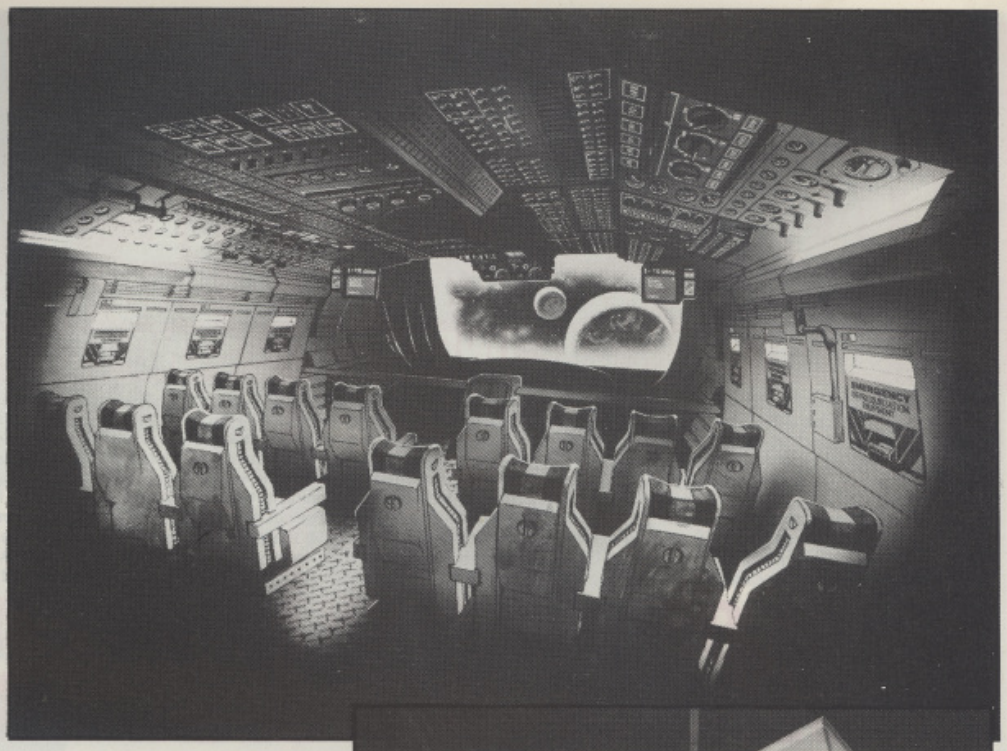
The Ultimate Trip

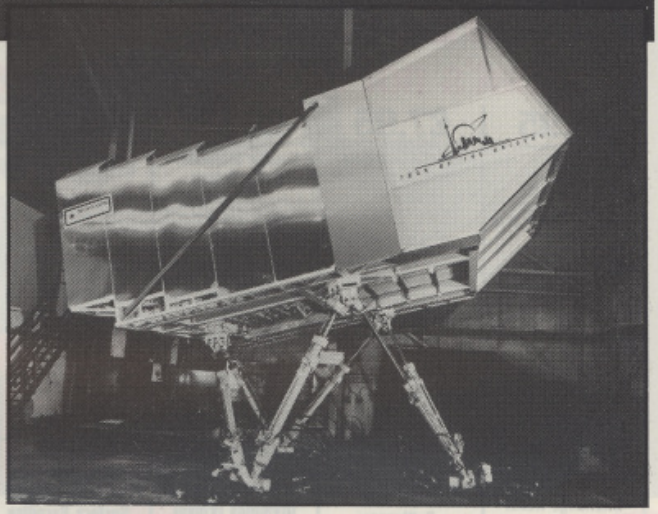
Sitting there in front of your TV screen, watching high quality graphics, don't you feel there is something missing? What good is an accurate aircraft or racing car simulation if there's no sensation of movement? Got a couple of million to spare? You have? Then you're in the market for one of the most remarkable developments in visual and sensory entertainment: your own interactive flight simulation package. Rediffusion Simulation of Crawley have got together with a Canadian company to develop a 40 seat mini movie theatre built on top of a commercial aircraft flight simulator. The flight simulator cabin is supported by a network of hydraulic rams that can move the cabin in almost any direction, under computer control.

A small movie screen will be showing a purposes made film entitled 'Tour of the Universe' — you can guess the rest. The film is coupled to the computer control for the simulator to reproduce the sensations of blast-off and re-entry, as well as all the effects of a quick tour around the solar system.

The film is being shot in Hollywood using the kind of special effects used on 2001, StaR Trek, Star Wars and Close Encounters. The journey includes orbits of Mars and Jupiter, a ride through the asteroid belt and a brief encounter with a communications satellite.

The first of the simulator capsules will open in Toronto, Canada this Autumn and a further 23 'tours' are expected to be in operation world-wide by 1989. So you'll have to wait a while, but by all accounts it'll be worth it!





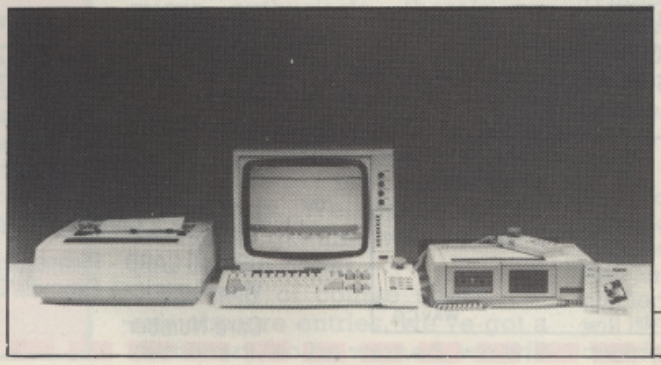
Adam at Last?

Owners of the CBS Colecovision video game system will be pleased to learn that the long-awaited Adam computer system will shortly be launched in the UK. Adam was designed around the CBS games console to utilise the powerful graphics and memory facilities. The Adam system is based aroud a series of interconnecting modules, starting with Expansion module 3, the core of the system. Expansion module 3 connects the games console to a number of peripheral devices, including a professional 75 key, full-stroke keyboard, Daisy Wheel printer and digital data drive - a high speed cassette storage system.

The Adam package comes complete with three software packs, these consist of a smart BASIC language pack, a blank data pack for file storage and an exciting game called Buck Roger's Planet of Zoom.

The keyboard holds the Z80A microprocessor which addresses 16K of RAM but this is supplemented by a further 64K of memory devoted to the display.

The Letter-quality printer can handle up to 120 words per minute in a number of easily interchangable type styles. The digital data drive, which is several times faster than normal cassette storage systems can hold the equivalent of around 250 pages of double-spaced type on each cassette. So far the actual launch dates have yet to be announced but it is hoped that Expansion module 3 and the keyboard will be available by the Summer.



Readers On The Box

Who knows what will happen after you read Winning at Video Computer Games? Around 30 readers of issue one have been invited to appear on a Yorkshire TV show called *'The Game'* programme. The readers were all contestants in our first competition, so give tham a wave when the show goes out.

Ooops!

We're sorry about any confusion that may have arisen from issue one regarding the Mattel Intellivision voice synthesiser mentioned on page 13. We implied that they were on special offer until December 1984, when in fact the offer ended in December 1983. Apologies to all concerned. ▶

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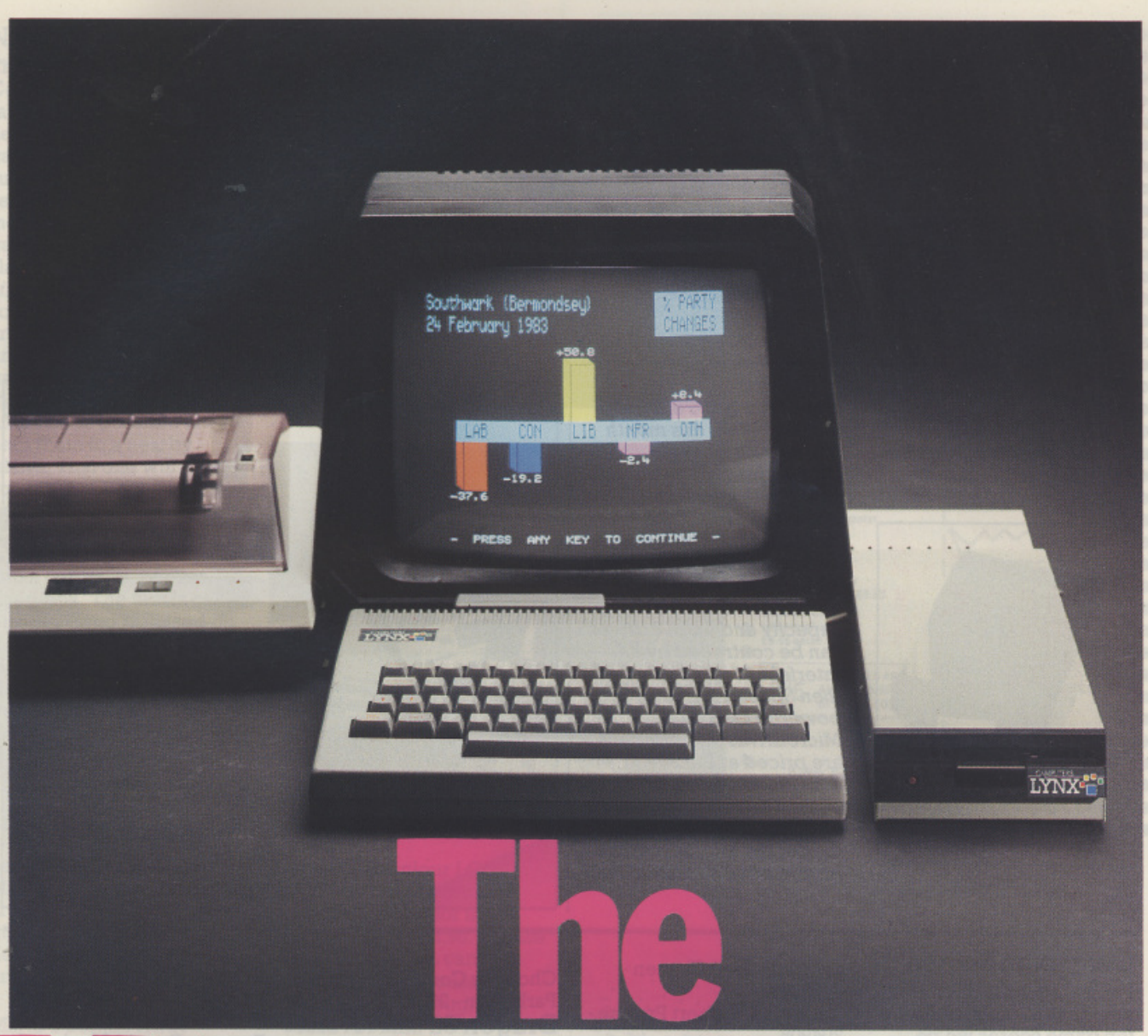


The Missing Lynx?

The Lynx 48 microcomputer, two to be won in this free-to-enter competition. Please note that the monitor, printer and disc drive shown in the photograph are not included in the prizes.

RULES

This competition is not open to employees of AIM Publications All entriesmust be received by no later than first post Wednesday June 20th 1984. No correspondence regarding this competition will be entered into. The Editors decision is final.

Here's the one you've all been waitibg for - we've got two, yes two superb Lynx 48 Micro computers as prizes in this free-to-enter competition.

The Lynx 48 has already earned itself a fine reputation amongst micro enthusiasts, there's an excellent selection of software and a very active users group.

All you have to do is find as many words of four or more letters from the name of the Lynx's manufacturers -*Camputers.* We reckon there's around 40 genuine words, see if you can do better.

We will of course check out any obscure entries, we've got a dictionary, so be warned. we will not accept any names or proper nouns. So, what are you all waiting for? get your entries down on a sheet of paper and send it to us at:

LYNX COMPETITION
Winning At Video & Computer Games
AIM Publications,
31/35 Beak Street,
London W1R 3LD.

Don't forget to include your name and address on your entry. All entries must be in by no later than first post 20th June, 1984. Winners will be notified by post. No correspondence will be entered into. The Editors decision is final.

New Spectrum Interface

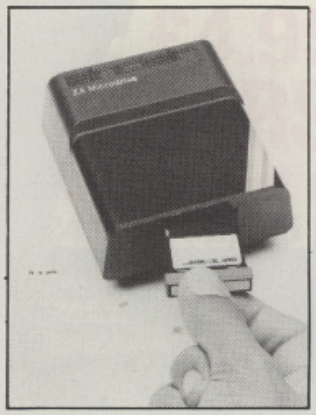
A new low-cost Spectrum interface has just been launched by Ram Electronics. The *Ram Turbo* plugs into the back of any Spectrum offering a wide range of interfaces including ROM cartridge, Sinclair Microdrives, Atari-compatible joysticks and a number of other peripheral components via the rear expansion port. The *Ram Turbo* will cost £22.95 by mail order, plus £1 p&p (£3.00 overseas) and comes with a full one year guarantee. *Ram Electronics can be contacted at 106 Fleet Road, Fleet, Hampshire; from mid-May they will be operating a credit-card hot-line and this will be available on: 02514 5858.*

Trick Sticks

Consumer Electronics Ltd. have just released details of a new analogue joystick designed for the Dragon and the BBC micros. The *Strike Command* joystick features self-centering precision mechanisms housed in a comfortably-shaped case. There are two highly responsive fire buttons, positioned for thumb and forefinger. The two models available (12105 for Acorn BBC Model B, and 12112 for Dragons 32 and 64) are both finished in beige and contrasting blue. They can all be yours for a mere £16.95 per pair. Consumer Electronics are to be found at: *Failsworth, Manchester M35 0HS; telephone: 061-682 2339.*

Microdrives at last

A news page wouldn't be complete without some news from good old Sinclair. Well, this month the long awaited ZX Microdrive is to go on sale, along with Interface 1. You should be able to get your hands on them in WH Smith, Boots, Menzies and other major stockists. Each Microdrive has an 85K Byte capacity and up to 8 drives can be controlled by ZX Interface 1, thus turning then Spectrum into a pretty powerful beast. ZX Microdrives and Interface 1 are priced at £49.95 - considerably less than a basic disc drive set up. We shall be taking a closer look at the Microdrive in a furture issue so watch out!.



Champion Scores

Following the tremendous response to our request for top game scores we've managed to come up with the following list of champion scores. If you can beat any of the scores why not write in and tell us about it, using the Chart For Champions form.

Vectrex

Mine Storm - Alex deStemple - 147580

Atari 800

Defender - Adam Coath - 2309975
Overkill - Neil Chatten - 300000
Asteroids - Robert Prowse - 204908
Raiders Lost Ark - Lee Hart - 18 st
River Raid - Bob Harding - 115410
Dragon Fire - Alex Booth - 10160
Donkey Kong - Graham Parker - 540000
Asteroids - Neil Thompson - 308827
Bezerk - Mark Fleming - 152530050
Galaxian - Stuart Prudent - 3900
Chopper Command - Tony Parkinson - 29800

Dragon 32

Donkey King - Miss J Skyner - 56700

Philips G 7000

Munchkin - Richard Stanley - 27 cards

Atari 2600

Pac Man - Andrew Freeman - 66562
Laser Blast - Francis Bell - 380750

TI/99

Parsec - Glenn Beavis - 1597000

Colecovision

Donkey Kong - Marc Harrison - 1192800
Zaxxon - Ronald Mackenzie - 12005300

Intellivision

Burger Time - Gary Davidson - 199950
Beamrider - Grahame Hart - 91854

Spectrum

Aquaplane - Denis Coleman - 9560
Manic Miner - Mark Owen - 334627
Hunchback - Jason Lawlor - 86564

CHART FOR CHAMPIONS

MY TOP SCORE .....

NAME OF GAME .....

MACHINE .....

MONTH SCORED.....

NAME .....

ADDRESS .....

.....

POSTCODE .....

MALE/FEMALE .....AGE .....

WITNESS'S NAME .....

SIGNATURE.....

New from CGL

Three new additions to the Computer Games Ltd. range of pocket-sized hand held games. The new games, part of the successful 'Game & Watch' series, combine a fast-moving LCD multi-screen game with a clock and alarm. Smallest of the trio is *Lifeboat*, an excellent two-screen game that centres around a fire on a luxury liner. The object of the game is to get as many of the passnegers into the lifeboats as possible and help them to a nearby island. That one will cost you around £24.

The remaining two games are part of a new range of lap games that fold away into a compact, pocket-sized box. The first is called *Donkey Kong Jr*, based on the famous Donkey Kong climbing game. This time Donkey Kong is the one in trouble and only Donkey Kong Jr can rescue his old Dad from the clutches of evil Mario.

The wicked Mario turns up again in the third game — *'Mario's Bombs Away'*, set in some remote jungle. Mario has to find his way around various obstacles in the jungle and finally deliver the bomb to an unsuspecting enemy.

Both Donkey Kong Jr and Mario's Bombs Away feature full-colour LCD displays and alarm clock functions. Price for these two is a hefty £28.95. In case of difficulty CGL can be found at: *CGL House, Goldings Hill, Loughton, Essex IG0 2RR.*

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Action Force	Asteroids	Freeway
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Kaboom	River Raid	

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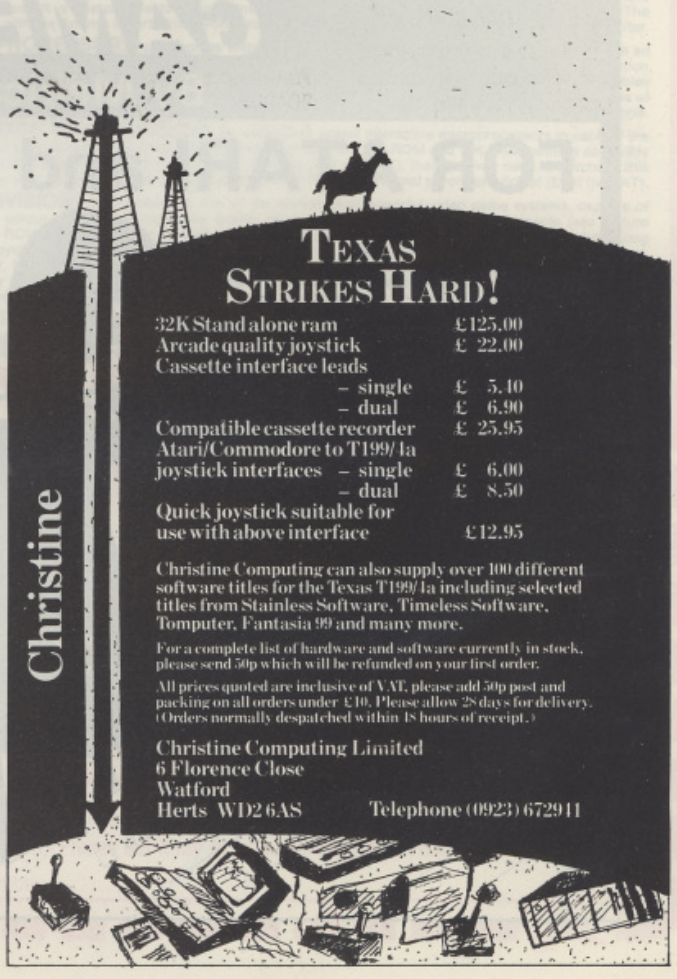
Standardised Sony

It couldn't last forever. At last the Japanese are gearing up for the long-awaited (and much talked about) invasion of the home microcomputer market. Their coming can hardly be a surprise; indeed, according to some experts its long overdue. So what can we expect?

The answer appears to be a high degree of standardisation between the various manufacturers. At least a dozen well-known Japanese consumer electronic companies have agreed to produce micros that conform to a common standard known as 'MSX'. The standard applies to a number of design parameters, but in particular it ensures that all the software is compatible, whatever the make of machine.

Companies known to produce MSX micros include Canon, Hitachi, Fujitsu, JVC, NEC, Sanyo, Matsushita, Sony, Toshiba and Yamaha. The first MSX machines will be appearing in the UK later this year, and possibly one of the most interesting will be the Sony *'Hit-Bit'* — a novel micro aimed squarely at the home-user.

Hit-Bit features a selection of built-in siftware including a data base that can be used to store anything from telephone numbers to recipes. Although it's difficult to make too many predictions at this stage, it's possible that MSX machines will be selling in a basic 16K form for around £200 or less, which should give some US and UK manufacturers a few headahes.



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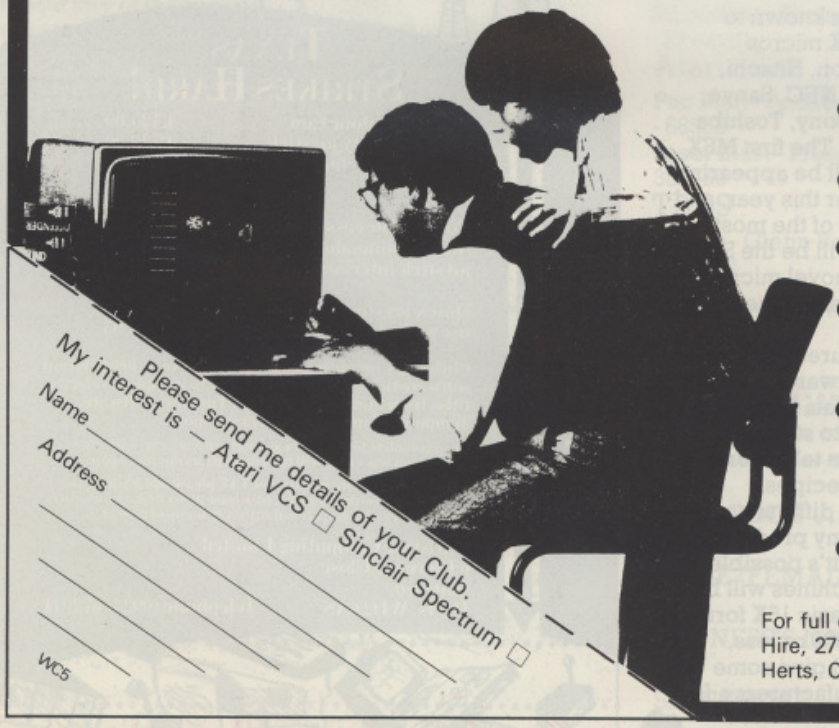

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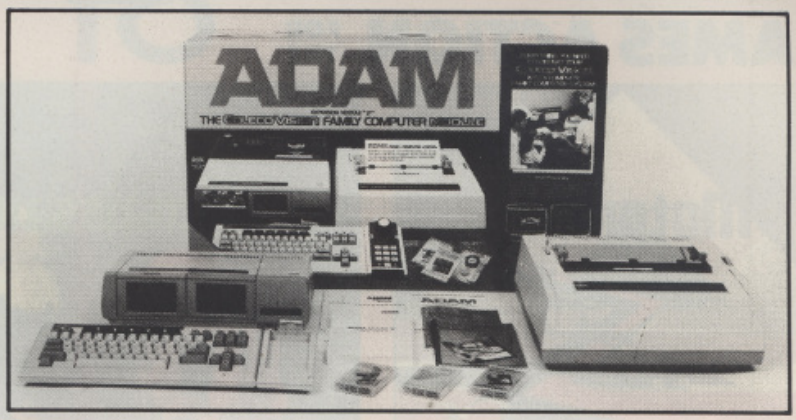

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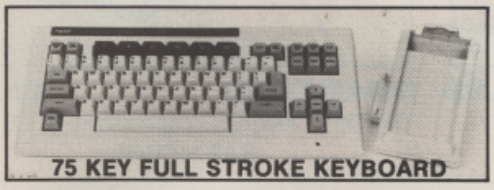

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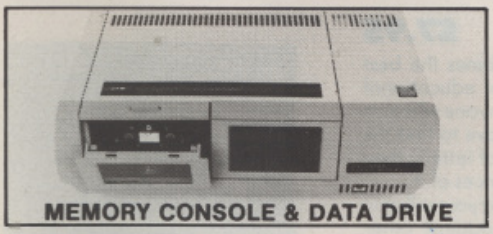
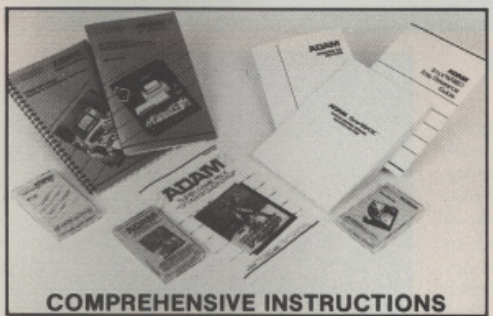


MEMORY CONSOLE & DATA DRIVE

DAISYWHEEL PRINTER



COMPREHENSIVE INSTRUCTIONS

COLECOVISION GAMES CONSOLE

QUITE SIMPLY - VALUE FOR MONEY!

If you're looking for real value in a computer system, one which can handle anything from serious Word Processing to enhanced Colecovision style video games such as Buck Rogers, look no further. The Coleco Adam is here with a package which will make you wonder if you're dreaming when we tell you about it. A price breakthrough in computer systems, Adam is comprised of an 80K RAM memory console with a built-in 256K digital data drive; a professional quality, stepped and sculptured 75 key full-stroke keyboard; a letter quality daisywheel printer and a full word processing program built into the Console. Two additional pieces of software, Smart BASIC and also 'Buck Rogers - Planet of Zoom' (the ultimate in advanced video games), are included as well as a blank digital data pack. Adam can be used with any domestic colour Television set.*

MEMORY CONSOLE/DATA DRIVE: *The heart of the Adam system is the 40K ROM and 64K RAM memory console which combines with the 32K ROM and 16K RAM in Colecovision to give you a total of 72K ROM (including 24K cartridge ROM) and 80K RAM (expandable to 144K). Built into the memory console is a digital data drive which accepts Adam's digital data packs, a fast and reliable mass storage medium that is capable of storing 256K of information, that's about 250 pages of double spaced text! The console is also designed to accomodate a second optional digital data drive.

FULL STROKE KEYBOARD: The Adam keyboard has been designed as a professional quality keyboard that combines ease of use with an impressive array of features. It is stepped and sculptured for maximum efficiency and has 75 full stroke keys which include 6 colour coded Smart Keys which are redefined for each new application; 10 command keys which are dedicated to the word processing function, and 5 cursor control keys for easy positioning of the cursor at any point on the screen. You can attach a Colecovision controller to the keyboard to function as a numeric keypad for easy data entry. It can also be held like a calculator, a feature which makes working with numbers particularly easy. The joystick part of the hand controller can be used in the same way as the cursor control keys, to move the cursor around the screen.

LETTER QUALITY PRINTER: The Smart Writer letter quality daisywheel printer is a bi-directional 80 column printer which prints at a rate of 120 words per minute. It uses standard interchangeable daisywheels, so a variety of typestyles are available. The printer has a 9.5 inch wide carriage for either single sheets or continuous fan fold paper and uses standard carbon ribbons. It is comparable to many printers which cost as much as the total Adam package. The printer can be used either with the Adam's Smart Writer word processing program or as a stand alone electronic typewriter.

BUILT-IN WORD PROCESSOR: Adam comes with Smart Writer word processing built-in. This program is so easy to use that you only have to turn the power on and the word processor is on line and ready to go. Detailed instruction books are not necessary as the Computer guides you step by step, working from a series of Menu commands. It enables you to type in text, then completely edit or revise it with the touch of a few keys. Changes are readily made and a series of queries from the computer confirm your intentions, so that you can continuously double check your work as you type.

COMPATIBILITY WITH COLECOVISION: By using high speed interactive microprocessors in each of the modules, the Coleco Adam is designed to take additional advantage of both the 32K ROM and 16K RAM memory capability in the Colecovision. If you do not already own a Colecovision Console (£99 inc VAT), then you will need to purchase this when you initially purchase your Adam Computer package (£499 inc VAT), making a total purchase price of (£598 inc VAT).

WHAT IS COLECOVISION: Colecovision is one of the worlds most powerful video game systems, capable of displaying arcade quality colour graphics of incredible quality on a standard Colour TV set. The console (see picture bottom left) accepts 24K ROM cartridges such as Turbo and Zaxxon and is supplied with the popular Donkey Kong cartridge and a pair of joystick controllers. Colecovision has a range of licenced arcade hits available such as: Gorf, Carnival, Cosmic Avenger, Mouse Trap, Ladybug, Venture, Smurf, Pepper II, Space Panic, Looping, Space Fury, Mr Do, Time Pilot, Wizard of Wor and many others. So there you have it, Adam plus Colecovision the unbeatable combination. Send the coupon below for your FREE copy of our 12 page Colour brochure giving details on the complete Adam system.

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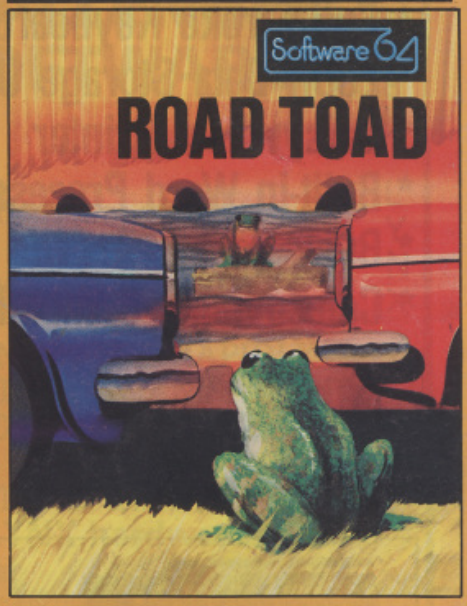

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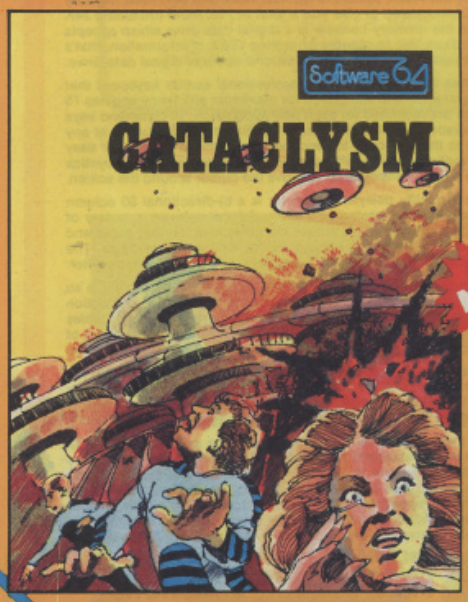
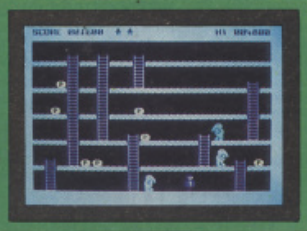


NEW

WORD FEUD £7.95

This brilliantly conceived program combines the best parts of arcade games with the best of educational games, making a real family game that anyone who can see the screen can participate in. You have to find the word that is hidden twice in the jumble of letters, then guide your sights over one of the occurrences of it.

The first to find it wins! You can play by yourself or in teams against the computer, or against other players. Three difficulty levels are included to suit young and old alike!



BONZO 64 £7.95

This best-selling game for the VIC-20 is now available on the 64! Featuring the most intelligent and devious monsters you have ever tried to avoid, the Bonzos, this game is a real joystick wrencher. Move Hans, the handyman, up and down the ladders to pick up the boxes from the different levels.

But don't meet a Bonzo on the way!

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You are an entrant in the great Intergalactic Four Seasons Death Race!. You must tackle the Spring, Summer, Autumn and Winter sections with the objective of running as many other cars as possible off the road. The opposition is numerous, including the indestructable but slow Tank Cars, the tricky Deathmobiles and many other Demon Drivers. You have one advantage - your car can fly for a limited distance, allowing you to avoid hazards if you're quick enough! All this and more makes Burnin' Rubber the car race of the century!

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