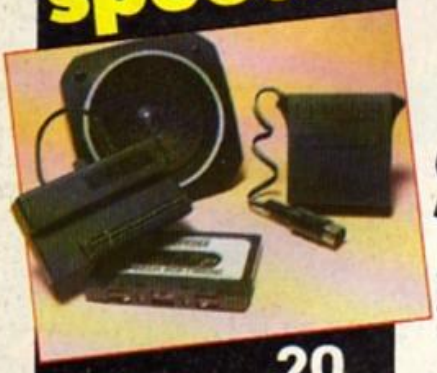
HOME COMPUTING WEEKLY
AN ARGUS SPECIALIST PUBLICATION
May 21-27 1985 No 113 45p

Free speech!



20 dk'tronics speech synthesisers to be won

Speak easy

Read our review of Cheetah Sweet Talker

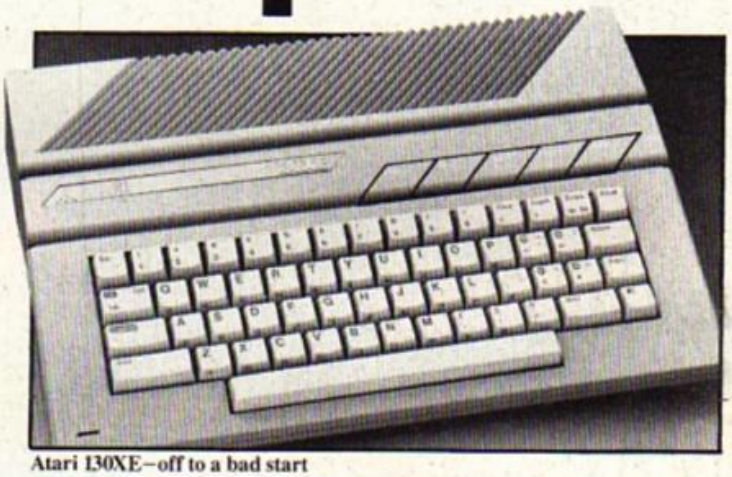
Atari shops sidestep row

The row over distribution of Atari computers is so far not affecting major high street stores.

Two of Atari's main distributors, TBD and Lightning, are refusing to stock the new Atari range. Lightning's Ray Laren said: "In view of the way the market is going, they are making unacceptable demands." And TBD's Joe Woods went on: "They were asking us to commit ourselves to excessive amounts of stock."

However, the split was on both sides, according to Rob Harding of Atari. He said: "We had discussions with both TBD and Lightning and decided to part mutually."

But a spokeswoman for the WH Smith chain was confident that there would be no shortage of Ataris in the shops. She said: "We are not experiencing any difficulties at the moment. We have sufficient stock of computers, disc drives and cassette recorders, and we anticipate that the situation will remain the same."



Atari 130XE—off to a bad start

US Gold: It's the real thing?

US Gold last week launched a new game based on the exploits of World War II heroes, the dambusters, 38 years after the historic raid took place.

World War II is a popular theme for games. Mirrorsoft recently released Spitfire 40 and Acornsoft produced Aviator, while Alligata also brought out a dambusters game.

The US Gold version allows the player to act as any member of the crew of the Lancaster used to drop the bouncing bombs on the Eder, Sorpe and Moehne dams in the Ruhr valley, in industrial Germany.

The Dambusters is being backed by a massive advertising campaign and the package includes a poster, hanging mobile and a model Lancaster offer from Airfix. US Gold says that the game is endorsed by 617 Squadron, the RAF unit which flew the dangerous mission.

At a launch at the Bomber Command Museum in Hendon, a spokesman said: "More than a game—more than a simulation—it's just like the real thing". Let's hope not!

Inside your older, brighter, better HCW . . .

Dracula on Zombie Island Amstrad game

Keep on trucking on your TI

Read before you buy Book reviews

In depth: The save option on your BBC

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Soapbox

I read with interest the article and Soapbox on computers in schools.

Just where does the Department of Science and Education get the idea that calculators and computers are essential to mathematics teaching? I will agree that once a child reaches 'O' level standard, a calculator is needed, but a computer?

In my experience, as a Guide leader, the standard of mathematics in younger children is declining. I believe more time should be spent on basics before worrying about buying hardware.

It's not unusual to see youngsters going to senior school with only a hazy grip of something as basic as the times table. Besides, most of the children I meet, although they have computers at school, don't really understand them.

One child told me she could program a computer. On investigation, I found she knew which key to press when using commercial software. She really thought that was programming.

Please tell the authorities to get their priorities right. Two plus two before A$.

Liz Tomlinson, Havant

If you have something to say, write to us and get it off your chest. We give a prize for all the letters we print.

May 21-May 27, 1985 No. 113

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Argus Specialist Publications Ltd.
No. 1 Golden Square, London W1R 3AB. 01-437 0626

Home Computing Weekly is published on Tuesdays. Subscriptions and back issues: Infonet Ltd, 10-13 Times House, 179 Marlowes, Hemel Hempstead, Herts HP1 1BB. 0442 48432. Trade distribution: Argus Press Sales and Distribution Ltd, 12-14 Paul Street, London EC2A 4JS. 01-247 8233. Printed by Alabaster Passmore & Sons, Ltd, of London and Maidstone, Kent. Design and origination: MM Design, Circus House, 26 Little Portland Street, London W1N 5AF

BASIC LIVING

by Jon Wedge and Jim Barker

Eamon receives his certificate from Dragontorc author Steve Turner

First past the post

Hewson Consultants' latest adventure, Dragontorc, has been completed by Eamon McGing of Camberley.

He finished the game at 11.30pm, April 7 — only six days after he bought it.

Eamon thinks that the game is extremely addictive. He said: "The more problems I solved, the more I wanted to go on playing it."

Hewson will provide Dragontorc clues for all players who send an s.a.e.

Hewson Consultants, 7 Graham Close, Blewbury, Oxon OX11 9QE

Auction for famine aid

Saturday 15 June is the date set for the computer industry's auction in support of the Ethiopian famine appeal. The venue is the GLC County Hall and the auction will last from 11am to 5pm.

Many leading software houses have donated software for the occasion, including US Gold, Pitman, Gilsoft and Argus. It is hoped that it will be the biggest computer auction ever held and will boost the £250,000 already raised by the Soft Aid tape.

If you have any software or hardware you no longer need or want then sent it along to help a good cause.

Contributions should go to: Computer Trade Weekly, Specialist Retail Press, Business Technology Centre, Bessemer Drive, Stevenage, Herts SG1 2DX

Print in colour

Bizzell Computers has announced the availability of a four-colour printer/plotter for £399 including VAT, post and packing.

The printer/plotter prints vertically or horizontally in text and in four directions in graphics.

The machine can be used in conjunction with a micro for graphs, drawings, symbols, axes, geometric patterns, charts, diagrams, circuits, computer art, flow charts, 3-D and contours.

Bizzell Computers, Walnut Tree Hse, Forncett St Peter, Norwich NR16 1HR

Music to your ears

New powerful ROM-based software for the BBC is being developed for the Echo three-octave musical keyboard, according to LVL the makers.

The Echo Music Keyboard is supplied inclusive with an existing disc- or cassette-based software. This software allows the user to change octave, play music, adjust the tuning and select different musical instrument sounds.

The new ROM-based software has additional features and uses the computer's memory to the full.

The software costs £29.95 and is supplied complete with manual.

LVL, Scientific Hse, Bridge St, Sandiacre, Notts NG10 5BA

The Echo keyboard

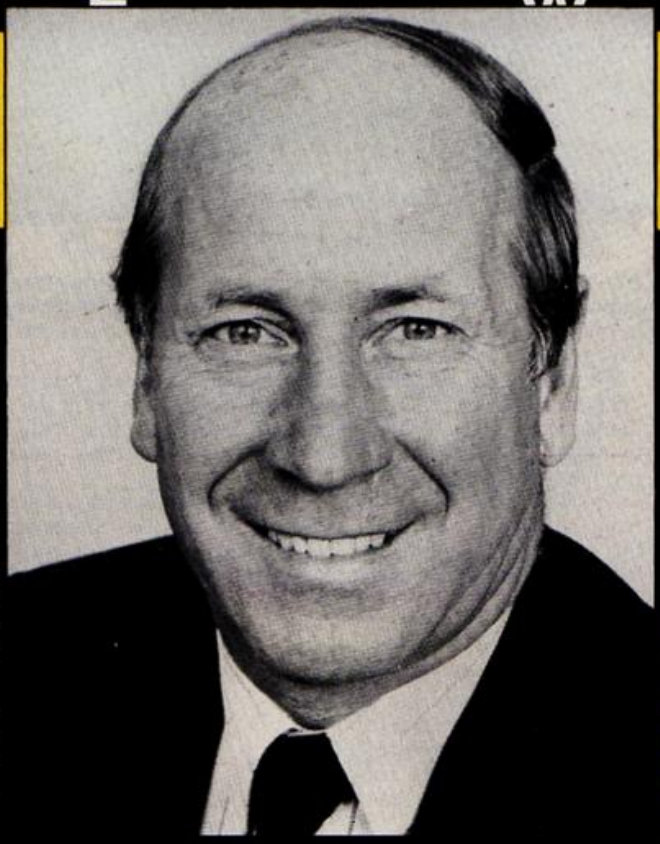
Play football with Bobby

Holiday Brothers has just announced the launch of Bobby Charlton Soccer. The company claims that it is the most realistic computer soccer game yet. The launch is timed to tie in with the 1985 cup final.

Bobby Charlton said: "I am not just endorsing this game, I have been involved in its conception giving guidance and advice, and am of the opinion that it will be one of the most popular computer games ever produced."

Bobby Charlton Soccer is available for the BBC and Electron and will shortly be converted for the C64 and Spectrum. It costs £11.99.

Holiday Brothers, 172 Finney Lane, Heald Green, Cheadle, Cheshire SK8 3PU



Bobby Charlton scores again?

Is it a bird? Is it a man?

After five months of negotiation, Superman is to come to the computer screen.

Originally to be produced for the C64 and Spectrum the game is being written in America for the new Beyond label, Monolith. Expected price of the cassette and disc version is £9.95.

The action will all be arcade style with cartoon characters populating the screen. This arcade style will be the backbone of Monolith's releases. Bill Delaney, managing director of Beyond, suggested that all Monolith games would be capable of "instantaneous play" whereas Beyond releases would have more "meat".

The official launch of the new label will come on June 26th with the release of Quake Minus One for the C64 and Rockford's Riot for C64 and Spectrum. Rockford is a sequel to Bolderdash and has the original version on the other side of the tape free.

Mr Delaney sees Superman as just the beginning of a whole series of comic character games and is already talking about Supergirl and even Superdog sequels. "The mind boggles at the possibilities", he claimed.

Beyond Software, 3rd Floor, Lector Ct, 151 Farringdon Rd, London EC1R 3AD

Fuji competition takes off

Take off in an airship

Fuji Film Floppy Discs are being backed by an exciting competition. Fuji Film is offering 50 people the trip of a lifetime — in an airship.

Entrants in the free draw are required to leave their telephone number on the special teledata number 01 200 0200 and asked to state the location from which they would like to take off. There are seven locations: London, Leicester, Leeds, Manchester, Birmingham, Bristol and Portsmouth.

Winners will be picked out of a hat by darts champions Eric Bristow and Maureen Flowers on Tuesday 28 May 1985. No purchase of Fuji Film Floppy Discs is necessary to enter.

Fuji Photo Film, Cresta Hse, Swiss Cottage, 125 Finchley Rd, London NW3 6HJ

Miracle of technology

Atari users can now take advantage of all Prestel facilities. Miracle Technology announced that this can be made possible with its new Multi-Viewterm/Datatari modem interface and software package.

The interface and disc-based software also gives users access to electronic mail, telex, database and user-to-user communications. It also allows telesoftware downloading.

The package can be used with Atari models 400, 800, 600XL, 800XL, 65 XE, 65EM, 65XEP and 130XI. It costs £59.95.

Miracle Technology, St Peters St, Ipswich IP1 1XB

Prestel on the Atari

Software update

Activision has just released another conversion of the immensely popular Ghostbusters, this time for the MSX. Activision is hoping the MSX version will rocket to the top of the charts as its C64 and Spectrum predecessors did.

Yet another Hunchback game has been released, this time by US Gold and Ocean. Originally produced by Synsoft in the USA, the game is for the C64 and is called Quasimodo. It is being billed by US Gold as "the most unique Hunchback-type game ever produced".

The VIC-20 is also getting a look in this week with a new game from Bubble Bus entitled Cavefighter. Bubble Bus claims a lot for this game and is aiming it at VIC-20 users who have recently been "starved of really good new software."

Title	Machine	Price	Publisher
Quasimodo	C64	£9.95	US Gold
Ghostbusters	MSX	£11.99	Activision
Lazy Jones	MSX	£8.95	Terminal
Cavefighter	VIC-20	£5.95	Bubble Bus
Falcon Patrol II	Spectrum	£6.95	Virgin
Strangeloop	C64	£8.95	Virgin
Jet Boot Jack	Amstrad	£8.95	Amsoft
Master of the Lamps	C64	£10.99	Activision
Investment Monitor	Spectrum	£12.00	Michael Slatford
Hustler	C16	£7.95	Bubble Bus
Confuzion	Amstrad/ C64/BBC/ Electron	£6.95	Incentive
Bobby Charlton Soccer	C64/Spec	£11.95	Holiday Brothers
Beta-Accounts	BBC	£25	Clares
Jump Jet	Amstrad/ BBC/C16/ VIC/Spec	£9.95	Anirog
Herbert's Dummy Run	Spec/C64	£9.95	Mikro-Gen

Printers and monitors

A new range of peripherals and cables has recently been launched for the Enterprise 64. These are a colour monitor, EP80+ dot matrix printer and a joystick interface.

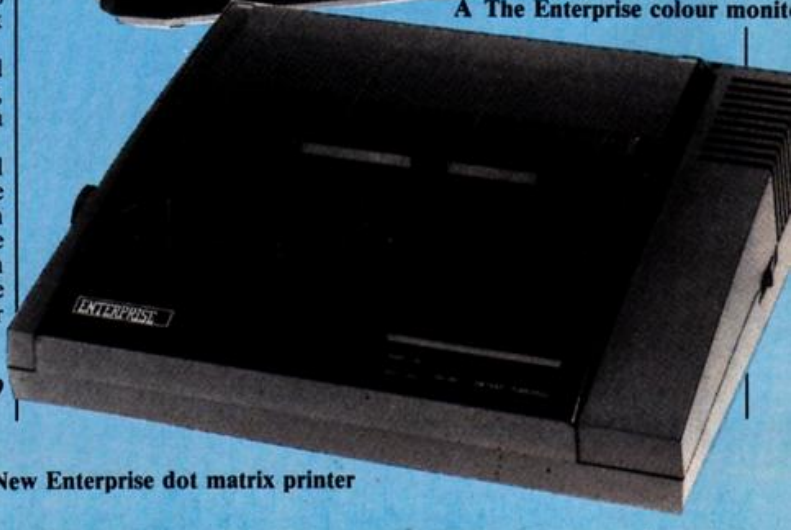
The printer is manufactured under the Enterprise label by Mannesman Tally and costs £239.95. The colour monitor is made by Microvitec and costs £349.95, while the joystick interface is £9.95.

Enterprise has also produced a colour/sound monitor cable, parallel printer cable and a serial/networking cable.

Mike Shirley, commercial director of Enterprise commented: "Anything with an Enterprise label has to be of the highest quality to conform with the standards of the machine itself. The printer and monitor do just that."

Enterprise Computers, 59 Russell Sq, London WC1 4HP

A The Enterprise colour monit



B New Enterprise dot matrix printer

COMP N

dk'tronics

SPEAK EASY

There are 20 speech synthesizers to be won in our Dk'tronics Competition

If you've ever wished to have a chat with your computer then don't despair because if you enter our great competition you could be in with a chance to win a Dk'tronics synthesizer.

These synthesizers are very easy to use and you don't need any programming experience at all. Each contains detailed instructions so that you can use it to its full capabilities. There are also many games now available which can be made much more enjoyable by using them with a speech synthesizer. Does this sound tempting? Then read on.

This week we're offering 20 speech synthesizers from Dk'tronics in our easy to enter word square competition. There will be prizes for Amstrad CPC464, C64 and Spectrum owners. Each winner will win a speech synthesizer compatible with his/her own computer.

The Amstrad CPC464 synthesizer is worth £39.95, the Spectrum one is valued at £24.95 and the C64 type would cost you £29.95 in the shops.

How to enter

Study the wordsquare. There are a number of speech related words hidden in it. When you have found as many as you can, circle them clearly on the wordsquare and fill in the coupon clearly and carefully. Don't forget to tell us which kind of computer you own.

Write clearly the number of words you found on the back of the envelope.

Post your entry to Dk'tronics Competition, Home Computing Weekly, No.1 Golden Square, London W1R 3AB. The closing date is first post on Friday 7 June, 1985.

You may enter as many times as you wish, but each entry must be on an official coupon — not a copy — and sealed in a separate envelope.

Important: please follow carefully the guidelines on entering — incomplete coupons and entries with no numbers on the back cannot be considered.

If you are a winner, the coupon will act as a label for your prize, so clear writing is essential.

The rules

Entries will not be accepted from employees of Argus Specialist Publications, Dk'tronics and Alabaster Passmore & Sons. This restriction also applies to employees' families and agents of the companies.

The How to Enter section forms part of the rules.

W	O	R	D	B	L	T	R	N	O	P	L	I	J	R	V
J	I	A	K	E	L	T	T	O	I	N	S	Z	Z	D	O
K	N	H	T	O	R	B	Q	L	I	V	P	N	I	O	I
R	D	O	R	I	L	S	P	N	C	C	E	B	T	A	C
N	I	M	O	U	T	H	D	V	W	L	A	X	X	R	E
I	I	P	N	P	I	O	E	E	L	J	K	B	T	N	B
N	D	C	I	Q	R	S	W	V	M	L	L	C	A	U	O
I	O	X	C	Z	C	B	A	D	A	E	N	Y	R	R	X
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D	T	S	R	G	L	U	B	L	C	N	I	R	S	A	V
L	H	U	K	A	B	S	R	I	A	A	G	M	O	N	W
B	D	X	B	F	I	E	O	F	K	K	O	U	R	U	D
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Dk'tronics Competition

Entry Coupon

Name _____

Address _____

_____

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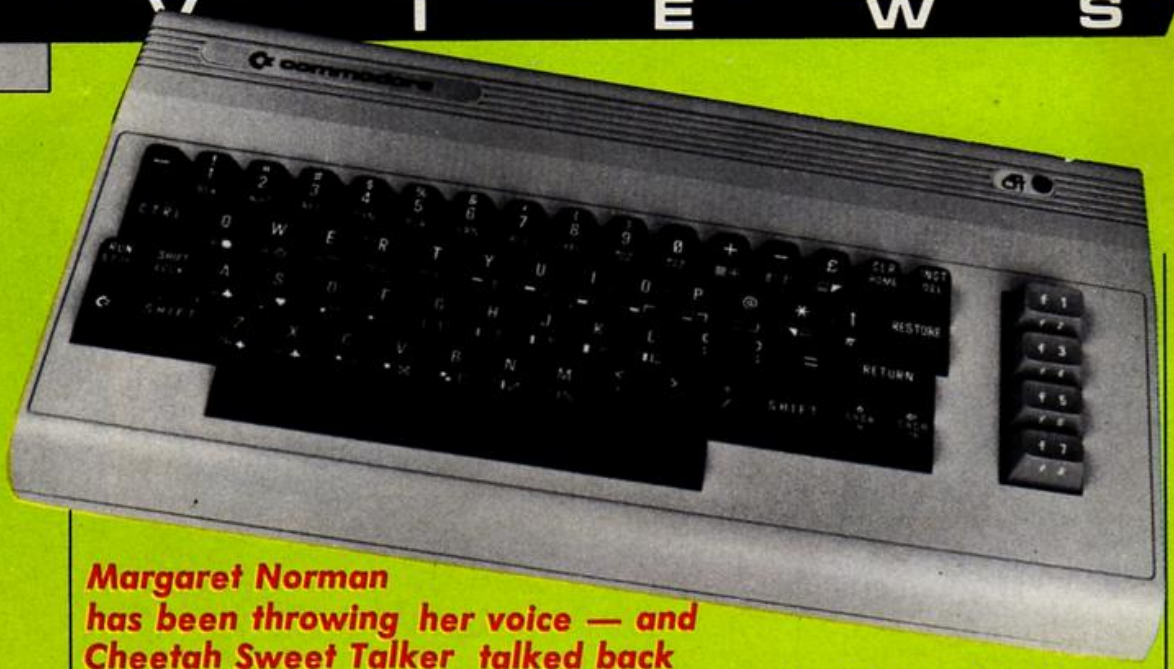
Number of words found _____

Type of computer owner — C64 / Amstrad / Spectrum

(please cross out)

Complete cleary and fully — if you are a winner this will act as a label for your prize. Post to: Dk'tronics Competition, Home Computing Weekly, No 1 Golden Square, London W1R 3AB. Closing date: first post, Friday June 7, 1985. Don't forget to follow closely the advice in the How to enter section including writing the number of words you have found on the back of your envelope.

PERIPHERAL



Margaret Norman has been throwing her voice — and Cheetah Sweet Talker talked back

Sweet Talker

This is the newest speech synthesiser on the market for the Commodore 64. It is allophone-based and produces intelligible, though not very clear, speech at a lower price than most of its competitors.

Allophone-based synthesisers produce a selection of vowel and consonant sounds which can be strung together to make whole words and sentences. They are more versatile than word-based synthesisers — it should be possible to program them to say just about anything — but as the range of allophones offered is inevitably smaller than the range of different sounds in the English language, the words can only be approximated. The resultant speech has an unmistakably non-human sound to it, and you have to concentrate quite hard to understand what is being said. This unit actually sounds very similar to the Currah synthesiser, which uses the same system.

The device is a small box, about three inches square and an inch thick, made in beige plastic to match the computer. It plugs into the user port, and has a lead coming from it which plugs into the eight-pin DIN socket. The sound is relayed by this lead through the television speaker. It looks quite elegant, but as it is plugged in at the back of the computer it is barely noticeable in use.

The package includes a demonstration tape, which gives a brief spoken introduction to the unit and instructions on how to program it, with a printed version appearing on screen in case you find the speech hard to understand. The program is written in BASIC, so you can list it and copy parts of it to use in your own programs. There is also an instruction leaflet, which contains a table of allophones available and a listing of a program to say the word "cheetah".

Most synthesisers are surprisingly easy to program. This one is harder than most, as you have to type in a loader routine about 10 lines long as well as the speech data, and numbers rather than mnemonics are used to identify the allophones. When you have decided what you want the unit to say, you have to select the appropriate allophones from the 60 or so available, look up the number of each of these in the table, then enter the numbers in a DATA statement.

Selecting the right allophones is the hardest part, and a certain amount of trial and error is necessary to get good results. There are, for example, six different allophones to produce an "a" sound — the sounds used in extract, talking, lapel, statement, farm and hair — and no less than seven for "o". The same allophone is used for the "a" in talking and the "o" in song, which don't sound at all alike to me!

The programming instructions are less comprehensive than I would have liked. The program listed on the leaflet is rather oddly arranged; it has the data for the loader routine at the beginning, and the routine itself at the end, with the speech data sandwiched between the two. A clearly defined routine which could simply be tacked on to the end of any program using speech would be much more useful. One line reads: POKE 54295,8: REM SET VOLUME, but anyone familiar with the sound facilities of the C64 will know that it is actually location 54296 which controls the volume, not 54295!

The instructions given on the demonstration tape are not repeated on the leaflet, no advice is given on how to vary the volume of the speech, and no suggestions for applications are included. It would have been better if the demonstration tape had included a program which didn't merely demonstrate the speech, but actually used it.

It is unlikely that much commercial software using this unit will be available, so it will appeal more to programmers than to games players, and poor though the instructions are, they do give sufficient information to enable a competent BASIC programmer to use the unit successfully. There are a good many possible applications for speech synthesisers; they can be used to give verbal prompts in business programs, to give warnings of attacks in arcade games, to enable characters in adventures to speak, to provide instructions in educational programs for children who can't yet read, for speaking clock programs, spelling tests, and lots more.

If you are willing and able to write your own programs to make use of it, then this package represents a good buy. Its quality and price compare well with those of other synthesisers on the market, it is acceptably easy to use, and the intelligibility of the speech should be adequate for most purposes.

Price: £24.95

Publisher: Cheetah Marketing

Address: 24 Ray St, London EC1R 3DJ

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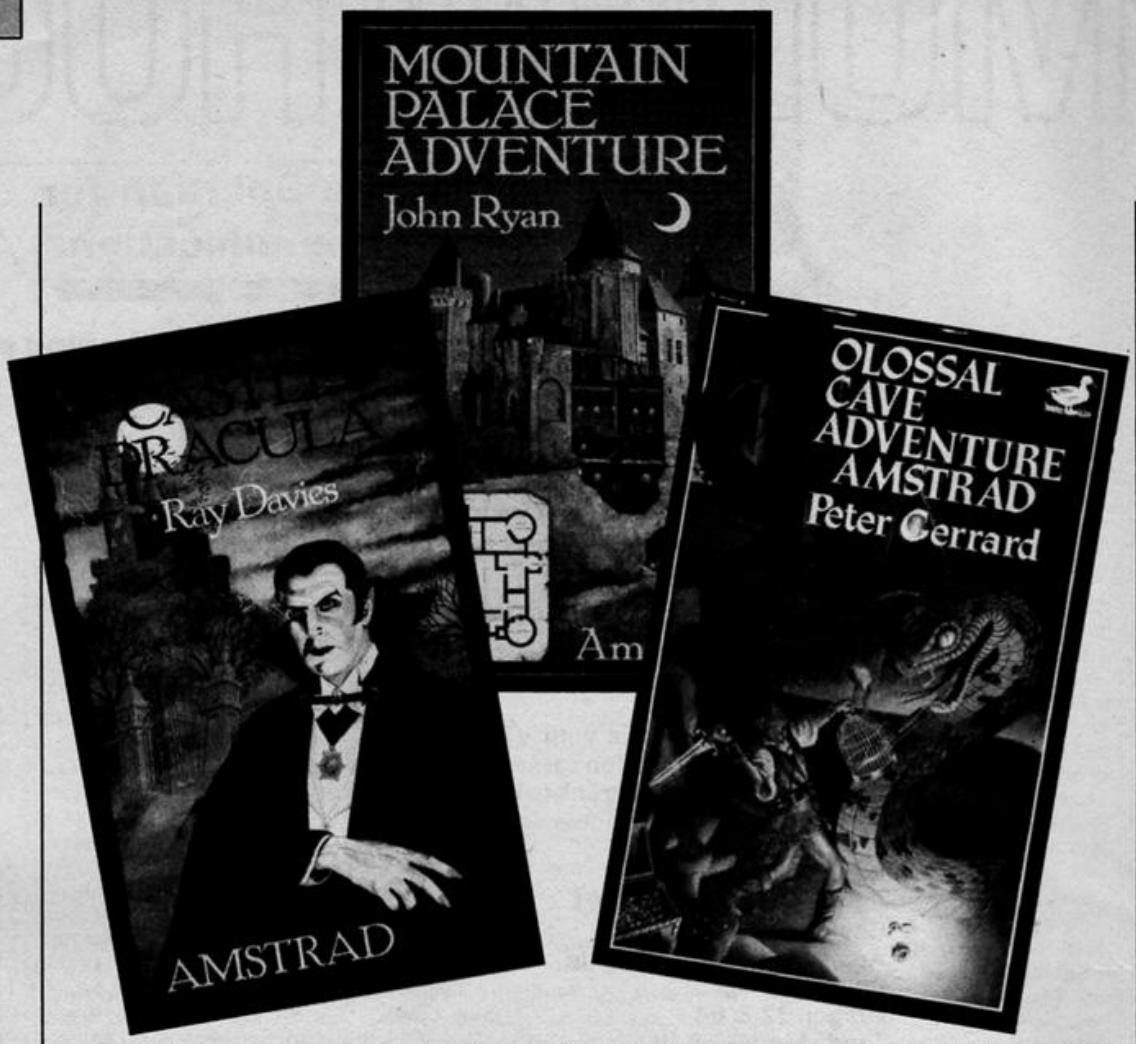


Colossal Cave Adventure
Mountain Palace Adventure
Castle Dracula

I've chosen to review these together as they are written using the same programming techniques, use the same screen format, come from the same publisher, and are the same price!

Peter Gerrard's book, reviewed recently in HCW, gives all the programming details. The programs are all BASIC, using a combination of colours and windows in Mode 1. There are no pictures only text, but to my mind, this is an advantage if the descriptions are good. The BASIC is fast enough, though the interpretation of your input is crude. Verb-noun is about the limit, and you can ask to examine an object described only to be told it isn't there.

Loading is odd too. Instead of SAVING the program with suppressed file names, thus allowing uninterrupted loading, two of these require you to stay with your machine, and press PLAY at various points, so goodbye tea making. Even stranger, Colossal Cave Adventure has no save game facility, so you start from the start each time you play; distinctly odd!

I must admit to not being an adventure fanatic. The idea of sitting down to map the product of someone else's imagination bores me to tears. But I do appreciate inventiveness and humour. This is Castle Dracula's strongpoint. It's the terrible "so you fancy yourself as a great adventurer type, do you?" flavour. Your computer eyes and ears in the castle also wears a hearing aid on occasions, which is no great help. Your aim is to lightheartedly offer his Countliness a rare stake. This appealed to me, and is quite hard enough for someone starting out on adventuring. Fun!

Mountain Palace Adventure shows a little more style after it's loaded, reminiscent of the early magazine listing displays of the Spectrum, filling the screen with words and flashing colours. The adventure is OK but rather ordinary, on occasions, seeing the same descriptions gets rather tedious after a while. It didn't tempt me to probe the ultimate depths even for the promise of vast wealth.

Colossal Cave is based on the original all text adventure. I love this game, and have spent weeks on it on another micro; its layout, language and plot are very compelling. Coming to this implementation I was rather disappointed. All the original locations are there, and the solutions, objects and treasures are consistent, but the descriptions seem to be lacking something. A little magic has gone. For me though, this is the adventure. It calls for great ingenuity and patience.

To sum up, a varied bunch of strengths, the same weaknesses. Mountain Palace for starters, Drac for humourists, Col-Cave for a real challenge. Very ordinary presentation, some programming oddities, and a rather excessive price tag.

D.M.

Price: £7.95

Publisher: Ducksoft

Address: The Old Piano Factory, 43 Gloucester Cresc, London NW1 7DY

REVIEWS

Tycoon Tex

This game appears to be original, but after a short period it became clear that it was a variation on the agility/endurance type, with only a change of theme.

The concept is simple. You must guide Tex down a pipe line avoiding breaks in the pipe and nasties like aircraft which bombs. The pipe lies along the bottom of the screen and motion is implied by scrolling from right to left. Your horizontal position can be varied enabling you to shoot and avoid nasties. The first screen depicts a pipeline crossing the desert and the second is the frozen north.

Apart from the pipe, the only other graphical area is a collection of hills/buildings on the skyline. A feeling of depth is achieved by scrolling different parts of the screen at different rates. This scrolling is well executed and quite smooth. The various figures and objects appear to be built up from several redefined characters and are well animated. The graphics are well designed and colourful with extensive use of shading.

The instructions are very weak. Consequently whilst there appeared to be a sound option, I couldn't get it turned on! Overall the game shows the capabilities of the C16 well.

The main drawback of the game is the lack of variety. I found myself getting bored before I had got half way through the first screen. Whilst this isn't a bad game, even at the price I don't feel it's very good value. **M.W.**

Price: £6.50

Publisher: Gremlin Graphics

Address: Alpha House, 10 Carver St, Sheffield

C16

Best Four Series

To begin with, I should point out my little quirks and foibles. Firstly, I don't believe there is much good educational software around and secondly I think computers are being sold on the idea that they have an educational purpose, ie they are being sold wrongly.

Having made that clear I should explain that there are two packages in the series and that although they cover different subject areas the comments apply to both titles. The first is Best Four Maths and contains Table Adventure, Number Painter, Number Puzzler and Squeeze. The other is Best Four language which contains Words Words Words, Hide and Seek, Facemaker and Podd.

Both packs are excellent. They contain nothing new, in terms of the programs, all have been released from some time now but their appeal has not paled over the years.

Each program is very well written and fully error trapped with helpful little symbols that show which key should be pressed next. There is excellent use of colour and sound and the documentation is very good indeed. This is the only new part of the package. The instructions have been re-written and a number of new activity suggestions appended. There are even flash cards etc. included in each pack.

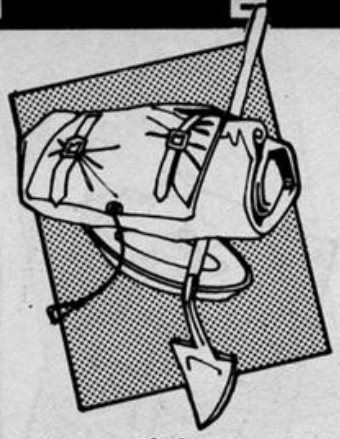
These are some of the best educational programs yet developed for home micros and in this form they represent wonderful value for money. A must for computer minded parents of children aged 5 to 12. **R.S.**

Price: £19.95

Publisher: ASK

Address: London Hse, 68 Upper Richmond Rd, London SW15 2RP

BBC ELECTRON



Elidon

Elidon is a land of fairies, or Faeries, who tend the seven flowers of Finvarra which are woven into a garland for the fairy queen. All is not well at the bottom of the garden, the seven potions which will make the flowers bloom are scattered around the Kingdom. As the only mortal to be allowed to consort with fairies, you must guide the fairy around Elidon to fulfil the quest before dusk.

Compared to most arcade adventures this may seem like a soft option, but if that's your view then you'll miss out on a rather entertaining, beautifully animated game.

Elidon is represented as a maze of interconnected rooms full of dangers and rewards. The greatest of these rewards, as far as the player is concerned, is Faerie dust which restores your Faerie to full strength and preserves her life a little longer.

Apart from Faerie dust and the lost bottles of potion there are many other items which can prove useful. For example, there are many unlit rooms which harbour dark secrets guarded by luminous, evil, blinking eyes. Carrying a torch can be very useful in these situations. Objects must be chosen carefully because a Faerie can only carry three items at a time, and the kingdom is so wide ranging that a map is necessary to relocate an object which may prove essential later.

The graphics are attractive and the music is Grieg which conjours up images of Nordic magic. You learn the rules as you play the game, as with all adventures. Try it. **E.D.**

Price: £8.95

Publisher: Orpheus

Address: The Smith Unit 1, Church Farm Est, Hatley St, George, Beds SG19 3HP

C64

★★★★★

Flipped

★★★★

Hooked

★★★

Keen

★★

Yawning

★

Comatose

Robin to the rescue

Although it has a different name, this game is simply a version of Hunchback. Your aim is to guide Robin Hood along the battlements of Nottingham castle and rescue Maid Marion. On the way he must collect keys and avoid the hazards.

The first screen shows two sections of battlement linked by a rope. Between these are guards wielding pikes, which must be jumped. Whilst this is happening, arrows fly regularly across the screen. These must also be jumped. Once you have collected all the keys and reach the end of the battlements, you move on to the next screen which is similar but you also have falling rocks to negotiate. I must admit that such is the difficulty that I haven't progressed beyond the second screen so you'll have to find out for yourself what the rest is like.

As you would expect, this is very much a game of timing and perseverance. It certainly has an addictive element but it is also tough. Graphically, there is little difference from Hunchback. The battlements are coloured in shades of green to give a 3D effect. The figures are built up in multicolour mode and are quite effective. As seems to be the case with C16 games, the sound is limited, but I suppose you can't expect much from 12K.

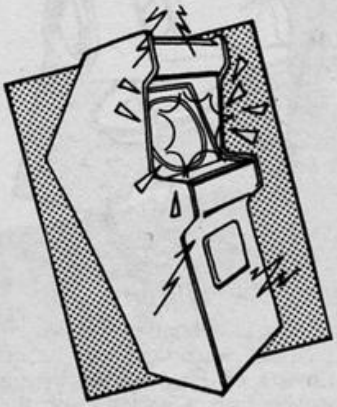
This is a good version of a classic game and is sufficiently tough to extract plenty of howls of frustration. Not bad at the price. **M.W.**

Price: £6.95

Publisher: Solar Software

Address: 77 West Drive, Bury, Lancs BL9 5DW

C16



Petals of Doom

In this game you play the part of a spaceman trapped in caves. The only way out is to help the local flora. The caves are occupied by bugs and other nasties which will stomp on the plants. By shooting these and protecting the plants, the plants will grow. Once all are fully grown, you may enter the next cavern. To some extent, you have a symbiotic relationship with the plants in that you can hide behind them to both increase your energy level and avoid the bugs.

Each cavern is larger than the screen and the display scrolls from side to side to accommodate the play area. A feeling of depth is given by having a scrolling foreground and moving the stars at different rates. The figures are built up from several redefined characters giving pseudo sprites. These are nicely coloured and, in the case of the spaceman, neatly animated. In order to spot the approaching nasties, you are provided with a radar area at the top of the screen.

The use of sound is limited to zapping sounds, but is tolerably effective. The use of colour and redefined characters is excellent and shows the versatility of the C16.

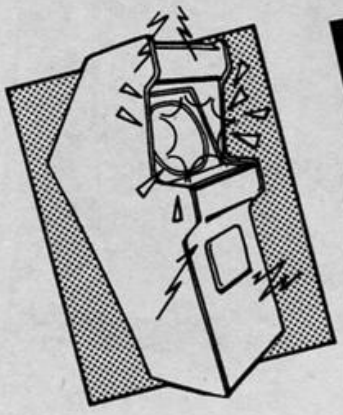
Overall this is a fast action shoot-em-up game which is challenging and fairly original. The price is reasonable and overall the games represents good value. **M.W.**

Price: £6.50

Publisher: Gremlin Graphics

Address: Alpha Hse, 10 Carver St, Sheffield

C16



Hot Pop

Following in the Japanese tradition of Donkey Kong, the title tells you nothing about the game. Having nothing to do with Wham or Prince, the game actually involves a land of platforms inhabited by strange, cute car mutants.

Looking a bit like a VW Beetle with stubby legs instead of wheels, the creature is controlled by you in a quest to find its girlfriend trapped at the top of the screen. To reach her he must first collect all the fruit on the screen by climbing rope ladders, jumping or using trampolines whilst avoiding the enemy mutants. Should you collide with the enemy you plunge into the river at the foot of the screen; if you succeed you temporarily win the girl.

After two screens there is a bonus screen which is fairly easy to complete, just collect the fruit and get the girl as quickly as you can.

In play the game did not appear too demanding because there was only one opponent but completion of one screen led me to progressively harder screens with an increasing number of problems to be solved. Had this been all that was involved I would have said this is child's play but its one saving grace is that the game can be modified by using a joystick and the function keys.

There is a second level of play which has a number of flying opponents zig-zagging across the screen. The music is annoyingly repetitive, the game is reasonably entertaining but nothing revolutionary here. **E.D.**

Price: £

Publisher: Hudson Soft

Address: 26 Wycombe Gdns, London NW11

C64

Stringer

This game is something of a departure for Addictive Games. It's an arcade game rather than a simulation. Nothwithstanding the popularity of Football Manager, I consider this Addictive's best production to date.

It uses a standard platform design. You control Stringer who is a hack for the Daily Blurb. You must rescue a lady called Polly Platinum from a hotel room. In order to achieve this, you must search the hotel room and collect a camera, flash bulb, press pass and the key to her room. Your efforts are impeded by a member of the hotel staff and an irate resident called Mr Angry. Mr Angry lurks within one of the rooms and leaps out when you open the door.

Grapically, the game is excellent using cartoon style sprites. The figures are large and well designed with nice attention to detail. Stringer is very similar to Inspector Clouseau. Each screen shows a different arrangement of platforms and doors. The platforms are linked by ladders and lifts. Each room is searched by standing in front of a door and opening it. Sound is limited to a background tune and some sound effects. I found the tune tedious but the volume control sorted that.

The game play is just about right with a simple first screen and a gentle graduation of difficulty with later screens. True to the company's name this is addictive and good fun. **A.W.**

Price: £6.95

Publisher: Addictive Games

Address: 7A Richmond Hill, Bournemouth BH2 6HE

C64

Helichopper

This is a bit of a yawn, I'm afraid. It's a step back to the days of the game with just one screen that only varies by having different types of aliens moving around it.

You are in control of a helicopter that must pick up little men from the right hand side of the screen, and fly them to safety on some ledges on the opposite side. Between you and safety is a swamp, from which a number of deadly creatures issue forth (including the wonderfully named Dollopoids). Your helicopter is armed with bombs which you can drop on these creatures in order to clear your route across the screen.

And that, as far as I can see, is all there is to the game. After rescuing enough men you advance to the 'next' screen, which is really just the same, but with different creatures in your way. It's mildly amusing for a few minutes, but no longer. I made the effort to get a few screens into the game, just to be fair to it, but no surprises emerged and I got bored quite quickly.

Umm, what else can I say about it? Well, the graphics are nice and colourful, with nice big sprites (like most Firebird games, which makes me wonder if they're trying to develop some sort of house style). That's about it really.

Price: £2.50

Publisher: Firebird

Address: Wellington House, Upper St Martin's Lane, London WC2

Short's Fuse

This is another of Firebird's budget games, but one that doesn't match up to some of the others in the range. The game is very similar to that old favourite, Chucky Egg, but is not nearly as addictive. Instead of collecting detonators to defuse bombs left by a chap called Boris.

As well as the platforms, elevators and ropes, each screen has a picture of some famous landmark, such as the Taj Mahal, but these seem to be for decoration only, adding little to the game itself.

I'm afraid that I simply found the game too hard to play. Having spent a couple of hours on the first screen I gave up in frustration after being stopped by the same obstacle on each attempt. There's a time limit on each screen which is far too brief — if you pause to time a jump, the 'game over' message seems to appear in seconds and I found this enormously irritating. Equally irritating was the tune that played between games and after losing a life.

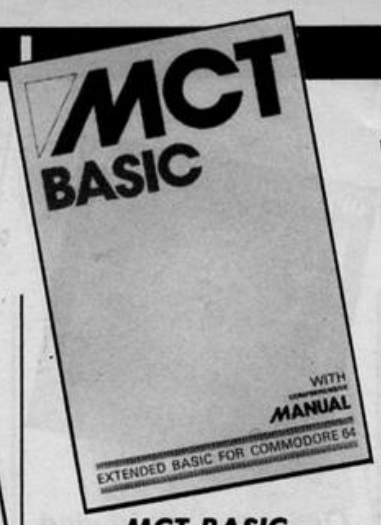
Black marks too, for the control selection. The first time I tried to select the keyboard controls using the "user-definable" option, I made a mistake only to find that I couldn't redefine the controls and had to reload the game all over again. This constitutes an enormous pain, and makes a bad first impression.

Potentially an enjoyable game, but too "unfriendly" for me, I'm afraid.

Price: £2.50

Publisher: Firebird

Address: Wellington House, Upper St Martin's Lane, London WC2



MCT BASIC

Over the last year or so, I've had the pleasure of looking at about half a dozen extended BASICs for the C64. Without question this is the most interesting. This package is certainly not the most sophisticated, although it's pretty close to it, but it's the first which is effectively an emulator.

You can convert your C64 into a C16. You might question the value of this, but even if you don't want to use C16 listings, the version 3.5 BASIC it offers is a great deal better than the resident version 2. To test the compatibility of the package, I tried entering programs on the C16, saving them to disc and reloading them into my C64. They worked every time although there are one or two areas where the package doesn't behave as version 3.5 BASIC.

I won't attempt to describe version 3.5 BASIC in detail. It offers commands for hi-res graphics in two modes, structured programming, toolkit commands, sound and a variety of BASIC enhancements. To offer full use of the sprites on the 64, commands not covered by version 3.5 BASIC are provided but that can't be a bad thing.

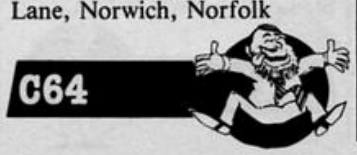
The package NOVALOADs and on running you discover that you have only 26K free. If you use hi-resolution graphics, you loose another 12K. I found this peculiar since it's quite simple to use the RAM behind the kernal ROM for graphics. Overall this is a first class package which represents excellent value for money.

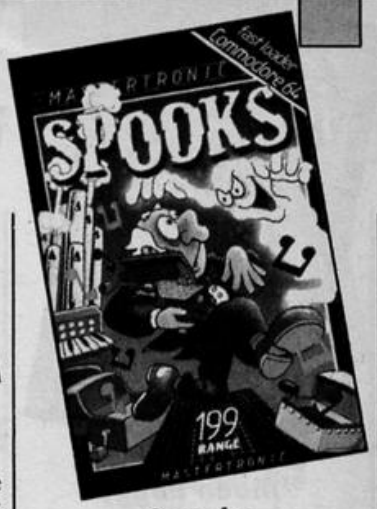
A.W.

Price: £10.95

Publisher: Micro Component Trading Company

Address: Group Hse, Fishers Lane, Norwich, Norfolk





Spooks

This is a joystick controlled graphic adventure, in which you have to rid a haunted mansion of ghosts by collecting eight musical boxes and playing them all together at the entrance. It is menu-driven; your location is shown on the left-hand half of the screen, and a control panel on the right displays the options available to you.

A very attractive title screen is displayed while the program loads, but the graphics for the game itself are not up to the same standard. The display does not scroll smoothly, but jumps suddenly from one section of the house to another, which I found very disorienting. The rooms are shown in plan view, and are very small, so you can see several of them at once. They all look much the same ... you will have to be baked to death in the oven before you discover which it is!

Any contact with a ghost proves instantly fatal, and being ghosts they can pass through walls, so dodging them is not easy. You can stun them by throwing heavy objects at them, but this is quite a tricky procedure which involves a lot of delicate manipulation of the joystick.

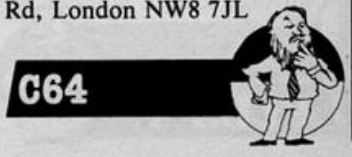
The instructions given are very brief. As the game is menu-driven, there is no mystery about the range of commands available to you, but you have to work out for yourself how to use them.

It isn't a classic game, but like the others in this range, it is remarkably good value for money.

Price: £1.99

Publisher: Mastertronic

Address: Park Lorne, 111 Park Rd, London NW8 7JL



Moon Buggy

This is an Anirog conversion from the C64. In itself, the game is not original but it proves to be both challenging and entertaining. The scenario is quite simple.

You must drive your All Terrain Moon Buggy —ATMB — across the moon negotiating obstacles and nasties. You are protected by laser missiles. The main hazards are moon craters and boulders. You must jump the former and shoot the latter. Buzzing about the skies are fighters which, given half the chance, will bomb you. Finally, there are alien tanks which must be shot.

The display is simple showing a side view of the buggy on the moon surface. To give the impression of motion, the landscape scrolls from right to left. A feeling of depth is given by two ranges of mountains which scroll at different rates. In order to give you the manoeuverability to avoid alien bombs and jump craters, you can change your horizontal position by accelerating or decelerating.

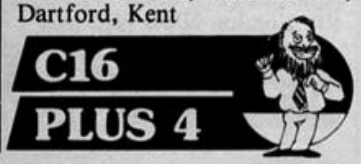
The graphics are nicely drawn with good use of the C16's colour abilities. The appearance of the alien fighters was interesting with swirling circles and the explosions well thought out. Sound was zappy and noisy.

A particularly pleasant feature was the use of a turbo load, it certainly eases the slow loading on the C16. Perhaps not as satisfying as the 64 version but still pretty good and addictive. **A.W.**

Price: £6.95

Publisher: Anirog Software

Address: Unit 10, Victoria Industrial Park, Victoria Rd, Dartford, Kent



Operation Whirlwind

If you've always thought you'd make a good World War II General, here's your chance to find out! This wargame puts you in charge of a reinforced infantry battalion, whose task is to smash through enemy lines and secure a town 15 kilometres away.

The game comes in a smart box, with a 24 page instruction booklet. If this suggests that it is extremely complicated, don't worry — it is written so that beginners can enjoy it, though experienced wargamers will obviously have a much greater chance of success. There are four different levels of difficulty; as a rank amateur, I stuck to the easiest, in which the counterattack from the enemy forces is negligible.

Each turn comprises five different phases. The first is the command phase, in which you order your units to dig in or become combat ready. Then comes a movement phase, followed by a combat phase when you order the units to fire. In the assault order phase you order assaults, overruns and bridge reconstruction; these orders are carried out in the final assault phase. At the end of a turn you can save the game on disk, if you wish, or go straight on to the next turn.

The joystick controls are simple to operate if you follow the instructions carefully. The graphics are very clear, since the units are marked on a scrolling map of the battlefield. Altogether this represents a good introduction to wargaming, giving you plenty of opportunity to exercise your strategic talents while the computer does all the hard work. **M.N.**

Price: £11.95

Publisher: Ariolasoft

Address: Asphalte Hse, Palace St, London SW1

Chickin Chase

Hey, monsieur, you wanna buy zome naughty French zoftware, huh?

The scenario for this French produced game takes place in a chicken coop, where you adopt the role of the cockerel defending his hen's eggs from predators — all very ecological.

The programmers show their Gallic origins by dragging their national sport into the proceedings. In the words of the inlay card: "he must eat to keep up his strength so that he is able to honour the requests of Madame". Well how did you think eggs are produced?

Between attacks you must take the occasional trip through a door with a heart on it, which then closes to draw a veil over the next few seconds.

The cockerel is followed out of the door by his spouse who then proceeds to climb up to lay her eggs on one of the two roosting platforms. The number of eggs depends on how long the rooster dallied with his lady love behind the closed door.

Whilst all this activity is going on hedgehogs, rats, stoats and snakes enter the coop to steal eggs and the cockerel must ensure that none of the eggs are stolen otherwise the hen charges out of her love nest and lands a blow with a rolling pin on the cockerel's head, resulting in the loss of one of his three lives.

Points are scored for each chick which hatches.

Initially entertaining, the action is more frantic than varied and the chicken graphics are blocky and unappealing. Assuming no objections from Mary Whitehouse, the game should be available under the counter at your local dealers. **E.D.**

Price: £2.50

Publisher: Firebird

Address: Wellington Hse, Upper St Martin's Lane, London WC2H 9DL

Realm of Impossibility

This American import is a fascinating graphic adventure. Your task is to retrieve the seven crowns of the Middle Kingdoms from the dungeons where they have been hidden; there are 13 dungeons to explore, and each contains either a crown or a key to another dungeon.

The dungeons, of course, contain monsters as well as crowns: zombies, snakes, spiders and orbs which pursue you relentlessly and sap your strength whenever you come into contact with them. Fortunately there are some scrolls lying around, each of which gives you either extra strength or a spell which will throw the monsters off your track for a while. You can also drop silver crosses in your path, which stop any monsters directly behind you.

The cassette contains the main game program on one side and data for the 13 dungeons on the other. Each time you enter a new dungeon, you have to rewind the tape and load in the appropriate data. This system worked much better than I would have expected; the data loaded remarkably quickly, without any problems.

There is a two-player version which, unusually, requires the players to work in co-operation rather than in opposition. The snag with this is that the players have to enter and leave each screen together, so if you cross a screen too quickly you can be beset by monsters while waiting for your partner to catch up.

A good game, this one. Excuse me, while I just go and explore the next dungeon . . . . **M.N.**

Price: £9.95

Publisher: Ariolasoft

Address: Asphalte Hse, Palace St, London SW1

Tower of Evil

I can't award many marks for originality for this game. The insert runs through a familiar spiel describing how the hero was banished from the court of king Salimos and cannot return without recovering the king's lost treasure and the princess from the wicked necromancer. He therefore enters the multi-level tower armed with an ability to hurl fireballs to do battle with the nasties residing therein.

Each level comprises nine rooms, each occupying a full screen. In each level there are hidden a key, a pile of gold and other items which can make our hero temporarily invincible. The goodies are guarded by nasties which can be zapped and can zap you. When you have the key, you can take the transporter to the next level. Once you reach the top, you must put the gold in the chest and save the princess. You then start all over again.

Graphically it is rather unexciting. The nasties comprise of single redefined characters and the hero is rather similar to humpty-dumpty. The animation is neat but unexciting. The walls of each chamber are simple coloured blocks. Overall, the game doesn't reflect the potential of the C16's graphics. Sound is limited to footsteps and zapping noises.

The game plays quite well with equal opportunity to zap nasties or use speed to avoid them. It's not exactly tough, but the different modes of attack by each nasty make life interesting. **A.W.**

Price: £6.95

Publisher: Creative Sparks

Address: 296 Farnborough Rd, Farnborough, Hants

C16

Star Seeker

Subtitled "a guide to the night sky", this is an introduction to astronomy as well as a source of information for the initiated.

As in Intermediate Astronomy from SciSoft, you need to input a latitude, longtitude, date and time in order to produce a plot of the visible sky. This is done quite quickly, and a menu allows you to construct constellation maps, get detailed info on chosen stars, produce a close-up, watch the stars move by defined time intervals, change the viewpoint or time, and output the results to a printer. A second program allows much the same facilities, though featuring the solar system. Here, the information is about the moon and planets.

The program is very well error trapped, and is user friendly, with a high standard of on-screen presentation, which exploits the Spectrum to the full. A limiting factor is that the only printer interface supported is the Kempston — version not specified — or the ZX Printer. Equally odd is the offer of upgrading the program to disc, but not to Microdrive cartridge, and the failure to support serial printers through Interface 1.

Apart from a much less tortuous menu procedure, and the price, what distinguishes this from the SciSoft offering is the quality of the manual. This is full of technical terms, but these are all explained with the aid of tables, diagrams, screen-dumps and appendices. You will have to work, but the basic info is here, Not easy, but good. **D.M.**

Price: £9.95

Publisher: Mirrorsoft

Address: Holborn Circus, London EC1 1DQ

SPECTRUM

Type-Rope

Type-Rope is described as being designed for younger children with the purpose of giving them hours of educational fun. Using cartoon/arcade type graphics of a high standard, a series of very large "lovable" characters like a clown or a bunny are depicted using multi-colours. Down each side of the character is a collection of letters or numbers as they appear on the keyboard. Each is connected by a finely drawn line to another on the other side of the character, but not straight across. The result is the impression that the clown, or whatever is tied up, and the purpose of the game is to untie them.

Untying is achieved by identifying the first letter, pressing the relevant key, then pressing the one to which the rope is connected. If all the ropes are untied in the limited time available, then a new character is drawn, but with more ropes. When you finally fail, your score can be entered into the hall of game.

Presumably, the educational content is the reaction timer, together with the number and letter recognition. Unfortunately, young children use lower case letters at the start of their schooling, not upper case as found on keyboards and in this program, so this isn't really of much value to them educationally. It would help them to learn the layout of the keyboard, but a variable time interval would have been useful. Cheap, nicely presented, fairly easy to use, but of limited value. **D.M.**

Price: £1.99

Publisher: Mastertronic

Address: Lorne Park, 111 Park Rd, London NW8 7JL

SPECTRUM

Murder on the Zinderneuf

One of the 16 passengers on the luxury airship Zinderneuf has been murdered. Fortunately, a thinly disguised famous detective — Miss Agatha Marbles, Inspector Klutzeau or any one of half a dozen others — is on hand to unmask the murderer. Will they succeed in solving the mystery before the airship lands? Highly unlikely, I think.

The game is played by moving your choice of detective around a floor plan of the airship. The graphics are rather odd; I found the patterned carpets very distracting. Passengers materialise like magic when the detective enters a room, and bumping into one produces a menu of options: question them about the other passengers, ignore them or accuse them of the crime. If you select the right approach, they may agree to answer up to three questions. There are also clues to be found in many of the rooms, but some, if not all, of these are of very little relevance to the case.

After a long period of searching and questioning, your hero/heroine should have collected lots of conflicting information. Then it is just a matter of sifting through it to arrive at a logical solution to the mystery, or alternatively, making a wild guess as to the identity of the murderer. At the end of the journey, or soon if you are either luckier or more skilful than I was, the true culprit is revealed, together with an explanation of their motive which leaves the relevance of most of the clues still shrouded in mystery. **M.N.**

Price: £11.95

Publisher: Ariolasoft

Address: Asphalte Hse, Palace St, London SW1

C64

SAVE OPTION

This week Shingo Sugiura continues his series with a close look at the save option

This week, we will be concentrating on the procedure which handles the save option. Look at the listing. When the save option is first chosen, a little text window is formed below the editing grid and "Save option" is printed in line 740. In line 750, you are asked to confirm the option. In line 780, you are asked to input the starting line number, i.e. line numbers from which the character definition starts. By choosing this value intelligently, you can simply *EXECute the file created in order to join it on to your existing program.

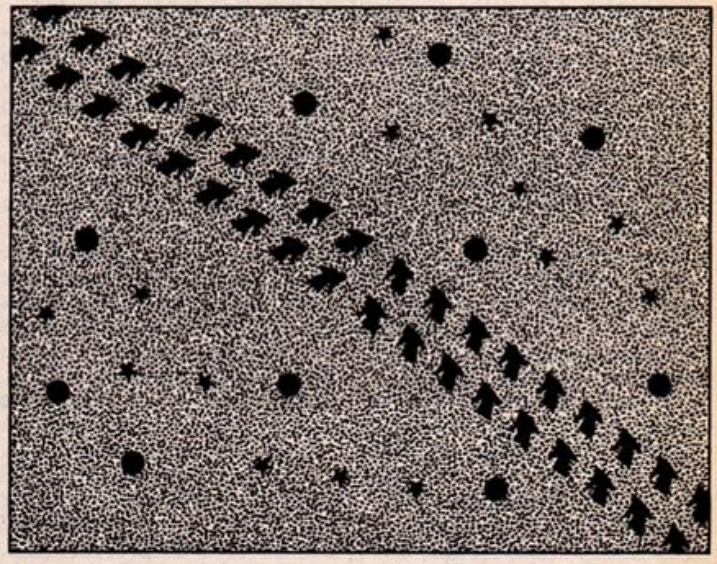
In line 810, you are asked to input the increments and lastly in line 830, you are asked to enter the name under which the file should be saved. In line 840, a file is opened under the name which has been entered, then in line 850, the file is started off by "DEFPROCdefine". A general procedure "Bput" which allows you to send a string to the file is used here.

In lines 860 to 920, the characters are sent in sequence as a series of VDU23 statements. It would be a waste of time to save all the characters from 224 to 225 since only a small fraction of time to save all the characters from 224 to 255 since only a small fraction may be redefined so in lines 880 and 890, the character definition is read in and in lines 900 to 910, each row is added up and if the total turns out to be zero (i.e. the character is empty), that particular character is skipped. After all the characters have been saved — or not, as the case may be — the file is closed in line 940.

Procedure "pbut" is a general procedure which allows you to send a string, i.e. a series of characters, to a file. It splits up the string which has been passed as a parameter into individual characters and sent to the file sequentially.

The next procedure "c-line" is a procedure which creates a VDU23 statement. A string consisting of the line number, VDU23, and the definition is created in lines 1050 to 1090 and sent to the file using the above procedure. You may have noticed that the definition uses hex rather than decimal. This is because it is easier to distinguish characters in hex then in decimal. Remember that a byte (eight-bit number) may be split up into two four-bit numbers called nibbles and each nibble may be dealt with individually. In fact, after a little practice, you can tell the shape of a character by looking at the definition simply by splitting up the hex numbers into their nibbles.

Anyway, that's it for this week. Try to digest these procedures thoroughly. Because of space limitations, I have not been able to describe the various file handling commands but in any case, the user guide explains these commands in great detail so if you don't understand any of the commands, you know where to look.



```
720DEFPROCsave
730PROCwindow
740PRINT"Save option"
750IF NOT FNyes PROCwindow:VDU26:ENDPROC
760PROCwindow
770REPEAT
780LL%=VAL(FNinput("Start=",48,57,5))
790UNTILLL%>0 AND LL%<30001
800REPEAT VDU7
810inc%=VAL(FNinput("Increment=",48,57,2))
820UNTILinc%>0 AND inc%<11
830name$=FNinput("File name ",32,126,9)
840F%=OPENOUT(name$)
850PROCbput(STR$(LL%)+"DEFPROCdefine"+CHR$13):LL%=LL%+inc%
860FOR main%=224 TO 255
870total=0
880A%=&A:X%=FNlo(char):Y%=FNhi(char):?char=main%
890CALL&FFF1
900FORL%=1 TO 8:total=total+L%?char:NEXT
910IF total>0 PROCc_line
920NEXT
930PROCbput(STR$(LL%)+"ENDPROC"+CHR$13)
940CLOSE#F%
950PRINT'"Successful save"
960PRINT'"Press any key";
970REPEATUNTILGET
980ENDPROC
990DEFPROCbput(A$)
1000FOR loop%=1 TO LEN(A$)
1010BPUT#F%,ASC(MID$(A$,loop%,1))
1020NEXT
1030ENDPROC
1040DEFPROCc_line
1050string$=""
1060PROCbput(STR$(LL%)+"VDU23,"+STR$(main%))
1070FOR count%=0 TO 7
1080string$=string$+",&"+STR$~(?(char+count%+1))
1090NEXT
1100PROCbput(string$+CHR$13)
1110LL%=LL%+inc%
1120ENDPROC
```

WELCOME TO BASIC

Brian Jones continues his series by explaining most of BASIC vocabulary

We've come a long way in the last seven parts. This week I'll cover most of standard BASIC vocabulary. But first, I'll deal with last week's problem. I asked you to try writing a program to add up 1p, 2p, 5p and 10p coins simply by tapping one of the four function keys. Look at this

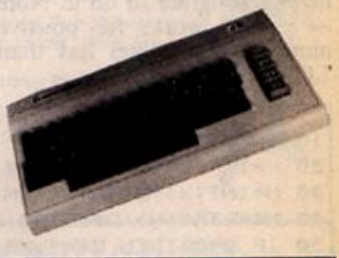
```
10 T=0
20 GET A$
30 IF A$="■" THEN T=T+1:PRINT1,T
40 IF A$="■" THEN T=T+2:PRINT2,T
50 IF A$="■" THEN T=T+5:PRINT5,T
60 IF A$="■" THEN T=T+10:PRINT10,T
70 IF A$<>"T" THEN 20
80 PRINT"■THE TOTAL IS";T;"PENCE"
```

The characters in quotes appear when you press the function keys once the double quotes have been typed. Obviously the program could be modified to add any amounts to T, including using other keys. Alternatively, the value one could be added to a different variable for each key. This could then be used to keep a count of the number of items in up to four categories, for example: f1 for cars, f3 for buses/coaches, f5 for lorries, f7 for bikes.

Some programs use, GET A$: IF A$="" THEN. They do this because the computer does calculations so fast that most of the time it goes round a loop like 20 to 70 above, no key has been pressed. In that case there is nothing to be got by the GET! So A$ takes the value "nothing". In numbers that would be zero; in name or string variables, it's called the null string, and is represented by two consecutive double quotes "". Trained typists find this very unnatural and want to put a space between them, which can cause errors when the program is RUN. All the examples I've used so far of GET, get characters, but if you use, GET A, or GET any number variable, only digits will be acceptable and pressing a letter gives a SYNTAX ERROR.

Alter the program above — change the A$ on line 20 to just A, and see the difference in what happens when you press a numeric and non-numeric key. In practice I always use A$, even if I want digits. Of course you can't do arithmetic on name variables, even if the "names" are numbers. Suppose you wanted to use a program similar to the one at the start to add up a long string of digits, for instance the number of people in each car passing a check point. How would I do it with GET A$?

```
10 T=0
20 GET A$:IF A$="" THEN 20
30 IF A$="S" THEN 70
40 X=VAL(A$)
50 IF X<>0 THEN T=T+X:PRINTX,T
60 GOTO 20
70 PRINT"TOTAL =";T
```



RUN this and see how pressing the number keys add on their value, but pressing a character or function key has no effect. Now look at line 40. VAL is a BASIC function which converts any string variable to a value. If the string variable is a letter, the value is zero. Try these programs —

```
10 INPUT"GIVE ME A NAME OR NUMBER";N$
20 IF N$="STOP" THEN 80
30 X=VAL(N$)
40 IF X=0 THEN PRINT"NAME"
50 IF X<>0 THEN PRINT"NUMBER"
60 PRINT X,N$
70 GOTO 10
80 REM TRY NAMES LIKE AB12 AND 34CD
90 END
100 INPUT"ENTER A NAME";N$
110 L=LEN(N$)
120 PRINT"THERE ARE";L;"CHARACTER IN ";N$
130 END
200 INPUT"ENTER A WHOLE NUMBER";N
210 N$=STR$(N):L=LEN(N$)
220 PRINT"THERE ARE";L-1;"DIGITS IN";N
```

```
230 END
300 FOR I=1 TO 5
310 INPUT"ENTER ANY NUMBER";X
320 D$=STR$(INT(X))
330 L=LEN(D$)
340 PRINT TAB(30-L);X
350 NEXT I
360 END
```

How can you try all this? The program stops at line 90. True, but if you type RUN, followed by a line number, you can start the RUN where you like. So RUN, RUN 100, RUN 200 and RUN 300 will allow you to try each of these four programs individually.

The effect of LEN should be fairly obvious from the second part of the program. STR$ has the reverse effect to VAL, and since LEN only works on string variables, part three needs STR$ to convert a number to a string variable. But why L-1 digits? It's the space character in front of positive values, or the minus sign in negative values that we don't want to count.

The fourth part uses STR$, VAL and INT to find the number of digits before the decimal point so the values can be lined up nicely. But, suppose you wanted output to two decimal places, even if it's a whole number. If you input 12.00, the computer outputs just 12 on its own, and chops off the decimal point and zeros. It's rather messy to overcome this, but heres a program to do it. Note — it only works for positive numbers and values less than 1,000,000,000!

```
10 INPUT"VALUE";V
20 X=INT(V*100+.5)/100
30 N=INT(X):D=INT((X-N)*100+.5)/100
40 N$=STR$(N):D$=STR$(D)
50 IF D=0 THEN D$=".00":GOTO 80
60 IF LEN(D$)=3 THEN D$=RIGHT$(D$,2)+"0":GOTO 80
70 D$=RIGHT$(D$,3)
80 PRINT TAB(20-LEN(N$));N$+D$
90 GOTO 10
```

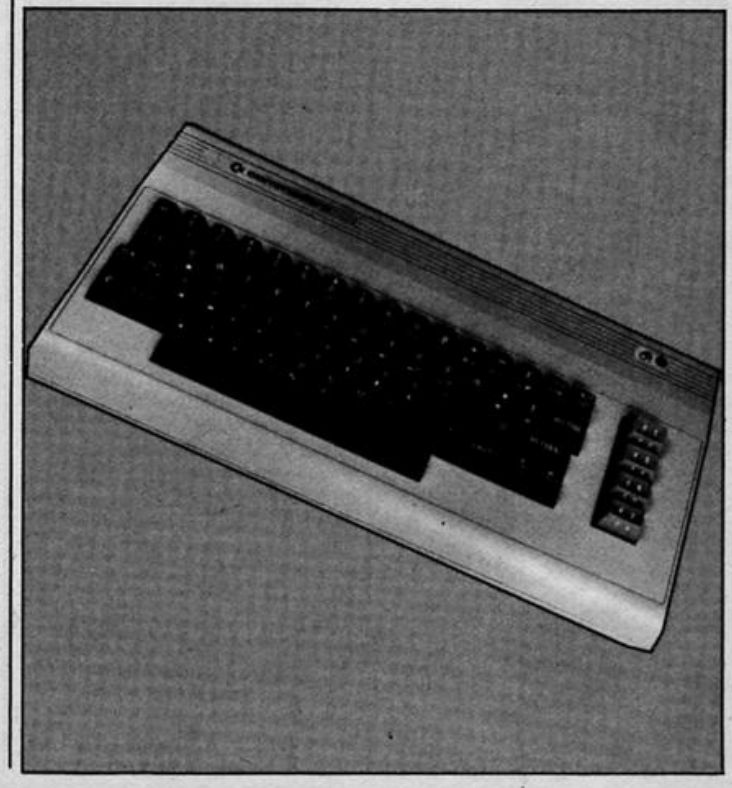
Explanation — First, I hope you remembered the rounding technique used in lines 20 and 30 to get the values to two decimal places. Why do it twice? Well, unfortunately the arithmetic in BASIC is not perfect to more than eight decimal places. Enter X=12.345: PRINT X-INT(X). Instead of .345 you get .344999999! So what about lines 60 and 70? If you enter a value like 64.3, D$ will be space, decimal point, three. So we want to remove the space and add a zero. RIGHT$ takes the last, or rightmost characters from a string variable. In 60 we want the last two characters, in 70 we want the last three. It is a messy program, but the output is neat.

As well as RIGHT$, there is LEFT$ and MID$ to pick characters from the start or middle of string variables respectively. With MID$, you need to specify which position to start from, as well as how many characters to pick. Look at these programs —

```
10 L$="ABCDEFGHIJKL"
20 L=LEN(L$)
30 INPUT"HOW MANY LETTERS";N
40 INPUT"STARTING WHERE";P
50 IF N+P>L THEN PRINT"IMPOSSIBLE":GOTO 30
60 PRINTMID$(L$,P,N)
70 END
100 INPUT"ENTER YOUR NAME";N$
110 L=LEN(N$)
120 FOR I=1 TO L
130 PRINTMID$(N$,I,1)
140 NEXT I
150 PRINT:PRINT"BACKWARDS IT'S"
160 FOR I=L TO 1 STEP -1
170 PRINTMID$(N$,I,1);
180 NEXT I
190 END
200 INPUT"ENTER YOUR NAME";N$
210 L=LEN(N$)
220 FOR I=1 TO L
230 PRINT LEFT$(N$,I)
240 NEXT I
```

There are two other functions in this category, ASC and CHR$. ASC is short for ASCII, which standard for "American Standard Code for Information Interchange." All characters and actions have a code. For example, pressing return generates the code 13, switching from upper to lower case is code 14. You can check if a character is a digit by testing if it's code is between 48 and 57 inclusive.

To generate any character or action by its code use PRINT CHR$(that code). PRINT CHR$(113) produces a black blob, PRINT CHR$(144) changes the colour of output to black. Don't try PRINT CHR$(31) — look up page 135 in the Commodore 64 manual to find out what would happen.



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AMSTRAD GAME

DRACULA ON ZOMBIE ISLAND

In this game by David and Bryan Lewis you play the star role — as Dracula

Scenario: Zombie Island, where you, as Dracula, are luring the hapless creatures into bottomless pits so that you escape capture and death.

The game starts with three zombies on-screen, breakdancing while they hunt you down. You use the numeric keypad to move Dracula, and as you clear a screen, an extra zombie appears. Alternatively, if you die, there is a zombie less.

The idea is to fight and beat an eight-zombie screen and this is rewarded with a cavalcade of colour and sound. The pits to lure them into are placed randomly on-screen, both in number and location. There is also an exit blue door around the perimeter of the screen. This escape door brings you to a new room, but with the same number of zombies that were on the original screen.

The strength of this game is its simplicity for children and its wonderful stereo sounds. Boink, drop, splash, eat, tear and step all accompany the breakdancing, out of sync zombies. In the background you'll hear Grieg's In the Hall of the Mountain King.

How it works

100 program title
110-210 initialise variables and windows
230-310 initialise move and screen arrays
330-400 set up potholes and zombie positions
420-450 put Dracula into screen array
460 if first game, allow player to select demo mode or standard play
470 set screen colours
480-490 print title in three dimensions
500 print demo mode message, if in this mode
520-610 print initial screen positions
630-690 input move and move Dracula
700-730 check for collisions
750-840 move zombie routine
790-820 check for zombie collisions
840 check if all zombies killed
860-930 print end of game messages, if play again, process accordingly
940-980 finished game routine
1010-1020 stereo sound for Dracula moving
1050-1070 stereo sound for zombies moving
1090-1120 stereo sound for zombies bumping into each other
1140-1170 stereo sound for Dracula escaping to next island
1190-1240 stereo sound for someone falling into the pit
1260-1320 stereo sound for Dracula being killed and eaten by zombies
1340-1430 stereo real time music routine
1450-1550 data for music
1570 data for movement routines
1590-1690 instruction subroutine
1700-1730 real time routine to animate zombies
1740 reruns program if escape is pressed

```
100    REM    Zombie Island   11/9/84          B. & D. Lewis.
110 RANDOMIZE TIME:MODE 1:DEFINT a-z
120 PAPER 0:PAPER #2,0:ON BREAK GOSUB 1740
130 DIM screen(24,14),zpos(9,2),xoff(9),yoff(9)
140 WINDOW #1,1,40,16,16:WINDOW #2,1,40,18,25
150 pit=1:human=2:zombie=3:space=4:home=5
160 zom=248:level=3:play=0:flag=0:pass=0:pitch=1
170 man$=CHR$(22)+CHR$(1)+CHR$(253)+CHR$(8)+CHR$(15)+CHR$(1)+CHR$(254)+CHR$(8)+C
HR$(15)+CHR$(3)+CHR$(255)+CHR$(22)+CHR$(0)
180 SYMBOL AFTER 253
190 SYMBOL 253,&10,&28,&92,&7C,&10,&28,&28,0
200 SYMBOL 254,0,&10,0,0,&38,0,0,&6C
210 SYMBOL 255,&28,0,&28,0,&44,&D6,&D6,0
220    REM   Initialize move & screen arrays
230 RESTORE 1570:FOR n=1 TO 9:READ xoff(n),yoff(n),direction$(n):NEXT n
240 RESTORE:ON SQ(2) GOSUB 1340
250 GOSUB 1590
260 FOR n=1 TO 24:screen(n,1)=pit:screen(n,14)=pit:NEXT n
270 FOR n=2 TO 13:screen(1,n)=pit:screen(24,n)=pit:NEXT n
280 dummy=REMAIN(0)
290 FOR n=2 TO 23:FOR m=2 TO 13
300    screen(n,m)=space
310 NEXT m,n
320    REM    Set up potholes & zombie positions
330 FOR n=1 TO 5+RND*9
340    screen(2+RND*21,2+RND*11)=pit
350 NEXT n
360 FOR znum=1 TO level
370    zpos(znum,1)=2+RND*21
380    zpos(znum,2)=2+RND*11
390    screen(zpos(znum,1),zpos(znum,2))=zombie
400 NEXT znum:znum=level
410    REM    Compute landing position
420 x=4+INT(RND*17)
430 y=4+INT(RND*7)
440 IF screen(x,y)<>space THEN 420
450 screen(x,y)=human
460 IF play=0 THEN a$=LOWER$(INKEY$):IF a$<>" " AND a$<>"d" THEN 460
    ELSE demo=0:IF a$="d" THEN demo=1
470 CLS:BORDER 0:INK 0,0:INK 1,21:INK 2,20:INK 3,15:play=1:moff=0
480 TAG:FOR n=1 TO 6:m=n+moff:IF n=3 THEN moff=1
490 PLOT 470-n*n,300+(30*demo)-n*n,m:PRINT "ZOMBIES";:NEXT n:TAGOFF
500 IF demo THEN PEN 1:LOCATE 27,10:PRINT "Demo Mode":PEN 3:LOCATE 27,11:PRINT "
ESC ESC":PEN 2:LOCATE 27,12:PRINT "to continue"
510    REM    Print the state of play
520 FOR n=1 TO 14:FOR m=1 TO 24
530    man=screen(m,n):IF man=space THEN 580
540    PEN man:LOCATE m,n
550    IF man=pit THEN PRINT "O";:GOTO 580
560    IF man=zombie THEN PRINT CHR$(zom);:GOTO 580
570    IF man=human THEN PRINT man$;
580 NEXT m:PRINT :NEXT n
590 IF RND>0.5 THEN n1=1+RND*13:IF RND<0.5 THEN m1=1   ELSE m1=24
    ELSE m1=1+RND*23:IF RND<0.5 THEN n1=1   ELSE n1=
14
600 LOCATE m1,n1:PEN human:PRINT "O"
610 screen(m1,n1)=home:dummy=SQ(2)
620    REM    I/p move & check position
630 EVERY 30 GOSUB 1700:PEN #1,human:LOCATE #1,1,1:PRINT #1,"Your move ";:CLS #2
640 IF demo THEN a=CINT(1+RND*8):PRINT #1,direction$(a):GOTO 670
650 a$=INKEY$:IF a$<"1" OR a$>"9" THEN 650
    ELSE WHILE INKEY$<>"":WEND
660 a=ASC(a$)-48:PRINT #1,direction$(a)
670 screen(x,y)=space:dummy=REMAIN(0)
680 PEN human:LOCATE x,y:PRINT" ";
690 x=x+xoff(a):y=y+yoff(a):GOSUB 1010
```

```
700 IF screen(x,y)=home THEN PEN human:PRINT #2,"YOU HAVE ESCAPED TO ANOTHER ISL
AND !!":level=level+1:GOSUB 1130:GOTO 890
710 IF screen(x,y)=space THEN screen(x,y)=human:LOCATE x,y:PRINT man$;:GOTO 750
720 IF screen(x,y)=zombie THEN PEN #2,zombie:PRINT #2,"STRAIGHT INTO THE ZOMBIES
 MOUTH":GOSUB 1250:GOTO 890
730 IF screen(x,y)=pit THEN PEN #2,pit:PRINT #2,"HEAD FIRST INTO THE PIT":GOSUB
1190:GOTO 890
740    REM    Move all zombies towards target
750 z2=1
760 zxold=zpos(z2,1):zyold=zpos(z2,2)
770 screen(zxold,zyold)=space:PEN zombie:LOCATE zxold,zyold:PRINT " ";
780 zx=zxold+SGN(x-zxold):zy=zyold+SGN(y-zyold):GOSUB 1050
790 IF screen(zx,zy)=human THEN PEN #2,zombie:PRINT #2,"YOU'RE ZAPPED BY A ZOMBI
E":LOCATE zx,zy:PRINT CHR$(zom);:screen(zx,zy)=zombi
e:zpos(z2,1)=zx:zpos(z2,2)=zy:GOSUB 1250:GOTO 890
800 IF screen(zx,zy)=zombie THEN PEN #2,pit:PRINT #2,"BOINK-----> HERE COME THE
ZOMBIES":screen(zxold,zyold)=zombie:LOCATE zxold,zyo
ld:PRINT CHR$(zom);:GOSUB 1090:GOTO 830
810 IF screen(zx,zy)=pit THEN PEN #2,2:PRINT #2,"SPLASH GOES A ZOMBIE":GOSUB 119
0:FOR z3=z2 TO znum:zpos(z3,1)=zpos(z3+1,1):zpos(z3,
2)=zpos(z3+1,2):NEXT z3:znum=znum-1:GOTO 840
820 IF screen(zx,zy)=space THEN screen(zx,zy)=zombie:zpos(z2,1)=zx:zpos(z2,2)=zy
:LOCATE zx,zy:PRINT CHR$(zom);
830 z2=z2+1
840 IF z2<=znum THEN 760
850    REM    Are there any more zombies?
860 PEN #1,zombie:LOCATE #1,27,1:PRINT #1,znum;"zombies":IF znum>=1 THEN 630
870 PEN #2,human:PRINT #2:PRINT #2,"WELL DONE --- THE ZOMBIES ARE EXTINCT"
880 PRINT #2,"YOU ESCAPED --- ";:level=level+2:IF level>9 THEN 940
890 PRINT #2,"ANOTHER GAME  (y/n) ? ";:level=level-1:IF level<1 THEN level=1
900 EVERY 30 GOSUB 1700:screen(m1,n1)=pit:IF demo THEN a$="yes":GOTO 930
910 IF INKEY$<>"" THEN 910
920 a$=LOWER$(INKEY$):IF a$<>"n" AND a$<>"y" THEN 920
930 IF a$="n" THEN PEN #2,zombie:PRINT #2,"NO";:PEN pit:LOCATE 1,24:END
    ELSE PEN #2,human:PRINT #2,"YES";:ON SQ(2) GOSUB
 1340:GOTO 280
940 INK zombie,0,26:PAPER #2,1:PEN #2,zombie:PRINT #2:PRINT #2:PRINT #2,"YIPPEE
!!    YOU'VE KILLED THEM ALL !!  ";
950 FOR n=0 TO 26:INK 0,n:BORDER 26-n:SOUND 7,RND*n*99,25,7:NEXT n:PAPER #2,2
960 INK 0,3:BORDER 3:PRINT #2:PRINT #2:PRINT #2,,"GOODBYE  (for now !!)"
970 RESTORE:ON SQ(2) GOSUB 1340
980 GOTO 980
990    REM    SOUND SUBROUTINES
1000    REM    Human running
1010 steps=ABS((x<9)-2*(x>8 AND x<17)-4*(x>16))
1020 SOUND steps,200,4,7:SOUND 7,0,2,0
1030    RETURN
1040    REM    Zombie running
1050 steps=ABS((zx<9)-2*(zx>8 AND zx<17)-4*(zx>16))
1060 SOUND steps,700,4,6:SOUND 7,0,2,0
1070    RETURN
1080    REM    Boink !!
1090 steps=ABS((zx<9)-2*(zx>8 AND zx<17)-4*(zx>16))
1100 FOR boink=1 TO 4000 STEP 25:SOUND steps,boink,1,7-boink/1500,0,0,2
1110 NEXT boink
1120    RETURN
1130    REM    Escaped to next island
1140 FOR n=1000 TO 1 STEP -9
1150 SOUND 1,n,4,(1000-n)/145:SOUND 4,1000-n,4,(1000-n)/145:SOUND 2,RND*999,2,1,
0,0,15
1160 NEXT n
1170    RETURN
1180    REM    Fall into pit
1190 FOR drop=0 TO 50 STEP 2:SOUND 5,drop*40,10,7-(drop/10)
1200 NEXT drop
```

```
1210 FOR splash=800 TO 250 STEP -15
1220    SOUND 5,splash,3,splash/200,0,0,15+splash/50
1230 NEXT splash
1240    RETURN
1250    REM    Caught by Zombies
1260 FOR n=7 TO 2 STEP -1:FOR eat=1 TO 4000 STEP 90
1270    SOUND 5,RND*eat,2,n,0,0,7-n
1280 NEXT eat,n
1290 FOR n=7 TO 1 STEP -1:FOR tear=999 TO 1 STEP -30
1300    SOUND 5,tear,1,n,0,0,1
1310 NEXT tear,n
1320     RETURN
1330    REM    Real-time music routine
1340 note1=note:READ note
1350 IF note=1 THEN pass=pass+1:IF pass=2 THEN RESTORE 1460:GOTO 1340
1360 IF (flag=1 AND pass=3) THEN pitch=pitch+1:IF pitch>3 THEN pass=0:pitch=1:fl
ag=0:SOUND 7,0,49,0:RESTORE 1450:GOTO 1340
                                ELSE pass=0:flag=0:RESTORE 1460:GOTO 1340
1370 IF note=2 THEN flag=flag+1:RESTORE 1460:GOTO 1340
1380 IF note<5 THEN 1340
1390 IF note=0 THEN 1420
1400 IF note<>note1 THEN SOUND 7,0,6,0
1410 SOUND 1,note/pitch-1,9,4:SOUND 2,note/pitch,9,5:SOUND 4,note/pitch+1,9,4
1420 ON SQ(2) GOSUB 1340
1430    RETURN
1440    REM    Data for music  -    PEER GYNT              In the hall of the moun
tain king (1st part)       by E. GRIEG
1450 DATA 758,758,758,758,758,758,758,758,758,758,758,758
1460 DATA 1136,1136,1012,1012,956,956,851,851,758,758,956,956,758,758,758,758
1470 DATA 804,804,1012,1012,851,851,851,851,0,851,851,1012,1012,851,851,851,851
1480 DATA 1136,1136,1012,1012,956,956,851,851,758,758,956,956,758,758,568,568
1490 DATA 638,638,758,758,956,956,758,758,638,638,638,638,638,638,638,638
1500 DATA 1
1510 DATA 758,758,676,676,602,602,568,568,506,506,638,638,506,506,506,506
1520 DATA 478,478,602,602,478,478,478,478,506,506,638,638,506,506,506,506
1530 DATA 758,758,676,676,602,602,568,568,506,506,638,638,506,506,506,506
1540 DATA 478,478,602,602,478,478,478,478,506,506,506,506,506,506,506,506
1550 DATA 2
1560    REM    Data for numeric keypad
1570 DATA -1,1,"SOUTH-WEST",0,1,"SOUTH     ",1,1,"SOUTH-EAST",-1,0,"WEST      ",
0,0,"STOPPED   ",1,0,"EAST      ",-1,-1,"NORTH-WEST"
,0,-1,"NORTH     ",1,-1,"NORTH-EAST"
1580    REM    Instructions
1590 BORDER 3:INK 0,3:INK 1,26:INK 2,16:INK 3,19
1600 PEN 2:LOCATE 14,1:PRINT "COUNT DRACULA",,"     ON",,,"ZOMBIE ISLAND"
1610 PEN 1:LOCATE 1,6:PRINT "One foggy night whilst out for a bite,  you take a
short-cut over Haiti (eat-e) and disaster strikes !!
"
1620 PRINT "Your bat hits a passing voodoo shaman & you find yourself on ZOMBIE
ISLAND !!"
1630 PRINT "You must lure the hapless creatures intothe bottomless pits scattere
d about the"
1640 PRINT "Island (they are attracted by your cape,";
1650 PRINT "and cannot see the pits)."
1660 PEN 3:PRINT :PRINT "To move, use the numeric keypad (1 to 9)as follows :-"
1670 LOCATE 14,18:PRINT "NW    N    NE":LOCATE 15,20:PRINT "W  STILL  E":LOCATE
14,22:PRINT "SW    S    SE"
1680 PEN 2:LOCATE 2,25:PRINT "Press D for demo, or SPACE BAR to play";
1690    RETURN
1700 PEN zombie:FOR zdance=1 TO znum
1710    zom=248+CINT(RND*3):LOCATE zpos(zdance,1),zpos(zdance,2):PRINT CHR$(zom)
;
1720 NEXT zdance
1730    RETURN
1740 RUN
```

ORIC UTILITY

CHARACTER SET

Richard Powell's useful utility allows you to create your own character sets and graphics

This program comes in useful for creating your own character sets and graphics. It gives an enlarged view of the character in a grid and allows you to modify it as you like.

You can invert the graphics characters, switch them around, arrange them in any order in the grid. They can also be swapped, copied and changed.

In a standard character set you load a group of characters into the grid by typing 'R'. You'll see FIRST CHAR? appear on the command line. Enter the first character you require: ASCII code (32-119). Press Return.

The grid will fill with characters, the ASCII codes for which are shown in the character codes grid.

Move the cursor using the arrows. To invert the bit under the cursor press Space. The change is implemented immediately.

To get any single character to any position in the grid:
1 move cursor to where it is required
2 press 'G'. ASCII code of char, Return

To invert a whole character press 'I', and to memorise a character press 'M'. It will be shown in the bottom right-hand corner of the screen. See the command summary for other commands.

With a little practice the program becomes easy to use. Any characters may be placed in the grid using 'G' and 'R' commands so that graphics which require more than one character can be made to line up.

Using commands together allows you to swap and copy. For example, to copy a character on to another character cell:
1 'M'emorise first character
2 'G'et the character to copy it on to
3 'N' — recall memory into new cell

Return gives the alternate character set, which is generally used for user graphics.

Please note: Only one copy of a given character can exist in the grid at any one time.

Once you have assembled the graphics you require, press 'E' to exit. The character set may now be SAVEd on cassette for future use (refer to Oric user manual) or the program re-run.

Command summary

arrows move the cursor
C arrow moves the cursor a whole character in given direction
space invert bit under cursor
G asks 'CH.RQD?' Enter ASCII code of character required and it will be shown in current character space (NB: ASCII codes 32 to 127 only)
R asks 'FIRST CHAR?' Enter ASCII code of first character to go in grid (32 to 119). Will fill grid with nine characters from the start code
DEL clear whole character
S sets all bits in character
I invert all bits in character
M memorise character
N recall memory
' swap memory and character
Return swap between alternate and standard character set
E exit

Variables

A,B,I,J loop variables
ST% 127 = Bit ON 0 = Bit OFF
K,K$ keyboard input
CH,CH$ character number input by user
X,Y x and y pointers to screen (various uses)
E error flag 0 = OK, 1 + error
A$(0) to A$(63) string to hold bit patterns
CN(X,Y) character number in grid position x,y (grid X = 1 to 3, y = 1 to 3
S character set (0 = standard, 1 = alternate)
XM,YM x and y of current position in grid (X = 1 to 3, Y = 1 to 3)
AD memory address of character
XC,YC x and y position within a character
XP,YP pointers to actual screen position

How it works

10-204 initialisation
249-290 set up screen
290 default to standard character set (s = 0)
300 top character
310-350 read command from keyboard execute appropriate subroutine
400 draw cursor
500 draw character grid
600 copy character to screen
700 show character codes
800 invert a bit
900 mask a bit into character in memory
1000 get character required
1100 blank a character
1150 fill in a character
1200 invert character
1300 memorise current character
1350 recall memory
1400 swap memory and character
1500 character skip
1600 read string of consecutive characters
1900 delete any messages
2000 instructions

```
5 REM  ********************************
10 REM *                              *
20 REM * CHRRACTER SET MODIFICATION   *
50 REM *                              *
60 REM *   WRITTEN BY R.POWELL 1983   *
70 REM *                              *
80 REM *       VERSION 1.2            *
90 REM *                              *
100 REM********************************
140 REM
150 REM
151 CLS:GOSUB 2000
```

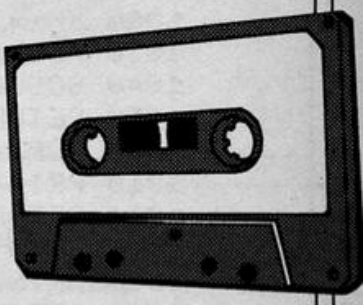
```
159 INK7:PAPER0
160 CLS:PRINT"SETTING ARRAYS... PLEASE WAIT"
178 DIMA$(63)
179 FOR J=5 TO 0 STEP-1:K=2↑J
180 FOR I=0 TO 63
181 IF (I AND K)=>1 THEN A$(I)=A$(I)+CHR$(127) ELSE A$(I)=A$(I)+"["

182 NEXT:NEXT
200 FOR I=46080+(91*8) TO 46087+(93*8)
202 POKEI,32:NEXT
203 FOR I=0 TO 6: POKE(46080+(92*8)+I),0:NEXT
204 POKE46815,63:POKE46823,63
249 CLS
250 FOR Y=17 TO 1 STEP-8
252 PLOT0,Y-1,"\"
255 FORX=1TO13STEP6
260 GOSUB500
265 NEXT:NEXT
270 FORI=1TO14:PRINTCHR$(10);:NEXT
272 FORI=1TO22:PRINTCHR$(9);:NEXT
275 GOSUB700
290 S=0:PLOT1,26,"STANDARD CHAR. SET"
300 XM=1:YM=1:XC=0:YC=0
310 GOSUB400
311 K$=KEY$:IFK$=""THEN311
312 K=ASC(K$)
313 PLOT22,14,"                    "
331 IFK =127THENGOSUB1100
332 IFK$="S"THENGOSUB1150
333 IFK$="I"THENGOSUB1200
334 IFK$="M"THENGOSUB1300
336 IFK$=" "THENGOSUB0800
341 IFK$="E"THENCLS:PRINT"TERMINATED":END
342 PLOTX,Y,ST%
343 IFK$="N"THENGOSUB1350
344 IFK$=","THENGOSUB1400
345 IFK>7ANDK<12THEN ON K-7 GOSUB450,460,470,480
346 IFK$="G"THENGOSUB1000
347 IFK$="C"THENGOSUB1500
348 IFK$="R"THENGOSUB1600
349 IFK = 13THEN GOTO1700
350 GOTO310
400 REM**DRAW CURSOR
410 X=XM*6-5+XC:Y=YM*8-7+YC
415 ST%=SCRN(X,Y)
420 IFST%>126THENPLOTX,Y,171ELSEPLOTX,Y,43
430 RETURN
450 REM
451 IFXM=1ANDXC=0THENRETURN
452 IFXC>0THENXC=XC-1ELSEXM=XM-1:XC=5
455 RETURN
460 REM
461 IFXM=3ANDXC=5THENRETURN
462 IFXC<5THENXC=XC+1ELSEXM=XM+1:XC=0
```

```
465 RETURN
470 REM
471 IFYM=3ANDYC=7THENRETURN
472 IFYC<7THENYC=YC+1ELSEYM=YM+1:YC=0
475 RETURN
480 REM
481 IFYM=1ANDYC=0THENRETURN
482 IFYC>0THENYC=YC-1ELSEYM=YM-1:YC=7
485 RETURN
499 END
500 REM ** DRAW CHARACTER GRID **
510 REM          AT X,Y
520 PLOT X,Y-1,"[\\\\\\]"
530 FORI=0TO7:PLOTX,Y+I,"[[[[[[]":NEXT
535 RETURN

600 REM * COPY CHARACTER TO GRID **
605 REM      CHAR=CH  POSITION = XM,YM
610 AD=46080+(S*1024)+(CH*8)
615 XP=XM*6-5:YP=YM*8-7
620 FORI=ADTOAD+7
630 PLOTXP,YP,A$(PEEK(I)AND63)
660 YP=YP+1
670 NEXT
680 RETURN
700 REM ** DISPLAY CURRENT WORKING SQUARES **
710 PLOT22,1,"CHARACTER CODES"
720 PLOT22,2,"-+---+---+---+-"
730 FORJ=1TO3:FORI=1TO3
735 IFCN(I,J)<100THENC$=""+STR$(CN(I,J))ELSEC$=""+RIGHT$(STR$(CN(
I,J)),3)
740 PLOT19+(4*I),1+2*J,C$
745 PLOT21,9+J,8+S:IFCN(I,J)>31THENPLOT22+I,9+J,CN(I,J)
750 NEXT:PLOT35,1+2*J,""
760 PLOT23,2*J+2,"+---+---+---+"
770 NEXT
780 RETURN
800 REM*** INVERT WHATS THERE***
810 IFST%=127THENST%=91ELSEST%=127
820 GOSUB900
830 RETURN
900 REM** MASK IN ST%**
910 AD=46080+(S*1024)+(CN(XM,YM)*8)+YC
920 IFST%=127THEN950
930 I%=NOT(2↑(5-XC))
935 POKEAD,(PEEK(AD)ANDI%)
940 RETURN
950 I%=2↑(5-XC)
960 POKEAD,(PEEK(AD)ORI%)
970 RETURN
1000 REM** READ CHARACTER COMMAND **
1010 PRINT"CH. ROD";:INPUTCH$:CH=VAL(CH$)
1012 GOSUB1900
1014 IFCH<32ORCH>127THEN1010
```

```
1015 E=0
1016 FORI=1TO3:FORJ=1TO3:IFCN(I,J)=CH THENE=1
1017 NEXT:NEXT
1018 IFE=1THENPLOT22,14,"CHAR IN USE":RETURN
1020 GOSUB600
1025 CN(XM,YM)=CH
1030 GOSUB700
1040 RETURN
1100 REM**BLANK CHARRCTER**
1110 AD=46080+(1024*S)+CN(XM,YM)*8
1120 FORI=0TO7:PLOTXM*6-5,YM*8-I,"[[[[[[[":POKEAD+I,0:NEXT
1130 ST%=91:RETURN
1150 REM**FILL CHARACTER**
1160 AD=46080+(1024*S)+CN(XM,YM)*8
1170 FORI=0TO7:POKEAD+I,63:NEXT:CH=CN(XM,YM):GOSUB600
1180 ST%=127:RETURN
1200 AD=46080+(1024*S)+CN(XM,YM)*8
1210 FORI=0TO7:POKEAD+I,(NOT PEEK(AD+I))AND 63:NEXT
1215 CH=CN(XM,YM)
1220 GOSUB600:IFST%=127THENST%=91ELSEST%=127
1230 RETURN
1300 REM**MEMORY**
1310 AD=46080+(1024*S)+(CN(XM,YM)*8)
1320 FORI=0TO7:POKE1024+I,PEEK(AD+I):NEXT
1330 GOTO1450
1350 REM**MEMORY RECAL**
1360 AD=46080+(1024*S)+(CN(XM,YM)*8)
1370 FORI=0TO7:POKEAD+I,PEEK(1024+I):NEXT
1375 CH=CN(XM,YM)
1380 GOSUB600:GOTO1450
1400 REM**SWAP MEM & CHAR**
1410 AD=46080+(1024*S)+(CN(XM,YM)*8)
1415 FORI=0TO7:K=PEEK(AD+I):POKEAD+I,PEEK(1024+I):POKE1024+I,K:NEXT
1420 CH=CN(XM,YM)
1430 GOSUB600
1450 AD=1024
1451 PLOT29,26,"MEMORY"
1455 PLOT29,16,"\\\\\\\"
1456 FORI=0TO7:PLOT35,17+I,"]":NEXT
1460 XP=29:YP=17:GOTO620
1500 REM** BLOCK SKIP **
1505 PLOT23,14,"GIVE DIRECTION"
1510 GETK$
1515 PLOT23,14,"                    "
1520 K=ASC(K$):ONK-7GOTO1550,1560,1570,1580
1545 RETURN
1550 IFXM>1THENXM=XM-1
1555 RETURN
1560 IFXM<3THENXM=XM+1
1565 RETURN
1570 IFYM<3THENYM=YM+1
1575 RETURN
1580 IFYM>1THENYM=YM-1
1585 RETURN
```



```
1600 REM**CONSECUTIVE STANDARD CHARS**
1605 REM
1610 INPUT"FIRST CHAR";CH$:CH=VRL(CH$)
1620 GOSUB1900
1630 IFCH<32ORCH>119THEN1610
1640 FORB=1TO3
1650 FORA=1TO3:CN(A,B)=CH
1660 XM=A:YM=B:GOSUB600
1665 CH=CH+1:NEXT:NEXT
1670 GOSUB700:RETURN
1700 REM ** SWITCH CHARACTER SETS **
1710 S=1-S
1720 GOSUB1800
1730 IF S=0 THEN 290
1740 PLOT1,26,"ALTERNATE CHR.SET"
1750 GOTO 300
1800 FORB=1TO3
1810 FORA=1TO3:CH=CN(A,B)
1820 XM=A:YM=B:GOSUB600
1830 NEXT:NEXT
1840 GOSUB 700
1850 RETURN
1900 FORI=1TO22:PRINTCHR$(9);:NEXT:PRINTCHR$(11);
1910 PRINT"                    ";:FORI=1TO16:PRINTCHR$(8);:NEXT
1930 RETURN
2000 PRINT" THIS PROGRAM ALLOWS YOU TO MODIFY"
2005 PRINT
2010 PRINT"THE CHARACTER SETS IN THE COMPUTER"
2015 PRINT
2020 PRINT"BY GIVING YOU AN ENLARGED WORK PAD"
2025 PRINT
2030 PRINT"AREA WHICH WILL DISPLAY UP TO NINE"
2035 PRINT
2040 PRINT"CHARRACTERS.  BY USING VARIOUS KEYS "
2045 PRINT
2050 PRINT"THE CHARRACTERS  MAY BE CHANGED  TO"
2055 PRINT
2060 PRINT"PRODUCE USER DEFINED GRAPHICS FOR"
2065 PRINT
2070 PRINT"GAMES ETC...":PRINT
2080 GOSUB 3000
2100 CLS
2110 PRINT" THE KEYS ARE:-":PRINT
2120 PRINT"ARROWS - MOVE THE CURSOR"
2125 PRINT
2130 PRINT"SPACE  - INVERTS THE BIT UNDER CURSOR":PRINT
2140 PRINT"DEL    - CLEARS ALL CHARACTER BITS"
2150 PRINT"S      - SETS ALL CHARACTER BITS"
2160 PRINT"I      - INVERTS ALL CHARACTER BITS"
2165 PRINT
2170 PRINT"G      - GET SINGLE CHARACTER"
2180 PRINT"R      - READ 9 CHARS. TO GRID"
2185 PRINT
2190 PRINT"M      - MEMORIZE CHARACTER"
```

```
2200 PRINT"N        - RECALL MEMORY"
2210 PRINT";        - SWAP MEMORY AND THIS CHAR"
2215 PRINT
2220 PRINT"C ARROW- SKIP CHAR IN GIVEN DIRECTION"
2225 PRINT
2230 PRINT"RETURN - SWITCH TO OTHER CHAR SET"
2235 PRINT
2240 PRINT"E        - END RUN"
3000 PRINT:PRINT"*PRESS ANY KEY*"
3010 GET A$:RETURN
```

ARCADE HARDWARE

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INFOCOM ADVENTURES FOR THE TI99/4A

The ultimate in adventures for the Texas computer. Infocom games are more like taking part in a novel than playing an adventure game. Expensive, yes, but worth every penny.

System requirements for all INFOCOM games are as follows :

Disc Controller, at least one disc drive and 32k R.A.M. One of the following modules will also be required : Extended Basic, Mini-Memory or Editor Assembler.

ZORK I	#39.95
ZORK II	#44.95
ZORK III	#44.95
WITNESS	#39.95
DEADLINE	#49.95
INFIDEL	#44.95
SORCERER	#44.95
CUT THROATS	#39.95
HITCH HIKERS GUIDE TO THE GALAXY.	#39.95

A wide range of other games, hardware and software is always available. Please ask for an up-to-date list of products for TI99/4A

DUCKWORTH ADVENTURES

COLOSSAL CAVE ADVENTURE
by Peter Gerrard

The original and best mainframe adventure, now available for the Amstrad and Commodore 64. Unlike other versions, this game follows the original layout, complete with all the infuriating traps and bewildering mazes, not to mention the Troll, the Dragon, the Pirate or the mysterious shadowy figure. You can't call yourself an adventurer until you have conquered this mammoth quest! As a concession to the faint-hearted, you are allowed to resurrect yourself twice. £7.95

ISLAND ADVENTURE
by Peter Gerrard

The setting for this fascinating adventure game for the Commodore 64 is a desert island, on which you are stranded. Try to find your way off the island, avoiding monsters and other hostile inhabitants and collecting treasures. There is an option to save the current game status on tape. The game will accept a wide variety of words and is originally responsive. £7.95

MOUNTAIN PALACE ADVENTURE
by John D. Ryan

This devious adventure for the Amstrad and Commodore 64 is set in a long-lost palace in a distant land. You have heard rumours of the vast wealth to be gained by anyone brave enough to enter the palace. Unfortunately, the task turns out to be more difficult than you imagined, as the palace has some sinister inhabitants. Even the palace seems to have a mind of its own! There is an option to save your progress on tape at any time. £7.95

CASTLE DRACULA
by Ray Davies

Available for the Amstrad, BBC 32K and the Commodore 64, this game starts in a deserted village, overshadowed by Dracula's sinister castle. Your mission is to enter the castle and serve His Putrescence a well prepared stake. There are many useful objects to be found along the way, and from time to time the program can be persuaded to give you hints. There are 100 locations to explore and you have the option to save your progress on tape at any time. £7.95

Write in for a descriptive catalogue (with details of cassettes).

Access VISA

DUCKWORTH
The Old Piano Factory, 43 Gloucester Crescent, London NW1 7DY
Tel: 01-485 3484

SPECTRUM GAME

ZOO BREAK-OUT

Locate all the wild beasts and get them back in their cages in this zoo game by David Carter

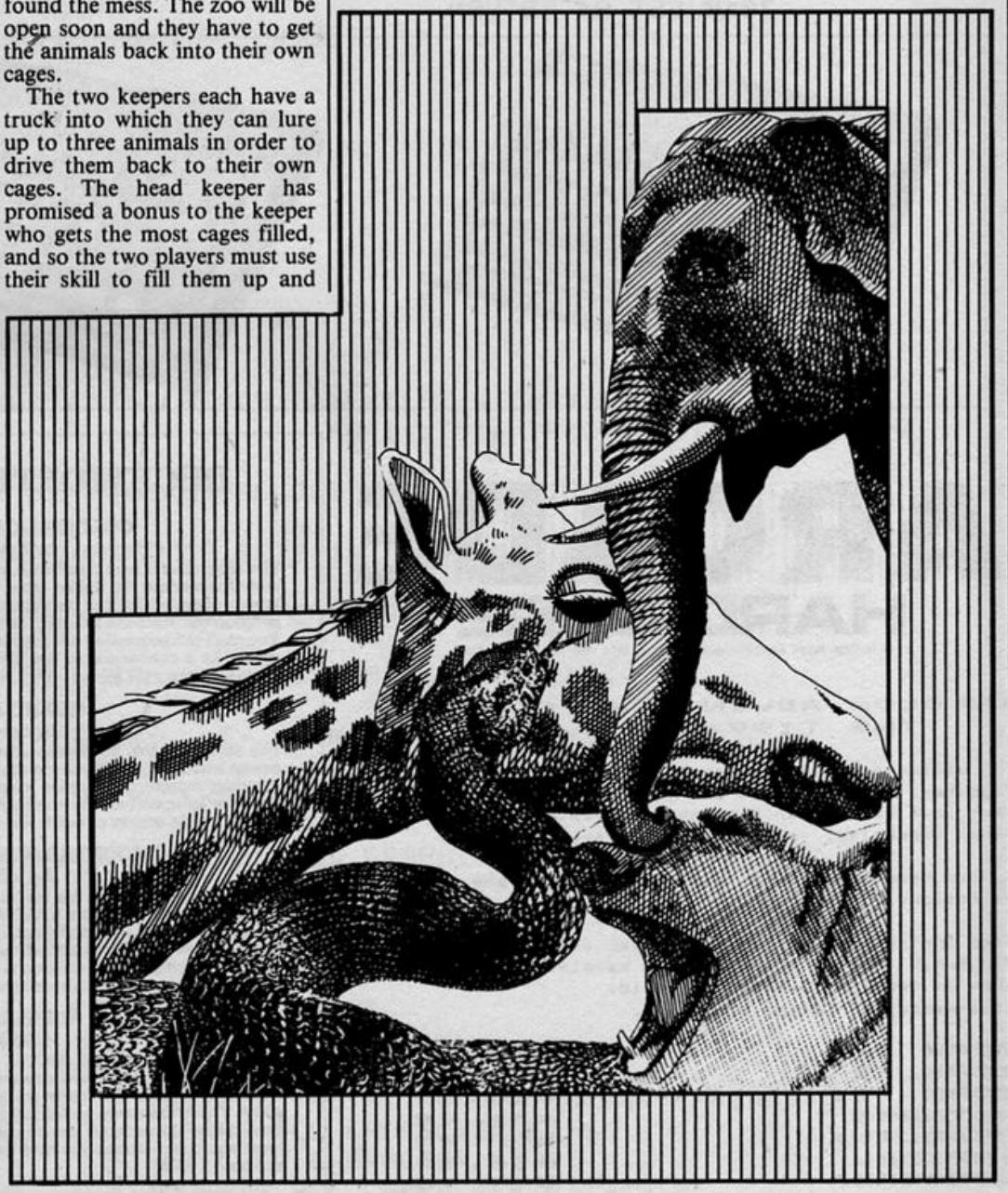
Last night all the animals broke out of their cages and wreaked havoc in the zoo. Then they all climbed back, but into all the wrong cages.

This morning the keepers have come in to work and found the mess. The zoo will be open soon and they have to get the animals back into their own cages.

The two keepers each have a truck into which they can lure up to three animals in order to drive them back to their own cages. The head keeper has promised a bonus to the keeper who gets the most cages filled, and so the two players must use their skill to fill them up and prevent their opponent from filling any.

So, start moving those animals . . . and happy hunting!

Please note: All the Spectrum listings in HCW are printed to a special format. All user defined characters are printed as capital letters but with an underline. In order to type them into your computer you need to place the machine in GRAPHIC mode and then press the capital letter indicated. If you follow these instructions to the letter the graphic characters will be shown on screen when you run the program.



```
10 GO SUB 1000: REM title
20 GO SUB 1200: REM define arrays
30 GO SUB 1500: REM input players names
40 GO SUB 2000: REM draw zoo
50 GO SUB 9000: REM set random animals
60 LET x=19
```

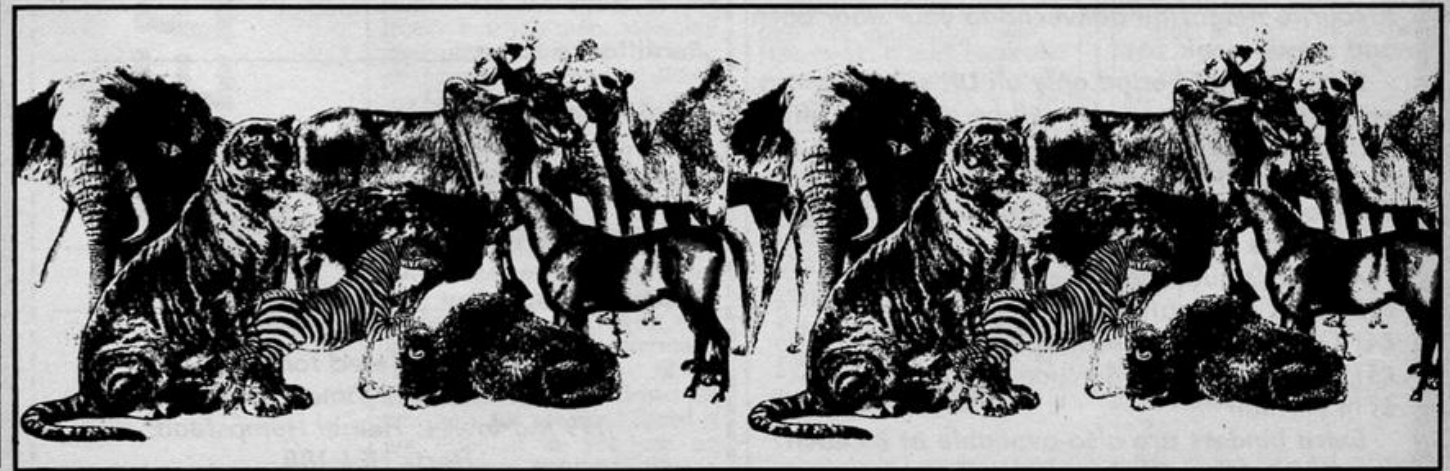
```
  70 LET l=9: LET r=9: FOR i=1 TO 3: LET t(i)=1: NEXT i: GO SUB 9300: GO SUB 940
0
 100 LET goes=start
 110 IF goes=1 THEN  PRINT AT 1,0; INK goes;n$(1,1 TO p(1));"'s go",,
 120 IF goes=2 THEN  PRINT AT 1,0; INK goes;,;"    ";n$(2,1 TO p(2));"'s go"
 124 IF goes<>1 AND goes<>2 THEN  STOP
 130 GO SUB 3000: REM move and load
 140 GO SUB 4027: REM move and unload
 150 IF b$="q" THEN  GO TO 170
 160 IF s(1)+s(2)<>7 THEN  LET goes=3-goes: GO TO 110
 165 PAUSE 50
 170 GO SUB 6000: LET start=3-start: REM print win
 180 INPUT "Do you want another game? ";q$
 183 IF q$="" THEN  GO TO 180
 185 IF q$(1)<>"n" THEN  CLS : GO TO 40
 190 INPUT "New players? ";q$
 195 IF q$(1)<>"n" THEN  CLS : GO TO 30
 200 STOP
1000 CLS : PRINT AT 0,10;"ZOO BREAK OUT"''"Last night all the animals broke"'"ou
t of the zoo."''"The two keepers have been"'"promised a bonus if they can"'"get
the animals back into their"'"own cages, with promotion for"'"the one who can ge
t the most "'"cages full."
1010 GO SUB 9500: GO SUB 9200: REM define UDG
1020 PRINT ''"Each has a lorry into which they"'"can lure up to 3 animals in"'"o
rder to move them into their"'"own cages."
1030 FOR i=2 TO 8: PRINT AT 19,4+2*i;a$(i): NEXT i
1050 INPUT "Do you want instructions? ";q$
1060 IF q$="y" THEN  GO SUB 7000
1070 RETURN
1200 DIM t(3): FOR i=1 TO 3: LET t(i)=1: NEXT i
1210 DIM s(2)
1220 RETURN
1500 CLS
1510 PRINT AT 0,10;"ZOO BREAK OUT"
1520 DIM n$(2,8)
1530 INPUT "Name of player 1? ";n$(1)
1540 INPUT "Name of player 2? ";n$(2)
1550 LET unload=0
1560 LET start=1+INT (2*RND)
1565 DIM p(2)
1570 FOR i=1 TO 2
1580 LET p(i)=8
1590 IF n$(i,p(i))=" " THEN  IF p(i)>1 THEN  LET p(i)=p(i)-1: GO TO 1590
1600 NEXT i
1610 RETURN
2000 PRINT AT 0,10;"ZOO BREAK-OUT"
2010 FOR i=0 TO 1: PLOT 83+88*i,148: DRAW 0,-144: NEXT i
2020 FOR i=0 TO 9: PLOT 83,148-16*i: DRAW 88,0: NEXT i
2040 LET z$="SCORE"
2050 FOR i=0 TO 1: FOR j=1 TO 5
2060 PRINT AT 6+j,31*i;z$(j)
2070 NEXT j: NEXT i
2080 RETURN
3000 REM move & load
3010 IF INKEY$<>"" THEN  GO TO 3010
3020 IF INKEY$="" THEN  GO TO 3020
3025 LET b$=INKEY$
3030 IF goes=1 AND b$="8" AND t(1)<>1 THEN  RETURN
3040 IF goes=2 AND b$="5" AND t(1)<>1 THEN  RETURN
3050 IF b$="6" OR b$="7" THEN  GO SUB 4500
3060 IF goes=2 THEN  GO TO 3500
3070 LET x=2*1+1
3100 IF b$<>"5" THEN  GO TO 3010
3105 LET rr=1: GO SUB 8200
3110 LET csum=0
```

```
3120 FOR i=1 TO 5: LET csum=csum+c(1,i): NEXT i
3130 IF csum=5 THEN  GO TO 3010: REM row empty
3140 IF t(3)<>1 THEN  RETURN : REM lorry full
3150 LET i=1: LET j=1
3160 IF c(1,i)=1 THEN  LET i=i+1: GO TO 3160
3170 IF t(j)<>1 THEN  LET j=j+1: GO TO 3170
3175 IF c(1,1)=c(1,2) AND c(1,1)=c(1,3) THEN  GO TO 8400: REM is it three
3180 LET t(j)=c(1,i)
3190 PRINT AT x+1,9+2*i;a$(1)
3200 PRINT AT x+1,2+2*j;a$(t(j))
3210 LET c(1,i)=1
3220 IF j=3 THEN  RETURN : REM lorry full
3230 GO TO 3010
3500 REM load right lorry
3510 IF b$<>"8" THEN  GO TO 3010
3515 LET x=2*r+1
3517 LET l1=r: GO SUB 8000
3520 LET csum=0
3530 FOR i=1 TO 5: LET csum=csum+c(r,i): NEXT i
3540 IF csum=5 THEN  GO TO 3010: REM row empty
3550 IF t(3)<>1 THEN  RETURN : REM lorry full
3560 LET i=1
3570 IF c(r,6-i)=1 THEN  LET i=i+1: GO TO 3570
3580 LET j=1
3590 IF t(j)<>1 THEN  LET j=j+1: GO TO 3590
3595 IF c(r,5)=c(r,4) AND c(r,5)=c(r,3) THEN  GO TO 8600: REM is it three
3600 LET t(j)=c(r,6-i)
3610 PRINT AT x+1,21-2*i;a$(1)
3620 PRINT AT x+1,28-2*j;a$(t(j))
3630 LET c(r,6-i)=1
3640 IF j=3 THEN  RETURN : REM lorry full
3650 GO TO 3010
4000 REM move and unload
4010 IF INKEY$<>"" THEN  GO TO 4010
4020 IF INKEY$="" THEN  GO TO 4020
4025 LET b$=INKEY$
4027 IF b$="q" THEN  RETURN
4030 IF goes=1 AND b$="5" THEN  GO TO 4010
4040 IF goes=2 AND b$="8" THEN  GO TO 4010
4050 IF b$="6" OR b$="7" THEN  GO SUB 4500
4060 IF goes=2 THEN  GO TO 4200
4070 IF b$<>"8" THEN  GO TO 4010
4080 LET l1=l: GO SUB 8000
4090 IF t(1)=t(2) AND t(1)=t(3) THEN  GO TO 8800
4100 LET j=3: LET i=5
4105 IF t(1)=1 THEN  RETURN
4110 IF t(j)=1 THEN  LET j=j-1: GO TO 4110
4115 IF c(1,1)<>1 THEN  GO TO 4010
4120 IF c(1,i)<>1 THEN  LET i=i-1: GO TO 4120
4130 LET c(1,i)=t(j): LET t(j)=1
4140 PRINT AT x+1,2+2*j;a$(1)
4150 PRINT AT x+1,9+2*i;a$(c(1,i))
4155 GO SUB 5000
4160 IF t(1)<>1 THEN  GO TO 4010
4170 RETURN
4200 IF b$<>"5" THEN  GO TO 4010
4210 LET rr=r: GO SUB 8200
4220 IF t(1)=t(2) AND t(1)=t(3) THEN  GO TO 8900
4230 LET j=3: LET i=1
4235 IF t(1)=1 THEN  RETURN
4240 IF t(j)=1 THEN  LET j=j-1: GO TO 4240
4245 IF c(r,5)<>1 THEN  GO TO 4010
4250 IF c(r,i)<>1 THEN  LET i=i+1: GO TO 4250
4260 LET c(r,i)=t(j): LET t(j)=1
4270 PRINT AT x+1,28-2*j;a$(1)
```

```
4280 PRINT AT x+1,9+2*i;a$(c(r,i))
4285 GO SUB 5000
4290 IF t(1)<>1 THEN  GO TO 4010
4300 RETURN
4500 IF goes=1 THEN  GO TO 4540
4520 IF b$="7" THEN  IF r>1 THEN  GO SUB 9400: LET r=r-1: GO SUB 9400
4530 IF b$="6" THEN  IF r<9 THEN  GO SUB 9400: LET r=r+1: GO SUB 9400
4535 RETURN
4540 IF b$="7" THEN  IF l>1 THEN  GO SUB 9300: LET l=l-1: GO SUB 9300
4550 IF b$="6" THEN  IF l<9 THEN  GO SUB 9300: LET l=l+1: GO SUB 9300
4560 RETURN
5000 LET i=1: LET g=((goes=1)*l)+((goes=2)*r)
5010 IF c(g,1)=1 THEN  RETURN
5020 IF c(g,i+1)=c(g,1) THEN  LET i=i+1: IF i<5 THEN  GO TO 5020
500 IF i<>5 THEN  RETURN
5040 FOR i=1 TO 10
5050 PLOT 83+8*i,172-8*x: DRAW  INK goes;0,-16
5055 BEEP .1,i
5060 NEXT i
5070 LET s(goes)=s(goes)+1
5080 PRINT AT 21-s(goes),31*(goes-1); PAPER goes; INK 7;s(goes)
5999 RETURN
6000 REM winner
6010 CLS
6020 IF s(2)>s(1) THEN  GO TO 6050
6030 PRINT AT 5,2; INK 1;n$(1,1 TO p(1)); INK 0;" is the winner by ";s(1);":";s(
2)
6040 RETURN
6050 PRINT AT 5,2; INK 2;n$(2,1 TO p(2)); INK 0;" is the winner by ";s(2);":";s(
1)
6060 RETURN
7000 CLS
7010 PRINT AT 0,5;"INSTRUCTIONS"
7020 PRINT '"Each player is allowed to lure"'"up to three animals into his"'"lor
ry each time it is his turn."
7030 PRINT "The three can come from one or"'"more cages."''"The player may then
unload the"'"animals into one or more cages."
7040 PRINT '"There are two restrictions:"'"1. Once three similar animals"'"have
joined each other, either"'"in a lorry or cage, they will"'"not allow themselves
 to be"'"separated."'"2. Once a player unloads any"'"animal he will not be allow
ed to"'"load any more."
7050 GO SUB 7950
7060 PRINT '"The up/down (7/6) cursors move"'"the lorries from cage to cage."''"
The left/right (5/8) cursors"'"move the animals into or out of"'"the lorries, de
pending on who's"'"turn it is."
7070 PRINT '"The object is to move the"'"animals so that the five of each"'"type
 are colected together in"'"one cage."''"The winner is the one who can"'"get the
 most cages filled."
7075 PRINT '"Press ""q"" to end the game when"'"unloading."
7080 PRINT AT 20,5;"When you are ready to start:"
7090 GO SUB 7950
7100 RETURN
7950 IF INKEY$<>"" THEN  GO TO 7950
7955 PRINT AT 21,0;"Press ENTER to continue."
7960 PAUSE 0
7970 CLS
7999 RETURN
8000 REM compress right
8010 FOR i=5 TO 2 STEP -1
8020 FOR j=i-1 TO 1 STEP -1
8030 IF c(ll,i)<>1 THEN  GO TO 8100
8040 IF c(ll,j)=1 THEN  GO TO 8090
8050 LET c(ll,i)=c(ll,j)
8060 LET c(ll,j)=1
8070 PRINT AT x+1,9+2*i;a$(c(ll,i))
```

```
8080 PRINT AT x+1,9+2*j;a$(1)
8090 NEXT j
8100 NEXT i
8110 RETURN
8200 REM compress left
8210 FOR i=1 TO 4
8220 FOR j=i+1 TO 5
8230 IF c(rr,i)<>1 THEN  GO TO 8300
8240 IF c(rr,j)=1 THEN  GO TO 8290
8250 LET c(rr,i)=c(rr,j)
8260 LET c(rr,j)=1
8270 PRINT AT x+1,9+2*i;a$(c(rr,i)
8280 PRINT AT x+1,9+2*j;a$(1)
8290 NEXT j
8300 NEXT i
8310 RETURN
8400 IF t(1)+t(2)+t(3)<>3 OR c(1,1)=c(1,4) THEN  GO TO 3010
8450 FOR i=1 TO 3
8460 LET t(i)=c(1,i)
8470 PRINT AT x+1,9+2*i;a$(1)
8480 PRINT AT x+1,2+2*i;a$(t(i))
8490 LET c(1,i)=1
8500 NEXT i
8510 RETURN
8600 IF t(1)+t(2)+t(3)<>3 OR c(r,5)=c(r,2) THEN  GO TO 3010
8650 FOR i=1 TO 3
8660 LET t(i)=c(r,6-i)
8670 PRINT AT x+1,21-2*i;a$(1)
8680 PRINT AT x+1,28-2*i;a$(t(i))
8690 LET c(r,6-i)=1
8700 NEXT i
8710 RETURN
8800 IF t(1)=1 THEN  RETURN
8805 IF c(1,1)+c(1,2)+c(1,3)<>3 THEN  GO TO 4010
8810 FOR i=1 TO 3: LET c(1,i)=t(i)
8820 PRINT AT x+1,9+2*i;a$(t(i))
8830 PRINT AT x+1,2+2*i;a$(1)
8840 LET t(i)=1
8850 NEXT i
8855 GO SUB 5000
8860 GO TO 4100
8900 IF t(1)=1 THEN  RETURN
8905 IF c(r,5)+c(r,4)+c(r,3)<>3 THEN  GO TO 4010
8910 FOR i=1 TO 3: LET c(r,6-i)=t(i)
8920 PRINT AT x+1,21-2*i;a$(t(i))
8930 PRINT AT x+1,28-2*i;a$(1)
8940 LET t(i)=1
8950 NEXT i
8955 GO SUB 5000
8960 GO TO 4230
9000 DIM c(9,5): FOR i=1 TO 9: FOR j=1 TO 5: LET c(i,j)=1: NEXT j: NEXT i
9010 FOR i=2 TO 8
9020 FOR j=1 TO 5
9030 LET d=1+INT (9*RND)
9040 LET e=1+INT (5*RND)
9050 IF c(d,e)<>1 THEN  GO TO 9030
9060 IF e>1 THEN  IF c(d,e-1)=i THEN  GO TO 9030
9070 IF e<5 THEN  IF c(d,e+1)=i THEN  GO TO 9030
9080 LET c(d,e)=i
9090 PRINT AT 2*d+2,9+2*e;a$(i)
9100 NEXT j
9110 NEXT i
9120 RETURN
9200 DIM a$(8,8)
9210 LET a$(8)="CD"
```

```
9220 LET a$(2)="AB"
9230 LET a$(3)="IJ"
9240 LET a$(4)="GH"
9250 LET a$(5)="EF"
9260 LET a$(6)="MN"
9270 LET a$(7)="OP"
9280 LET a$(1)="  "
9285 DIM t(3): FOR i=1 TO 3: LET t(i)=1: NEXT i
9290 RETURN
9300 LET x=2*l+1: PRINT  OVER 1;AT x+2,2;"RQRRRRQR";AT x+1,2;"TR";AT x,3;"O"
;CHR
$ 8;"TTRRRRR"
9310 PRINT  OVER 1;AT x+1,4;a$(t(1));a$(t(2));a$(t(3))
9320 RETURN
9400 LET x=2*r+1: PRINT  OVER 1;AT x,22;"RRRRRSO";CHR$ 8;"S";AT x+1,28;"RS";A
T x
+2,22;"RQRRRRQR"
9410 PRINT  OVER 1;AT x+1,22;a$(t(3));a$(t(2));a$(t(1))
9420 RETURN
9500 RESTORE : FOR n=1 TO 20: READ f$
9510 FOR f=0 TO 7
9520 READ a: POKE USR f$+f,a
9530 NEXT f
9540 NEXT n
9550 DATA "a",0,32,64,95,63,31,28,38
9560 DATA "b",28,62,125,255,254,252,12,18
9570 DATA "c",0,15,127,95,31,54,54,54
9580 DATA "d",56,252,246,255,249,49,50,48
9590 DATA "e",0,32,111,31,7,2,2,3
9600 DATA "f",24,31,160,192,0,0,0,0
9610 DATA "g",0,0,0,0,0,7,127,2
9620 DATA "h",0,0,3,4,40,245,255,32
9630 DATA "i",0,0,0,1,1,3,6,60
9640 DATA "j",128,192,128,224,240,224,128,224
9650 DATA "k",0,0,0,15,31,63,24,20
9660 DATA "l",112,8,28,254,248,248,20,18
9670 DATA "m",0,2,7,31,47,43,8,12
9680 DATA "n",4,39,116,252,248,232,8,4
9690 DATA "o",15,63,127,127,127,127,48,48
9700 DATA "p",192,240,248,252,250,254,103,98
9710 DATA "q",255,60,66,90,90,66,60,0
9720 DATA "r",255,0,0,0,0,0,0,0
9730 DATA "s",255,1,1,1,1,1,1,1
9740 DATA "t",255,128,128,128,128,128,128,128
9750 RETURN
9999 FOR i=1 TO 8: PRINT a$(i,1 TO 8);: PRINT "x": NEXT i
```



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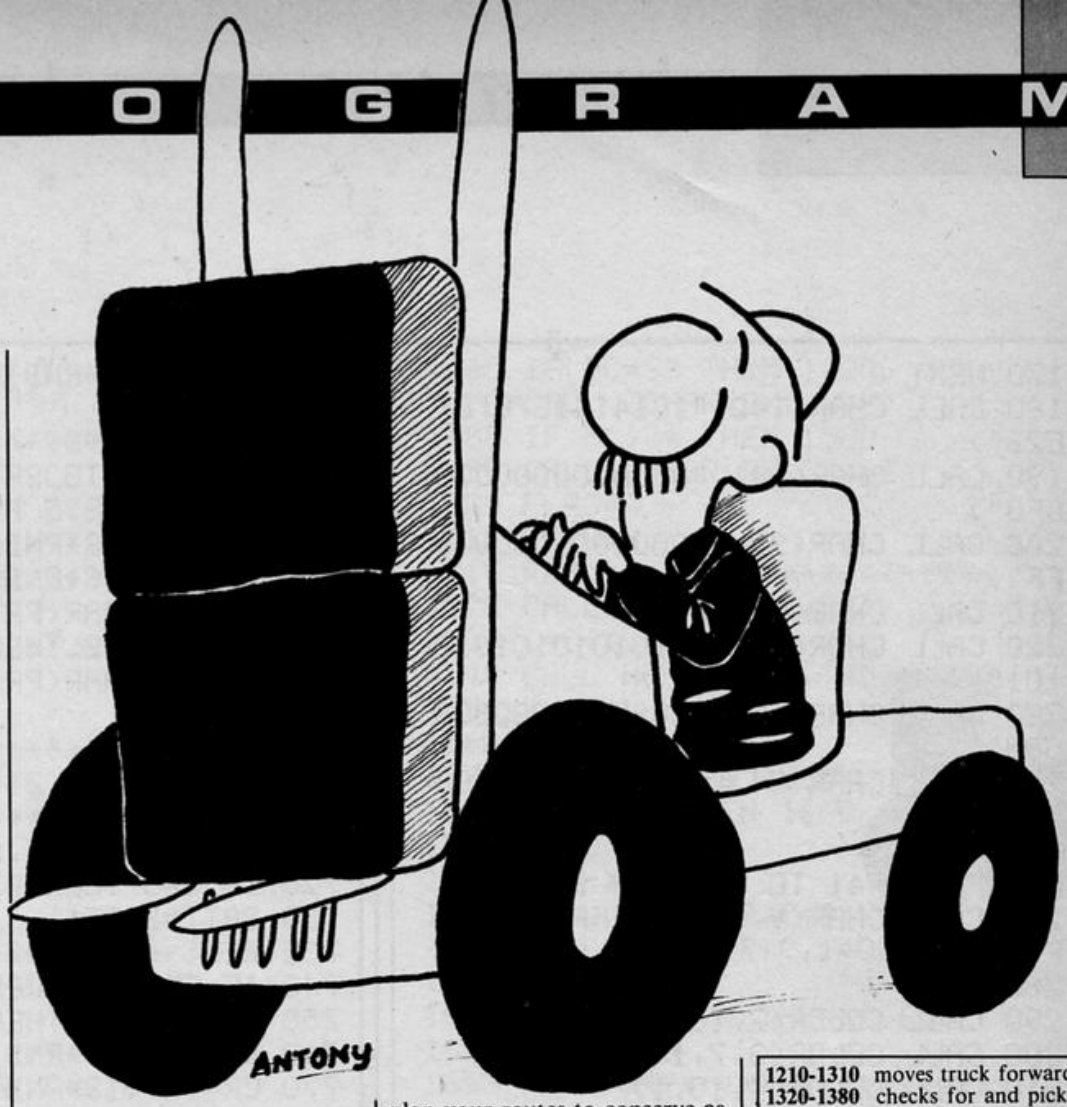
TI-99/4A GAME

KEEP ON TRUCKING

You're in charge of a forklift truck with failing batteries, in this game by Rod Lane in TI BASIC



In this game you play the part of a forklift truck operator putting in some overtime at the warehouse. Unfortunately the only truck around is old and the battery in it doesn't last long! So to keep going you will probably need to recharge a number of times.

However the recharge points (shown as new batteries) keep appearing and disappearing. You should therefore only go for one if it appears near to you! To use these recharge points you must BACK your truck over them. If you are successful you will gain between one and four units of power (shown on the power level meter at the bottom of the screen).

The normal four cursor keys control the movement of the truck. You job then, assuming your power lasts, is to pick up all the coloured crates by sliding the forks of your trucks into the pallet from the FRONT and to load them into the corresponding containers at the right of the screen.

When you have loaded the last crate and backed your truck out of the container the game ends and offers you a new game at the same or a different skill level. This skill level determines the number of crates to be loaded. Levels one and two are best only for practice. Speed is not essential as you use no power when standing still, so plan your routes to conserve as much power as possible.

I have written the program with REM statements purely as dividing lines to help in understanding the program and as these REM statements are on line numbers ending in five, if you use the NUM command when typing the program in, you can ignore all the REMs. Good luck!

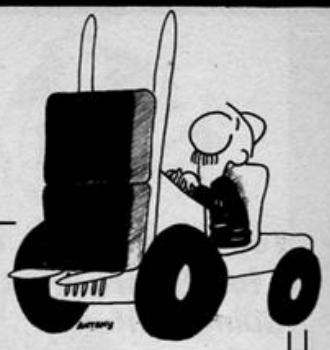
How it works

150-320 defines characters
330-700 sets up screen
710-730 scans keyboard, counts number of movements
740-810 checks for recharge point: if none, places one, 20% of the time
820-860 decides on direction of movement required
870-950 moves truck down
960-1040 moves truck up
1050-1120 moves truck back
1130 checks if truck backs over recharge point and acts accordingly
1210-1310 moves truck forward
1320-1380 checks for and picks up crate if present in front of truck
1390-1510 main subroutine common to all four moves, decreases the power
1520-1650 loads crates on to containers, keeps tally
1660-1720 win routine
1730-1780 lose routine
1790-1850 offers replay
1860-1880 skill level subroutine

Variables

R,C row, column position of truck
RX,CX row, column position of recharge point
PR,PC row, column position for placing crates
Q,V,D,C,T,Z all used in FOR-NEXT loops
FLAG if recharge point present
G,GN,GF used in GCHAR calls
BATT increments every move
BC position of power level on meter
X ASCII code of character on front of truck (fork or crate)
TOT total number of crates loaded
SK skill level

```
100 CALL CLEAR
110 GOSUB 1860
120 CALL CLEAR
130 RX=1
140 CX=1
145 REM  ********************
150 FOR Q=40 TO 64 STEP 8
160 CALL CHAR(Q,"78484878484878F
8")
```



```
170 NEXT Q
180 CALL CHAR(140,"1C14141E7E7E7
E2B")
190 CALL CHAR(141,"0000000000000
0F0")
200 CALL CHAR(95,"00000000000000
FF")
210 CALL CHAR(96,"FF")
220 CALL CHAR(105,"0101010101010
101")
230 CALL CHAR(106,"8080808080808
080")
240 CALL CHAR(34,"6666FF99FFFF99
FF")
250 V=41
260 FOR V=41 TO 65 STEP 8
270 CALL CHAR(V,"FFFFFFFFFFFFFFF
F")
280 NEXT V
290 CALL COLOR(2,16,1)
300 CALL COLOR(3,7,1)
310 CALL COLOR(4,15,1)
320 CALL COLOR(5,2,1)
325 REM  ********************
330 PRINT
340 RANDOMIZE
350 BC=1
360 BATT=1
370 TOT=0
380 PRINT "   ___.
___  "
390 FOR P=1 TO 19
400 PRINT "  I
   J"
410 NEXT P
420 PRINT "   \\\\\\\\\\\\\\\\\\\\
\\\\ "
430 PRINT "         POWER LEVEL"
440 W=5
450 N=27
460 FOR D=1 TO 2
470 FOR L=1 TO 2
480 FOR V=41 TO 65 STEP 8
490 CALL HCHAR(W,N,V)
500 W=W+5
510 NEXT V
520 W=6
530 NEXT L
540 W=5
550 N=28
560 NEXT D
570 R=INT(18*RND)+4
580 C=INT(20*RND)+6
590 X=141
600 GOSUB 1390
610 FOR T=1 TO SK
620 FOR Q=40 TO 64 STEP 8
630 PR=INT(18*RND)+4
640 PC=INT(18*RND)+8
650 CALL GCHAR(PR,PC,PG)
660 IF PG<>32 THEN 630
670 CALL HCHAR(PR,PC,Q)
680 NEXT Q
690 NEXT T
700 CALL HCHAR(24,1,41,32)
705 REM  ********************
710 CALL KEY(3,K,S)
720 IF S=0 THEN 710
730 BATT=BATT+1
735 REM  ********************
740 IF FLAG=1 THEN 820
750 IF RND<.8 THEN 820
760 RX=INT(13*RND)+7
770 CX=INT(13*RND)+8
780 CALL GCHAR(RX,CX,G)
790 IF G<>32 THEN 760
800 CALL HCHAR(RX,CX,34)
810 FLAG=1
815 REM  ********************
820 IF K=88 THEN 870
830 IF K=69 THEN 960
840 IF K=83 THEN 1050
850 IF K=68 THEN 1210
860 GOTO 710
865 REM  ********************
870 CALL GCHAR(R+1,C,G)
880 CALL GCHAR(R+1,C+1,GN)
890 IF (G=32)*(GN=32)THEN 900 EL
SE 710
900 CALL HCHAR(R,C,32,2)
910 R=R+1
920 IF R<23 THEN 940
930 R=22
940 GOSUB 1390
950 GOTO 710
955 REM  ********************
960 CALL GCHAR(R-1,C,G)
970 CALL GCHAR(R-1,C+1,GN)
980 IF (G=32)*(GN=32)THEN 990 EL
SE 710
990 CALL HCHAR(R,C,32,2)
1000 R=R-1
1010 IF R>3 THEN 1030
1020 R=4
```

```
1030 GOSUB 1390
1040 GOTO 710
1045 REM  ********************
1050 CALL GCHAR(R,C-1,G)
1060 IF G=34 THEN 1080
1070 IF G<>32 THEN 710
1080 CALL HCHAR(R,C,32,2)
1090 C=C-1
1100 IF C>5 THEN 1120
1110 C=6
1120 GOSUB 1390
1125 REM  ********************
1130 IF G<>34 THEN 710
1140 E=INT(4*RND)+1
1150 BC=BC-E
1160 IF BC>0 THEN 1180
1170 BC=1
1180 CALL HCHAR(24,BC,41,32-BC)
1190 CALL SOUND(400,-8,2)
1200 GOTO 710
1205 REM  ********************
1210 CALL GCHAR(R,C+2,GF)
1220 IF (GF=106)+(GF=34)THEN 710
1230 IF GF=X+1 THEN 1520
1240 IF (GF=41)+(GF=49)+(GF=57)+
(GF=65)THEN 710
1250 IF GF<>32 THEN 1320
1260 CALL HCHAR(R,C,32)
1270 C=C+1
1280 IF C<27 THEN 1300
1290 C=26
1300 GOSUB 1390
1310 GOTO 710
1315 REM  ********************
1320 IF X<>141 THEN 710
1330 X=GF
1340 CALL HCHAR(R,C,32)
1350 C=C+1
1360 GOSUB 1390
1370 CALL SOUND(-100,110,4,-7,16
)
1380 GOTO 710
1385 REM  ********************
1390 CALL SOUND(-200,-7,12)
1400 CALL HCHAR(R,C,140)
1410 CALL HCHAR(R,C+1,X)
1420 IF BATT/10<>INT(BATT/10)THE
N 1510
1430 CALL SOUND(250,550-(13*BC),
5)
1440 CALL HCHAR(24,BC,49)
1450 BC=BC+1
1460 IF BC=33 THEN 1730
1470 CALL GCHAR(RX,CX,F)
1480 IF F<>34 THEN 1500
1490 CALL HCHAR(RX,CX,32)
1500 FLAG=0
1510 RETURN
1515 REM  ********************
1520 CALL HCHAR(R,C,32)
1530 C=C+1
1540 CALL HCHAR(R,C,140)
1550 X=141
1560 CALL KEY(0,K,S)
1570 IF S=0 THEN 1560
1580 IF K=83 THEN 1600
1590 GOTO 1560
1600 C=C-1
1610 CALL HCHAR(R,C+1,X)
1620 CALL HCHAR(R,C,140)
1630 TOT=TOT+1
1640 IF TOT=SK*4 THEN 1660
1650 GOTO 710
1655 REM  ********************
1660 FOR Z=1 TO 24
1670 PRINT "FINISHED FINISHED FI
NISHED"
1680 NEXT Z
1690 FOR Z=1 TO 24
1700 PRINT " "
1710 NEXT Z
1720 GOTO 1790
1725 REM  ********************
1730 FOR Z=1 TO 24
1740 PRINT "NO POWER NO POWER NO
 POWER"
1750 NEXT Z
1760 FOR Z=1 TO 24
1770 PRINT " "
1780 NEXT Z
1785 REM  ********************
1790 INPUT "MORE??? [Y/N]  ":A$
1800 IF A$<>"N" THEN 1830
1810 CALL CLEAR
1820 END
1830 IF A$<>"Y" THEN 1790
1840 GOSUB 1860
1850 GOTO 330
1855 REM  ********************
1860 INPUT "SKILL LEVEL? [UP TO
4] ":SK
1870 IF (SK<>1)*(SK<>2)*(SK<>3)*
(SK<>4)THEN 1860
1880 RETURN
```

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LETTERS

Letter from abroad

I'd like to congratulate HCW for being the best magazine about computers I've ever read, especially for having such interesting themes, for giving us such good and practical advice and also for its reasonable price. Unfortunately, in my country, Portugal, it's extremely difficult to get these magazines because either people don't know them or don't receive all the numbers. Because of this I could only get some odd numbers.

There are a lot of magazines about computers in Portugal, though most of them are for the Spectrum, so they're of no use to me.

I've got a VIC-20 and for about a year and a half now I've been fighting the problem of not having arcade games and software for my VIC, because Commodore is not commercialised in my country and so there aren't any games for the VIC. Those we can get for a miracle are absolutely overpriced.

As I've already mentioned, I've had my VIC for a year and a half. I got it from my aunt who used to live in the USA and I'm very happy with it.

I would also like to have some information about other young people who may be interested in changing ideas and games with me.

When we belong to the EEC perhaps computer magazines will be more freely available in Portugal. If anyone wants to write to me, please do.

Antonio Duarte dos Santos, Rua Antonio Sa Leite No 101, Castelo da Maia 4470, Porto, Portugal

Flash change

I typed in the program Flash, as published in HCW 101 but found that after "Press space bar to play" nothing happened.

However I amended line 160 GET2$ to GETZ$:IF Z$ <> " "THEN 160

I deleted line 180.

Also line 400 GET A$ I changed to GET A$:IF A$ < > "" THEN 400

The game is working perfectly now. Maybe other readers have had some trouble with it.

I like your magazine, but would like to see more programs for the C16. I am new to this game, but find it most interesting.

GWT Churches

Luck of the draw

I would just like to tell you about a bit of luck I have had recently.

First my 16K Spectrum broke, so I took it back to W H Smiths, but the guarantee had run out (boo!). The repair cost me £30.

After a fortnight's wait it arrived back (hurray!) but on trying it out it still didn't work (boo!). So I took it back, expecting another wait, but no. I was given a brand new 48K Spectrum Plus (hurray!). Then the next day I won a copy of Lode Runner from your great mag. Long live HCW and thanks to W H Smiths.

R A Forrington, Birkenhead

Free bonus

Thank you for your recent review of our new Commodore 64 title Blagger Goes To Hollywood. I was pleased you liked it.

However, there is one very important point which the reviewer missed, and I am sure your readers will need to know.

Every purchaser of the game receives a free T-shirt and badge. There are four choices of style and sizes from 28-inch — XL. The four styles are Froget Frankie now Blagger Goes to Hollywood; Hollywood or Bust (for the ladies); Blagger Goes to Hollywood; I'm a Blagger Nutter.

I'm sure these additional features make the product even better value for money and are worth a mention.

M J Mahony, Director Alligata

Greetings from Pakistan

Aslam Alykum

I am very pleased to have the opportunity to write to you. I have to say that HCW is the best magazine and according to my observation HCW is the most popular magazine in Karachi.

I am a boy of 16 years studying medicine in the National College. I think now that there is a page of jokes the magazine is more interesting.

I am delighted to send my first essay, Computers in Pakistan, to HCW.

Pakistan and computers

Three features have marked the astonishing progress of science since the 17th century. The first and probably the most important is the scientific attitude of mind. The second is the development of a host of wonderful instruments. The third is the increasingly effective use of mathematics.

The computer is a machine which is one great success on the way of progress. In Pakistan the percentage of literacy is 15 per cent. Due to the low percentage of literacy people aren't able to understand the use of advanced and electronic equipment.

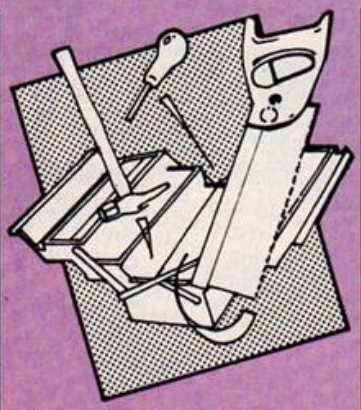
The government of Pakistan is paying special attention to the importance of computer science. Many clubs and institutes have been established since 1983 where students of all ages are taught computer programming and the use of electronic instruments. You would be surprised to learn that there are only three computer clubs in Pakistan. The books and programs available are very costly.

Many industries are changing their factories into computerised systems. I think that young people must be educated in modern and scientific ways. Without this education they will find the modern world utterly incomprehensible.

Adnam Ahmed Qureshi, Karachi

LETTERS PAGE

BOOKS



Graphics Book for the Commodore 64

As anyone who has ever seen some of the games available for the C64 will agree, the Commodore is capable of some excellent graphics. On the other hand, anyone who has ever seen the C64 manual will agree that Commodre has no intention of making these graphics facilities easily accessible to the likes of you or I. If ever there was a book to redress this balance it must be Graphics Book for the Commodore 64 by Axel Plenge.

The author claims that by the end of chapter three you will be familiar with every byte of the C64's memory map, and having read the book I believe him. All of the programs printed in the book, whether machine code or BASIC, are very thoroughly annotated, and there must be at least one REM for each line of program. This is always welcome when you want to understand the logic behind a program and not just use it as a typing exercise.

Despite some claims to the contrary, this is not a book for the beginner. The author does at one point suggest a book on machine code programming which may be of use to the less experienced reader.

However, in the hands of a competent programmer it could revolutionize the graphic aspect of your programs. An offer which could be a good bet for the two-fingered typists among you is the chance to buy all of the listed programs, plus a few more, on a floppy disc. **J.R.**

Publisher: First Publishing

Author: Axel Plenge

C64

33 Programs for the TI-99/4A

I will begin by saying that I have my doubts about the value of books containing program listings. It has been my experience that such listings tend to suffer, not only from typographical errors, but also from keying errors on the part of the user. In this case though, the author has taken some pains to make the listings as legible as possible, for example by reducing visual confusion by not making frequent use of the multi-statement ability of Extended BASIC, in which language all the programs are written.

The programs are divided into chapters with headings such as Basics for Business, Money Management, Curve-Fitting Routines, and so on. There is a small chapter of four games, but the book is devoted largely to financial calculating and a considerable quantity of statistics. The level of programming is moderately good, being almost exclusively modular in structure, and thereby based strongly on the use of subroutines, yet the author commits one of the cardinal sins by making REMs the destinations of GOSUBs. This fault is, to some degree, offset by the quantity of background information which is supplied with each chapter, and although the programs are by no means sophisticated — a sorting routine which looks very good is in fact nothing more than the novice's workhorse, the Bubble Sort — they will provide good models for the less experienced programmer.

This book scores highly with me primarily because it teaches the reader some mathematics as well as providing a number of elementary but useful utilities. **P.B.**

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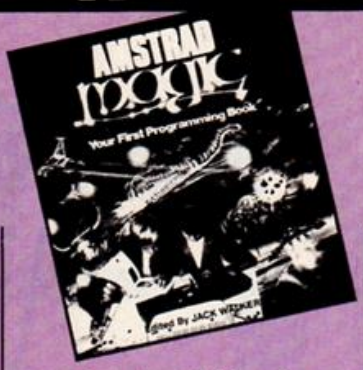

Amstrad Magic

This book is aimed at youngsters with their first home computer, as the sub-title, Your First Programming Book, suggests. By and large it succeeds in making the workings of BASIC clear and simple. The language is about right, and the text is broken up by the use of colour and short paragraphs. Cartoons help to get the points across.

The text concentrates on simple programming commands, and a second section introduces graphics, culminating in a simple arcade-style game called Wordzap. An appendix contains two longer games to type in, clearly laid out and explained — some magazines could take lessons from this! — There is a very useful glossary of commands, with explanations and examples. Each chapter ends with a 'Points to Remember' box and there are 15 exercises to tax young brains. The answers are provided at the back of the book.

Items covered include calculations, how to de-bug programs, strings, saving your own programs, editing and renumbering, colours and the different modes, FOR/NEXT loops, random selection, locate, plot and draw. All handled in a simple and attractive way. The book is well structured and written in a simple, friendly style, forming an easy teach-yourself introduction to using an Amstrad computer.

If you are already familiar with BASIC and elementary programming then this book is not for you. If, however, the Amstrad is your first computer and you find the manual daunting then this could be the answer you have been looking for.

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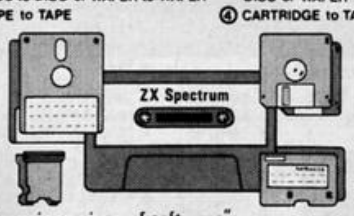

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HCW gold cassette awards

Caroline Bunting of FAST meets software pirates Kevin and John

We are pleased to announce the Home Computing Weekly Gold Cassette Awards. Dave Carlos describes the first presentation

The record industry awards gold discs, the film industry awards Oscars but there is no equivalent award in the home computer industry.

Home Computing Weekly has decided to change all this and has presented the first of its home computer industry awards to Kevin Moughtin and John Cain the authors of Firebird's Booty.

Why Booty? Booty has sold over 100,000 copies, a remarkable achievement by anyone's standard and thoroughly noteworthy.

The award takes the form of a gold cassette mounted on a wooden plaque and it will be presented in the future to all those who, in the opinion of the magazine, have made a notable contribution to the industry.

The awards were presented by Peter Welham, publishing director of Argus Specialist Publications and by Dave Carlos, Editor of HCW. In his speech Peter Welham congratulated the authors and Firebird's management on such a remarkable achievement. He suggested that this was due to the high quality of the graphics and the addictiveness of the game. He also made special mention of the Firebird policy of dividing its programs into ranges priced according to quality and style.

Kevin and John had travelled from the Isle of Man to accept the awards. They have been programming for a number of years and used to produce games for Rabbit Software. They both worked in the same architectural office until they started programming home computers.

The game was originally called Jolly Roger and features Jim the Cabin Boy who walks around the wrecked pirate ship trying to collect keys and pieces of loot. Only when every part of the screen has been cleared can the gold key be used to unlock the main stash of gold.

One tip that we managed to pry out of Kevin, author of the C64 version, was that there is a cheat mode in which you have 100 lives. To get to this mode you type his name, well part of it, and left arrow. One difficulty is that the cheat mode adds a few extra problems of its own! We would be very interested in the game and we would like to have details of the extra difficulties that you have to overcome.

Other organisations present at the award ceremony were Gallup and FAST (Federation Against Software Theft). It was particularly appropriate that FAST was there as the theme of the game is piracy. The amendment to the Copyright Bill, which FAST is keen to get through parliament, had its second Lords reading on Friday 10th March and was passed unopposed.

If you have any nominations for the award of a Gold Cassette please write to us and we will consider your suggestions. Please be sure to explain exactly why your nominee should be considered and don't forget your name and address.

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