Sceptics slam school report

The government report on maths in schools has provoked an angry backlash from leading educational software houses. The section on the use of microcomputers in schools, which advocates that programming be taught in maths lessons, if it's not taught elsewhere, has caused an uproar.

But with the current cutbacks in the education budget, coupled with the teachers' pay dispute, which is still unresolved, the recommendations are seen as ill-timed. "It's no good the government buying a BBC computer for a school and expecting them to buy software from their already diminished finances," said Andrew Welham of Penguin Software. "They have to spend the money on books!"

Mathematics from 5 to 16, published by the Department of Education and Science, dismisses maths teaching methods and acknowledges that calculators and microcomputers are essential resources. It stresses the importance of theory over practice. "Microcomputers are a powerful means of doing mathematics quickly and sometimes in a visually dramatic way."

Mr Welham was sceptical about the practicality of the recommendations proposed. "The only way the report will have any effect is if the government is prepared to put more money into the area," he said.

He went on: "We've had about 20 reviews of our software in recent months saying how wonderful it is. It must be very frustrating for teachers to see these reviews and have no funds to buy the programs!"

Implementation of the proposals seems unlikely in view of the level of finances available to local educational authorities.

Player of the Year

Duncan Stalke of Huddersfield has become Home Computer Champion of the Year in a competition organised by The Observer and Quicksilva.

Thousands of youngsters entered and the final 16 were invited to a play-off at the London Metropole Hotel. Finalists had to compete in a Fantastic Voyager tie-breaker and only the six highest scorers went on to design a game using Quicksilva's Game Designer.

Duncan was judged to be the best of the six. He wins a trip to the Epsom Centre in Florida, a Sinclair QL and holds this year's trophy. Sinclair also provided QLS for three runners-up.
Meet the Gang!

Wilma  Tom  Dick  Harry

“Everyone’s a Wally”

1ST EVER MULTI-ROLE ARCADE ADVENTURE
Includes Hit Single on reverse “Everyone’s A Wally” performed by Mike Berry

Spectrum 48K £9.95
Commodore 64 £9.95
Available shortly on Amstrad CPC 464

MIKRO-GEN
44 The Broadway, Bracknell, Berks. 0344 427317
Soapbox

The government's recommendations that computer programming be taught in schools which don't feature computer studies, has caused quite a commotion among software houses. Educational software houses bemoan the fact that there is no profit to be made in this market, and judging by this government's performance, there won't be much hard cash flowing from the treasury coffers.

So where's the money coming from? As Andrew Welham of Penguin pointed out, unless the government is prepared to invest some money, it's a losing business. No company is prepared to invest time and money with no return.

Like the cervical cancer screening project, where local health authorities are required to find the money to computerise their systems from within their own resources, I have the sneaking suspicion that the government won't be handing over their cash. Instead, money which is already allocated for books and other materials, will have to be appropriated for software it seems highly improbable.

Neither nurses nor teachers are happy with their salary systems. With the current tightening of belts and slashing of resources, it seems highly improbable that this government should make what, on the face of it, seems perfectly reasonable proposals and then not be prepared to put their money — or rather, our money — where their mouth is.

BASIC LIVING

BY OLIZ! I THINK I WILL....

YOU CAN ONLY DO IT WITH AN ASSEMBLY LANGUAGE ROM!

I'M SORRY YOU THINK YOU'RE BRILLIANT!

BUT I DON'T KNOW THE ASSEMBLY LANGUAGE!

SUCH COULD RUIN OUR SUMMER HOLIDAYS!

HELLO! LET'S TRY IT THEN!
Wally aid

Mikro-Gen has come to the aid of frustrated Everyone's Wally players. Starting on May 1 a Telephone Transliterator program has been listing on 0234 56447, giving relevant clues to Mikro-Gen's games.

For those who can't afford the TIP for a call, here are some clues to help you with Everyone's Wally.

What should Wally do when he has read the book? Dick should visit the zoo but make sure he gets the hut first. If he takes the plunger he can fix the fountain. If Harry makes cement with the sand and bucket of water he can build the wall with his trowel. Harry should use his screwdriver to replace the bad insulator on the top of the pylons but you'll need to make a phone call first.

Check your spelling

If you have problems with your spelling, you'll need all the help you can get. Now Tasm is introducing a spelling checker program on disc for the Amstrad. Called TasSpell, it will be available in the autumn.

And the current Tasm range for the Amstrad CPC464 will be available on the new CPC964.

Helping hand for others

As a follow-up to the recent Soft-Aid project for the Eupan Appeal, HCW has made a donation to the Oxfam.

No money changed hands however -- the donation was in the form of a huge box of old computer cassettes. The cassettes all contained programs from issues of HCW over a year ago and they will be sold as blanks, through London Oxfam shops in the near future.

Another project which aims to help those in need is the ASP Guide Dog appeal.

As Europe's leading publisher of consumer computer magazines we receive sacks full of letters each day. The stamps from all these letters are now being collected and sold in aid of our guide dog.

We need a total of over half a million stamps to sponsor the dog and we would like to invite you, our readers, to help too.

If you receive a large amount of mail or if you are prepared to save the stamps from your personal mail we would be pleased to add them to our collection.

Please cut out the stamps, leaving approximately one centimetre around each edge, pack them in an envelope and send them to Guide Dog Stamps, Home Computing Weekly, No 1 Golden Square, London WIR 3AB.

Now you have no excuse not to write to us. You can even be assured that you will be helping charity with every letter you send.

Mikro-Gen, 44 The Broadway, Bracknell, Berks

Half price

Aries Computers, manufacturers of ROM boards for the BBC, has reduced the cost of its RAM chips. Now the $244 4K x 8 static RAM chips cost $10 plus VAT.

You can use them to supply either 8 or 16K sideways RAM on a sideways ROM board for the BBC, and you can also use them as a printer buffer.

From Commons to Lords

The Copyright (Computer Software) Amendment Bill is continuing its passage through the British judiciary. It received an unopposed third reading in the House of Commons on April 19.

Now it will pass on to the House of Lords, where it will receive its first reading this month. Donald Maclean, FAST chairman, is optimistic about its chances. A change in the Copyright Act was one of the main priorities when FAST was established last July. We are now increasingly confident that this major objective will be achieved within 12 months of the federation's campaign.
Do you mind?

At the recent launch of Dk'tronics' Minder, George Cole, who stars as Arthur Daley in the popular Thames TV series, collected £1 from everyone present before he would hand over review copies of the game. All the money will be donated to Thames TV's Telethon Appeal.

HCW editor, Dave Carlos, presented George with a recent issue of the magazine.

If any reader can think of an apt and witty caption to commemorate this momentous event, send it to us and we'll try and print it on the readers page.

Dk'tronics, Unit 6, Shire Hill Ind Est, Saffron Walden, Essex CB11 3AX

New Atari launched

The Atari 130XE has recently been launched in the UK one month ahead of schedule, according to Atari.

It is based upon the 6502c microprocessor and is compatible with software for the Atari 400, 600, 600XL and 800XL. It has 128 RAM and 24K ROM and features a built-in programming language and an integrated diagnostic self-test. It also includes a I/O serial port, a composite video monitor socket, cartridge slot and two controller/joystick ports.

Atari claims that the graphics capabilities allow 356 colours to be displayed on the screen at once.

Programming allows simple manipulation of display lists, scrolling, sprites and other facilities all accessible from Atari BASIC or machine code.

The 130XE is compatible with peripherals designed for any Atari computer including disc drives, printers, modems, turtles and robots and costs around £179.

Atari Atari Hq, Railway Terrace, Slough, Berks SL2 5BE

The new Atari 130XE.
**Printer prices**

Dean Electronics is offering special prices on two printers.

- The Alphabet 42, 40 column printer now costs £19.95 and the Alphacon 81, 80 column printer is £24.95.
- For mail order you should add £2 postage and packing.

**Sanyo freebie**

Sanyo is launching a new promotion to increase sales of its MSX computer bundled with each machine will be a cassette recorder, joystick control and Talking Software audio/data tape tutorial pack. All in all, the package is worth over £50.

**Software update**

New Generation recently launched its John Barrington Squash at Wembley, on the same day as the squash finals. And the company took the opportunity to announce a new game scheduled for the summer. Amazon Warrior is an arcade game for the CGA. Graham Sumner is the author, and New Generation is proud of the movie he wrote to accompany the game. Mr Sumner attended the Royal Academy of Music and has won the Royal Philharmonic prize for composition.

The 3-D graphics set the scene for your struggle through the jungle. You must watch out for snakes and head hunters, vampire bats and guerrillas. Sounds rather like Indiana Jones.

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**Pirates sunk**

Roger Wood of New Generation software recently obtained an illegal copy of New Generation's game Knot in 3-D when he answered a mail order advertisement. He also received a Quicksilver's 3-D Am Attack a pirate copy at half the normal retail price.

Anthony Yarnold of Mill Hill, London was fined £200 for applying a false trade description to a cassette and £200 for falsely describing another. He was ordered to pay £150 costs.

**Sanyo MSX plus freebies**

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Richard Sealey takes a close look at A'n'F's Slave Utility ROM

Any company releasing a ROM on to the BBC market at this stage in its life either has suicidal tendencies or has a product that is truly incredible.
This ROM has one of the longest command lists of any I have ever seen. It is a combination of a BASIC programmer's utility and a machine code monitor. There have been attempts to combine the two before but these have been based on the 8K 2764 chip and have always lost more than they have gained.

This is a 16K 27128 chip and this allows enough space for the two concepts to be side by side very well indeed. The 68 page A5 manual supplied is a comprehensive document and quite well written. The tightrope between too much and too little detail has been walked with skill and flair.

The BASIC utilities and their syntax are detailed in Figure 1. The BASIC utilities and their syntax are detailed in Figure 1. The BASIC utilities and their syntax are detailed in Figure 1. The BASIC utilities and their syntax are detailed in Figure 1. The BASIC utilities and their syntax are detailed in Figure 1. The BASIC utilities and their syntax are detailed in Figure 1. The BASIC utilities and their syntax are detailed in Figure 1.

All the vital utilities are included, as well as some I haven't seen anywhere else. One of these is *ENVELOPE which will give a read-out of any envelope currently defined for editing or saving in a program. The enhancement of the trace facility, *TRON and *TROFF, is also very useful and doesn't disrupt the program in the same way as BASIC's TRACE command. The BASIC line editor is slightly strange at first but has all the facilities you could ever need. You can kill lines, add them and amend them — all without any reference to the COPY key. The screen is arranged in such a way that the beginning of each line is displayed and the rest of the line is off the right hand of the screen. This allows you to find the line you want very quickly, as each program line takes just one screen line and any extra characters are scrolled into position when required.

The disc sector editor and disc searching routines are also well executed. The MODE 3 screen can be difficult to read but at least it gives you the option of aborting the command if this will overwrite parts of a program in memory.

As you can see from the figures, there is a whole range of other commands. This chip can replace at least two and probably three others that you might need to get the same facilities. As such it is excellent value for anyone who doesn't own a utility EPROM but I can't see those that do going out in large numbers to buy it. I do feel that this is a very well thought-out chip with the user in mind, almost every possible option is given and each drawback has been considered and well thought out.

B.S.

Price: £39.95
Publisher: A'n'F
Address: Unit 8, Canalside Est, Woodbine Street East, Rochdale

Figure 1 shows all the machine code and disc utilities. It is interesting to see that this chip has a monitor, a hex display, and a debug facility as separate commands. The more usual arrangement is to have all these available from the 'front panel' display. Each of these commands provides a very colourful and informative display and I find them just as easy to use as the more usual method.

Figure 2 shows all the machine code and disc utilities. It is interesting to see that this chip has a monitor, a hex display, and a debug facility as separate commands. The more usual arrangement is to have all these available from the 'front panel' display. Each of these commands provides a very colourful and informative display and I find them just as easy to use as the more usual method.
Using a modem you can connect your computer to Micronet 800 and its thousands of pages of computer news and views, updated daily. In our free to enter competition you can win a modem for your computer and a year’s subscription to the Micronet service.

Micronet is a part of Prestel’s viewdata service and offers thousands of pages of information which you can access simply by dialling up the central computer using the phone number supplied.

You can order books, kitchen equipment and even flowers by filling in simple response frames. News about computers is updated on a daily basis and another service is that Micro-net helpline. Experts are on hand to answer your queries — electronically, of course.

The first prizewinner will receive a modem suitable for his or her computer (choose from C64, Spectrum and BBC) and a year’s subscription to both Prestel and Micronet 800, in total worth up to £165.95. The second prize is a modem and a three-month subscription, worth up to £116.95 and the third prize winner will receive a modem worth up to £99.95.

All you have to do to win these fabulous prizes is design a screen suitable for use on Micronet 800. The standard is for a screen of 25 lines, each with 40 characters. As you can see from the photographs, these can be designed using block graphics to make attractive pictures, which can then be combined with the text.

In order to make the task more simple we have produced a grid for you to enter your design on. Each cell can be divided into smaller cells, as shown on the grid, and these blocks are used to make up the graphic designs. If you study the photographs of Micronet screens you will soon find ideas and draw your designs onto the grid which also acts as your entry coupon.

Each entry should be in a separate envelope and on an official entry coupon — not a copy.

Send your entry to Micronet 800 Competition, Home Computing Weekly, No 1 Golden Square, London W1R 3AB. Closing date is first post on Friday, May 17, 1985.

Prizes will be despatched by Micronet 800 within 21 days of publication of the issue containing the results of the competition.

How to enter

- Study the photographs and decide which type of screen you wish to design. Some are menu screens, meant to entice you to look further, whilst others are meant to give information.
- Draw your Micronet screen design onto the grid, which also acts as your entry coupon. Each entry should be in a separate envelope and on an official entry coupon — not a copy.
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The rules

Entries will not be accepted from employees of Argus Spectrol Publica-
tions Limited. This instruction also applies to employees, friends and agents of the companies.

The Editor reserves the right to alter all the rules.

No correspondence can be entered into and the Editor’s decision is final.
Send your entry to: Micronet 800 Competition, Home Computing Weekly, No.1 Golden Square, London W1K 3AB. Closing date is first post on Friday May 17, 1985.
**Tasword 464-D**

The cassette version of Tasword 464/Amsword Wordprocessor received rave reviews when they were released last September. Now the official disc-only version has arrived, and it's even better!

For the uninitiated, using the screen as your "paper", you type text into your machine. Don't worry about typing errors; just type over the top and they disappear. Don't worry about fitting words on to a line. Tasword does it for you, and you can choose either right justified or ragged text just like a typewriter. If you want to alter a sentence then it's there on the screen, make any alterations you want, retype your paragraph, then away you go again.

Blocks of text can be moved around and copied to another place, you can reset margins, print headings, auto number pages, and print footnotes easily and automatically, then save the lot onto disc. When you want copies printed, your printout oblige, no documents can be stored on disc to be recalled whenever you need them, without having to go through all the pain of having to type them again. And perhaps the nicest thing, Tasword is very kind to busy typists like me! No having to start all over again when I make a real mess of my typing. All the above features of the earlier version are in the same place, but now when accessing the menu, another section of program loads from disc. Adopting this approach means that there is almost twice as much room for text, over 20,000 characters. If a really long document is called for, occupying several full text files, you can command Tasword to call them one at a time from disc, and print them as a single document without further commands.

Perhaps the most impressive addition is the data-merge facility. You first create a file of names and addresses, labelling each part with a code, up to the maximum file size. You then type one letter, to be sent to your names, and Tasword will print all of them with the appropriate names and addresses in the correct places, a massive saving in time. But there's more! It can do it intelligently, thus you can specify conditions which would lead to letters only being printed to certain customers, and lines of customised text if you want them. Any number of different standard letters can be used this way, and by including other details in your name and address list, you could choose to write to particular areas or countries who bought certain products. You can even print up the address labels for the envelopes.

The whole thing is explained very clearly in the manual, with excellent self-teaching tutorials, and an on-screen help page. Users with two drives are also catered for, and the program will interface with Masterfile 464 through additional software for more complex use.

A comprehensive and user-friendly package for both home and professional use at a price which makes technology accessible to everyone. Highly recommended.

**D.M.**

**Price:** £24.95

**Publisher:** Tasm; Software

**Address:** Tasm; Software

**Box:** PO Box 21, Felixstowe, Suffolk

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**Superpower**

Superpower is far from the action packed arcade game suggested by the front page of the cassette insert. It is a slow-moving board game for two players. The game, a sort of 20th century chess, involves some skill and strategy. However, the two players have to be human, there is no help for the single player to play the computer.

Few instructions appear on the cassette insert, apart from the fact that "LOAD ""CODE"" is the command required to load the program. Despite the load bytes command, the game is straightforward and appears to be written entirely in BASIC.

Several pages of instructions are available on the screen once the program has loaded. Fortunately, these are available at any stage through a help option, as the game is quite complex for beginners.

The game itself occupies a board containing plain squares. Each square represents an area of the world. Each country starts with an equal number of resources, money, people, weapons, etc., and each player chooses an equal number of countries. The players take it in turn to make decisions over the allocation of resources and the military within their countries under their control.

The aim is to invade and take over countries occupied by your opponent. The winner is the one who takes over the entire world. This can take quite some time, so a save game option is available.

This is a novel board game for those who like that kind of thing, but poor graphics, and no one player option would limit its appeal.

**D.N.**

**Price:** £4.95

**Publisher:** Howard Marketing

**Address:** Box 21, Felisstowe, Suffolk

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**AMSTRAD**

**REVIE**

**SPECTRUM**
**Grand National**

The annual event at Aintree forms the basis of a comprehensive computer game.

The small print on the cover suggests that it has to be read very carefully to appreciate all the finer points, since it covers a lot of the details of horse racing.

The first part involves you, as a jockey, making a selection of a horse to run in the National from horses trained at your stable. You also have the chance to bet — you start with £100 — on your horse, and any other you fancy. You make your choices through a simplified form rating, a knowledge of the conditions, and the style of the horse.

Despite the realism of the game, betting is restricted to 'on the nose' bets, but 10% betting tax is deducted from the bets you place.

Once you select your horse, the next stage commences, the race itself. This is the area of arcade standard. You have control of your horse, moving it left or right, using the whip, and deciding when to jump fences. Despite excellent graphics, movement is very slow, and the arcade enthusiast may fall asleep during this piece of action.

On the review copy, the horse failed to respond to the jump keypress, so fell at the first fence on every try! The reviewer makes the generous assumption that such a basic omission can't be present on copies available for sale. But, overall, players will need to be horse race enthusiasts to gain much pleasure from this game.

**Price**: £6.95

**Publisher**: Elite Systems

**Address**: 55 Bradford St, Walsall

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**SPECTRUM**

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**Digger Barnes**

I thought this might be about Dallas, but it isn't. The inlay notes give an involved setting about capturing Bludgits, extremely slimy creatures, in a local factory. This involves climbing ladders, digging holes for the creatures to fall into, then burying them if they touch you then you lose a life, and if you happen to fall off a ladder, then you are rather stunned, and have to be dragged to your feet again. Putting it another way, this is a very conventional ladder, levels and digging game, and the concept has been around for some time.

The very barest of screens tells you the game is loading, and when it's finished the in score table is revealed, though no demo mode is available. When the game starts, there are some good sound effects, though no music. Graphically, the game is well executed by last year's standards. Digger himself is a nicely drawn flicker-free multi-coloured sprite, and when he expires as a result of contact with a Bludgit, his spirit complete with ladder ascends the screen.

In comparison to the graphics displayed in Sorcery, which must now be the Amstrad standard, they are unsupervised. There are only four different screens.

The game is certainly a challenge however. Even using a joystick, it's very difficult to amass points.

Overall, something like the standard of the best cheaper games for the Spectrum if you must have a ladders, levels and digging game, you'll enjoy this, but don't expect the earth.

**Price**: £9.95

**Publisher**: Micro Power

**Address**: Sheppscar Hse, Sheppscar St South, Leeds LS7 1AD

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**AMSTRAD**

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**Killer Gorillo / Gauntlet**

Two games for £1 more than the price of Amstrad's usual offerings — and certainly up to the standard of many of them — Micropower presents its versions of Donkey Kong and Defender.

Killer Gorillo has your little man trying to ascend ladders, ladders and ladders in an attempt to rescue the maiden in distress, collecting her handbag etc en route. In the face of barrels and flameballs, You have the power to jump gaps and also use a handy hammer for demolishing the nasties. If you succeed on the four screens, you return to the beginning but with more problems to surmount. Nice sound effects and a little music, but no attempt to represent the 3-D graphics of the original.

Gauntlet hits your pet flying above a scrolling line-drew landscape laced with canisters which are the target for swarms of arches. Using either joystick or keyboard your task is to zap the landers and preserves your plane as they go for you. If you can zap a lander carrying a canister and return it to the ground, more points amass. As one wave is defeated, another master, faster one takes its place, whilst at the top of the screen, a scanner shows what's coming up. Really fast and furious, and difficult to get a high score without practice. Gauntlet's graphics could only be described as adequate.

Acceptable renditions of good games, accompanied by notably detailed instructions, though by no means state of the art.

**Price**: £9.95

**Publisher**: Cable Software

**Address**: 52 Lambury Rd, Linton, Beds LU3 2PL

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**AMSTRAD**

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**Camouflage**
Time Trucker

This is a game which allows children to learn the 24-hour clock painlessly. Included in the large cassette box is a manual which provides detailed notes on leading and instructions on how to play the three options: Tram Trucker, Trucker and Super Trucker Game.

The manual was brief but particularly well laid out giving suggestions for further activities.

As the player, in the simplest option, you see an analogue clock which operates in speeded-up time and allows an eight-hour work period. Your job is to move the truck around a network of roads collecting fruit and vegetables. These need to be deposited at the depot to collect the money. Not quite as easy as you only have a partial view of the roads.

The learning part comes when you have to log your time whenever you come across an item to load. This is done on a digital clock which my sample of children — eight to 11-year-olds — had a problem with initially. Most young children will be used to one or the other but they soon learned. And that, I suppose, is the object of the game.

The more complicated options have opening times for the farms which provide different fruit 'n' veg and road repairs which cause you problems, hence advance planning is essential.

There is a high score table and the choice of a female and male trucker means there is no problem about sexual bias. Full marks for a well thought out game that should achieve its educational purpose and keep them entertained in short bursts.

M.P.

Price: £9.95
Published: Applied Systems Knowledge
Address: 68 Upper Richmond Rd, London SW15

The game starts with an illustrated list of 10 characters, such as Elf Priest or Warrior, each with differing strength and craft values. If it's a new game answer yes to "are there any new players?" and you'll be asked how many characters each player chooses to name it, selecting computer or own control before proceeding to the next and finally speed of play — fast back, moderate or speedy.

Arrow keys move character left or right and occasionally you'll need to select a location, e.g. north or west. Screen top shows location and the objects, magic and ordinary, that are there. Middle section has character picture, listing of its strength, craft, lives, gold and spells — when present.

An hourglass at screen right has the sands of time running out as the game proceeds and the bottom section shows details of ordinary objects and any followers. Stop to pick up the objects and a detailed description of events will appear.

A monster may attack — its strength or craft values will be shown and you can run off to gain the object and follower. Pressing any key adds a random value between one and six to both sides and the one with the greatest total wins. When the sands run out you'll stay at that location.

Any of the 14 spells acquired may be used in your attempts to find seven ordinary objects, eight magical objects and eight followers to help obtain the talisman.

T.W.

Price: £7.95
Published: Games Workshop
Address: 27/29 Sunbeam Road, London

Grog's Revenge

I was sent a preview copy of this game, without any instructions, all the cassette may say was "normal loading", which is not even accurate as, like all the US Gold games I've seen, it uses a fast-load system. Working out how to play it was quite a challenge, and I suspect I may have failed to discover some of the functions.

You have control of what appears to be a stone-age man, riding a unicycle up the side of a mountain. He normally goes quite slowly, but speeds up if you hold the joystick fire button down. There are short wavy lines on the mountain path and, riding over these scores points. There are also a few holes and boulders, and failing to dodge these loses you one of your five lives.

Every so often you pass the mouth of a cave, the view inside is of a triangle standing on one of its points, with a number of small blocks, frog-like creatures and fire trees drifting down. If one of the fire trees hits the point of the triangle you crash and lose a life, for reasons I could not even guess at.

There is a toll booth blocking the path at one point, with a bridge beside it, and occasionally a strange creature which I presume is a gorg appears. I could find no way round either of these obstacles.

The graphics are excellent, and the game was quite enjoyable, despite the puzzling elements.

M.N.

Price: £9.95
Published: US Gold
Address: Unit 10, The Parkway Ind Centre, Hennage St, Birmingham B5 4LY
Chaos

Either the computer moves to another room or I'll give up watching TV, as two visitors playing this game caused noisy choices to reign supreme.

For game players preferring to use brains and not just zap away, this is ideal; it doesn't contain 100 busy, flashing screens of monsters needing exterminating, but this game of magical combat does become addictive if you have human opponents - preferably more than one, playing from five to 30 minutes.

Combat between the wizards takes place in an arena, with each combatant taking turns to select and cast spells and move summoned creatures. The winner - the Lord of Creation - is the last wizard alive, though there's a limit to the number of game turns in which to achieve victory.

Screen one offers options of two to eight wizards and up to eight levels, while the next screen asks for character's name to be entered. Whether computer controlled and which of eight illustrated characters and which colour is repeated for each player and the game starts with a menu offering examining spells, selecting spells, examine board and continue with game.

Each opponent, in turn, selects a spell - which can produce an animat illusion - then move and their character around the arena using Q, W, E, D, X, Z and A. If the opponent or a familiar is in range you're destroyed - if not, it's your turn.

With many players, you see a colourful screen full of wing-flapping, hoof-stamping monsters.

Try something different for a change - you'll enjoy Chaos. I'm sure.

T.W.

Price: £7.95
Publisher: Games Workshop
Address: 27/29 Sunbeam Road, London

Cavelon

This is a version of the arcade hit Excalibur and is just as good as the original. The game is of the ladders type and you play the part of a young knight. The objective on each screen is to collect all the parts of the door, each time you walk over one it is added to the jigsaw in a small window on the right of the screen.

Once all the pieces have been assembled the knight can then pass through it to the next screen.

Also available are various extra things that give extra points. Opponent you in this quest is the wizard and his demon benches. The wizard pops up all over the screen and summons demons who then walk around the screen attempting to bump you off. This happens if they touch you or if they fire one of the purple balls at you.

If you stay alive long enough you get a chance to catch Excalibur, which flies around the screen. Once caught the sword gives you immune power, enough to sprout wings and fly everywhere.

The graphics are very clear and smooth-moving, but control of the knight is rather difficult. Sound is a collection of jolly tunes that play during the game and change as different things happen, such as gaining a piece of the door or getting Excalibur.

All in all I found Excalibur very enjoyable - but then I liked the arcade version as well.

J.B.

Price: £7.90
Publisher: Jetroft
Address: The Workshop, 23 Church St, Eastwood, Nottingham

Artwork

The sort of results which can be achieved using this utility can be seen from the accompanying screen dump drawn by one of the co-authors. Use a series of well thought-out menus, you can select screen mode, ink and paper colours, and draw away to your heart's content.

A moving cursor is steered using the cursor keys, though routines are available to draw lines, circles, boxes and ellipses instantly. Not only that, but the resultant shape can be manoeuvred around the screen, and its size changed. Text can also be included and that too can be shunted about in one piece.

The neat feature of all is a 'Fill' command, which is really sweet.

In use, the whole thing is really idiot-proof, with the opportunity to undo what you just did, and instantly access help pages. Via the menus you can change modes, save desired drawing, or to tape, and the screens can be built into your own program. The easy-to-follow manual also contains details of how to save past screens and access them again later both in BASIC and machine code.

The whole package is characterised by user friendliness and ease of use.

In order to reproduce your picture in your own prog you must set the relevant inks and pens before loading the picture. However, an on-screen indicator would have been useful to show current settings, as would a save-to-disc option.

Recommended, if it's a little expensive.

D.M.

Price: £9.95
Publisher: Kunia
Address: 12 Horseshoe Road, Pangbourne, Berks RG8 7JW
Runestone
This is a role-playing adventure featuring over 2000 locations and Venturoscope—a programming technique that combines real-time action, full text interpretation, multiple command input, dozens of independent characters and 8000 different views.

You control Morval the Warrior, Eliaor the Elf and Greymarel the Wizard in a search for the maps of Belorn to learn the secrets of Sarumunder, or the recovery of the stolen treasures of Belorn, or the defeat of the Orcs and other foul denizens of the Northern Shire. Use of the different complete of the features Kordomur the Dark—merely explore the countryside and meet 40 inhabitants. As you travel you'll meet all kinds—some not as friendly as they seem Events will continue to happen whether you do anything or not—the forces of Kordomur will join together to destroy your allies.

Screen top shows a panoramic view at the location nearest framed with a sword at either end, with below a description of the scene complete with characters present in redefined characters, while at screen bottom is printed your instructions.

At all times you can change from character to character, none of which can die though they may become so weak as to be almost helpless. Keystroke 'E' will cause you to look East only, you must key 'M,E' in order to move East. When alongside a building, keying 'I, puts you inside, and 'O' outside.

A well organised game that will appeal to those who are keen on adventures. T.W.

Price: £7.95
Publisher: Games Workshop Ltd
Address: 27/29 Sunbeam Rd, London.

Sprite Editor
At last a piece of software for Sanyo lightpen owners, though a joystick or keyboard controlled version also features on the other side of the tape. This powerful utility enables as many as 64 sprites to be designed and saved to tape for use later. Coupled with the use of an I om M menu, this program makes the art of designing sprites a pleasure rather than a chore.

After the sprites have been designed on the grid, you are able to call them up in any order for further processing and they may be moved from one storage area to another for this purpose. Reversed, or 'negative' images can be created automatically, even a mirror image can be made but unfortunately the program does not cater for 90-degree rotations.

One excellent option allows you to select several sprites for animation, when trying to create effects such as a figure walking, running or jumping. To do this the sprites are displayed consecutively at the same point on the screen and the changing display can be moved around to check the total effect.

Once saved, the sprites can be reloaded into the program for further development at a later date, or loaded into your own programs with clear instructions being given on how this may be done.

The lightpen facility has a built-in calibrator at the start of the program which turns on a screen pixel. The lightpen is held against this dot and triggered to achieve the correct synchronization with the program. The pen can then be used as normal to select the mode or to fill the square on the designer grid.

Price: £6.95
Publisher: Games Workshop Ltd
Address: PO Box 96, Luton LU3 2IF

Night World
I have to admit that I don't really like this game at all. It isn't that it doesn't play very well nor that it is badly written. I just seem to pointless.

There is little doubt that it is a ladder and level clone without the ladders. The aim is to find a path from chamber to chamber by running and jumping from block to block. As such I suppose that there is an audience for such games but I tend to find that they are much of a muchness.

What makes this game different is that you actually control a mutant explorer who changes from one form to another when night turns to day and vice versa. Unfortunately that is all that changes. The game gets no harder or easier.

There are the usual statutory nasses to make life harder but there don't kill you if they simply drain your energy. This means that you can risk touching one if it is to your advantage.

The controls are rather difficult. There are times when Lee Lance, your persona, seems to be hanging in mid-air without any possible means of support and others where the path is blocked for no real reason. Another couple of几次 are that the joystick option doesn't appear to work and that the instructions are rather less than helpful. As I said earlier, a playable game but rather pointless.

Price: £6.95
Publisher: Alligator
Address: 1 Orange St, Sheffield S1 4DW

Bored of the Rings
Tongue in cheek, is this Bored or Bawd of the Rings? Someone had the rights to Lord of the Rings so Delta 4 has produced a full-scale comedy—or parody—quest based on it. Taking place in Western Middle Earth and the Shire, the home of the disgusting little Boggins.

Fordo Faggins, son of Bogo, is a feckless, fat, cowardly Boggan—a real hero! Fordo leaves a boozey party held on the field in a green tent to visit Fang End, where his Uncle and Gandalk are looking for a 'missing!' thing to take the ring and destroy the black land of Doomier.

Screen top shows description of location and what is happening in redefined characters, with "What would Fordo do?" below that. Using 45 words in simple sentences you direct Fordo on his mission in the vast game which is in three parts with passwords given at the end of each part in Bored of the Rings, written using Gillof's Quill and Illustration. Jokes are like those found in college rag mags, with Fordo living in Prickhillow, travelling to the town of Whee, visiting the Wiffy mountains and hiding from a horse and rider who fans don't let Fordo do that or he makes everyone explode.

Sceptical—part four—is a computer magazine containing word jokes, reviews on magazines, an on going story, recipes, adverts, competition, and references to females—who are Judith, Stephanie Stronger and Catherine Exorius? answers to reviewer please. T.W.

Price: £7.95
Publisher: Games Workshop Ltd
Address: 27/29 Sunbeam Rd, London.

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Price: £6.95
Publisher: Alligator
Address: 1 Orange St, Sheffield S1 4DW
Microcosm

This is another in Firebird's range of budget games, a Silver release. The Microcosm of the title is actually an interstellar freighter with a number of plant species being transported to a new galaxy.

The problems are twofold. Firstly the maintenance ladders have been damaged and your job is to transport new sections of ladder to the required position. Secondly, there are a number of rather evil looking insect mutants wandering about trying to give you the kiss of death.

The game is without a doubt a lot more type and your controls are left/right, thrust and fire. The graphics are good, certainly as good as most full price BBC games and the movement routines are very smooth indeed.

I had very little difficulty controlling the character although a joystick option might have been a real advantage.

I have underestimated the baddies a little. There are also drops of acid constantly raining down upon you as you move about on later levels a number of very nasty looking spiders and beetles. A real difficulty is the plant's need for refreshment.

Whenever the plants are running low on Phloem (look it up in the biology book) you have to drop your power pack and pick up the watering can. You then move about spraying the plants with the food that they desperately require.

The difference between this budget game and many full price ones is so little that this has to be great value for money.

R.S.

Price: £2.50
Publisher: Firebird
Address: Wellington Hse, Upper St Martin's Lane, London WC2H 9DL

Don't Buy This

Very seldom do I receive a game that I truly think is excellent and would gladly recommend for purchase.

Don't Buy This is not one of these games. In fact it's not even a game as such it's a compilation tape.

The first of the gruesome games is Race Aces, a racing simulation that is to Pole Position what a Real Ben Hur is to a Ferrari and consists mainly of blocky graphic cars crawling around a right angled track.

The second cutesy creation is Fido. Fido is the sort of program which would undoubtedly damage your computer if you load it. You must prevent Fido making digging holes in the garden. Fido achieves this by bashing them with his tail. For no apparent reason he is being attacked by low flying birds which he can duck by standing up.

The third dastardly variation is Weemal. Most of the fun in Weemal is to be had in the key definition stage and if you manage to define the keys my advice would be to immediately unplug the computer and quit whilst you're ahead.

The fourth pathetic program is Fido 2, the long awaited sequel to Fido and so completely devoid of any features whatsoever is it that I'm not going to mention it any further.

The last lethargic listing is Fruit Machine which appears to be a simulation of the inside of a Juicy Pong ball. It certainly has as much interest as one.

So in sum up this is the worst waste of a good tape I have ever had the misfortune to review, a tape that has been specially created for this and it richly deserves it — DEAD.

J.G.D.

Price: £2.50
Publisher: Firebird
Address: Wellington Hse, Upper St Martin's Lane, London WC2H 9DL

Don't Panic

It's true that one of the most enjoyable games I've seen in weeks should be written for the 16K Spectrum, but it proves that you don't need buckets of memory or any of the art to produce a good game — just a good idea.

You control a little droid who must load a spaceship with cargo scattered around the four levels of a cargo bay. The levels are connected by ladders, and populated by killer toads. The bay is several screen widths across, and scrolls smoothly as the 'droid moves across the screen.

This much sound like just another platform/collection the object game, but it has a couple of neat twists. First, the cargo itself is deadly and to be avoided, and then must be gently nudged onto the ship. Also, there is a cuddly, mini version of the monster from Alien lurking in the cargo bay. This alien moves faster than your 'droid, and you can often find yourself face to face with him and having to frantically race to the nearest lift, wondering whether or not you'll make it.

In 16K it has to be a simple game, but it's not less enjoyable because of that. The graphics are colourful and have character, and trying to avoid the alien whilst maneuvering the cargo into place combines strategy and quick thinking. This is many more complicated and expensive, games fail to do, even with an extra 32K of memory.

P.J.

Price: £2.50
Publisher: Firebird
Address: Wellington Hse, Upper St Martin's Lane, London WC2

Ledger Program

Recently I have had reason to account myself with the murky — and deadly boring — ledger program. When I received a ledger utility to review, I thought I might be able to practice some of my newly acquired expertise and learn something about the business. I have to admit failure.

This utility is most definitely for those who are already well endowed with expertise in accounting. The documentation can't be expected to reach the uninitiated, but even with my small advantage I found the whole thing heavy going.

Double entry bookkeeping has always seemed to me to apply to an artificial environment, and the method handed to me by my own accountant was sufficiently simple by comparison.

While it is obviously a useful utility in the right hands, I am unsure as to whom it might appeal. The requirement of a disc system and printer entails no mean financial outlay, and I suspect that owners of such systems would not perform their own accounting. The program, while supplied on cassette, is intended to be customised by you and then saved to disc, for which purpose it is supplied unprotected.

Full details are supplied with the documentation, together with a timely warning about the effect of disabling QUIT from the program code to prevent accidental use of FCNT —, and the myriad of rewritten TI Operating Systems which abound in the models of this computer into which the program was compiled.

Bearing in mind the subjective nature of such a review, it's not much use to me. Other owners might judge it differently.

P.B.

Price: £10
Publisher: Stainless
Address: 10 Alstone Rd, Stockport, Cheshire SK4 5AH
The Computer Dictionary

One of the major hurdles facing any newcomer to computing is jargon. To the person in the street a conversation between two computer buffs might as well be in a foreign language.

The Computer Dictionary by Jon Wedge breaks down this barrier in an informative and light-hearted manner.

To produce a computer dictionary which will sell in sufficient numbers to make it profitable must be quite a daunting task. For one had never considered such a purchase. Yet Jon Wedge has put in a formula which has managed to convert what could have been a very heavy going textbook into a fairly entertaining and sometimes hilarious book.

Not wanting to give the wrong impression about the book, I must stress that all words do actually have serious explanations. One example of computerese tackled by Mr Wedge will prove entertaining for those who are advocates of structured programming.

The word GOTO is defined as: "The instruction GOTO results in a sudden leap from one part of the program to another. This is like travelling in hyperspace, in that you go from one place to another without being anywhere in between. If you have ever wondered why GOTOS are supposed to be incompatible with structured programming, just draw a flowchart of a program based on hyperspace journeys."

The humorous text is liberally sprinkled with equally funny cartoons drawn by H.C.W. 's cartoonist Jim Bankier.

Not to be missed, this could be the first dictionary I will read from cover to cover.

Price: £3.95
Publisher: A & C Black
Author: Jon Wedge

The Working Amstrad

This is the latest of David Lawrence's "working" series. Together with Simon Lane, he now turns his attention to the CPC 464 applying the same teaching philosophy to the sort of applications programs that serious users will want to write in a highly structured form, using all the particular features of the machine. He explains in great detail not only how the programs work, but also how the user can pinch bits for use in his own programs. It's a good formula through which you can learn a great deal, and finish with a sense of excellent applications to boot.

Applications covered are various time programs using interrupts and timers, graphics with special mode and 3D graphics in colour, character set definition, a high resolution graphic page designer, and a two part music program. In a more serious vein, the final chapters are dedicated to a user definable data-base/file system — the ubiquitous Unifile — a simple text editor for word processing, a text question generator, and banking and accounting packages. If you have the patience and time to type them in it's great value for money.

Perhaps the most impressive thing is the standard of documentation. Everything is split up into modules, which is why it's easy to use sections in your own work, and every module has a line by line commentary which really does explain clearly. It isn't always like falling off a log, but with a little dedication you will certainly pick up a lot of information and some good programming practice.

Price: £5.95
Publisher: Sunshine Books
Address: 12-13 Little Newport St, London WC2H 7PP

Sensing and Control Projects for the BBC

Most BBC owners only use their machines for games and, except for playing an joystick, are reluctant to play with all the software keeping pins and plugs at the rear and underneath, or to delve into innermost workings of their machines. Yet it is at this level that the greatest enjoyment and sense of achievement can be obtained. It is also at this level that the computer starts to demonstrate its real power and purpose.

All projects in the book use the analogue to digital converter or user port and the author assumes the reader has no previous knowledge of electronics or of the commands needed to control the two ports. Each stage in the project is explained in simple, easily understood steps using very clear drawings and text.

None of the projects require any sophisticated equipment and all the components can be bought in total for less than £20. Most of the projects use the computer as a power source but the switching projects using the user port require a battery or small power supply. All the project circuits are built up on breadboards or use a simple home-made interface so that only two computer connections are needed and components can be re-used or easily changed. Projects range from simple light intensity using light dependent resistors, to the control of motorised vehicles. All programs are fully explained and component lists, with suppliers, are given at the back of the book.

Price: £5.95
Publisher: Micro Books
Address: 443 Milbrook Rd, Southampton SO1 0HX
Computers' TI Collection, Volume I

Computers' TI Collection, Volume I is an American magazine for computer buffs. This book is a compilation of some of the articles that originally appeared in the magazine, adapted where necessary, specifically for the TI-99/4A. The articles are organized into seven chapters covering elementary features, applications, recreation, sound and graphics, utilities and sports.

I think the book will mainly be of interest to the beginner who already has some programming knowledge, but wants to explore more fully the features of the TI. However, the experienced user wishing to make better use of his expanded system should also find the book worthwhile.

Each article is self-contained with romomes and/or programs where appropriate. Every topic is introduced in detail and complemented by a program listing, outline and main variables column. I found the first chapter particularly fascinating, as it begins by discussing differences between loans and mortgages, and gives a formalized method in calculating savings, annuities and payments. Other applications include electronic spreadsheet and word processor programs, and statistics for non-statisticians.

If you are more interested in games, there are seven of these included plus an article on writing your own. This provides valuable advice on what to consider, and should be taken into account when using TI BASIC as opposed to Extended BASIC, and how to speed up running of the programs on the standard machines.

Overall, a particularly interesting collection of ideas, but really only worth the money if you have Extended BASIC — at the very least.

J.W.

Price: £10.95
Publisher: Computers Publications Ltd, Holf Sandwiches
Address: 1 St Anne's Rd, Eastbourne, East Sussex, BN21 3UN

1001 Things to do with your Commodore 64

The usual excuse many people give for buying a computer is that it will have lots of uses other than playing games. The trouble is, you never can list many when pressed. This book solves this problem since it is dedicated to giving ideas for putting your 64 to work. Whilst listings are given, it doesn't try to teach you anything about programming.

Even to someone like myself who has used comper for several years in different roles, the variety of ideas is quite amazing. There is something for everyone ranging from games through to routines for calculating how much wall paper you need.

I won't attempt to describe the book in detail but the main chapter headlines are business and financial applications, maths and statistics, general applications, technical and scientific education, hobbies, control and peripherals, artificial intelligence and utilities. The most valuable aspect of the book is that theoretical basis for each application is discussed rather than just listing. The actual depth of treatment reflects well on the author — they aren't just dabblers. For budding computer freaks, one chapter gives some circuits for control applications. For hackers, there is a useful section giving details of a large number of networks in the states.

This is an excellent book which is not only a source of useful programs but is also a good read and an education in itself. At the price, good value and of use both to the computer owner and the prospective owner.

Price: £9.95
Publisher: TAB Books
Address: Blue Ridge Summit, PR 17241 USA

Compuer's Third Book of VIC

Most of you enlightened owners of CBM or Atari machines may well have come across an excellent magazine called Compute! In spite of its exorbitant price, there simply isn't anything in this country to compare with it. This book is the third compilation of VIC articles previously published in Compute!

The book covers six areas: applications, utilities, games, graphics, sound and useful wares. The games section is probably the weakest but the rest is 100% top quality. The most obvious feature is the consistent high standard. There is, for example, a listing for a machine code word processor which has an unbelievably high specification. This item on its own is worth the cost of the book.

Other notable items are a suite of machine code tools (OLD, RENUMBER, FIND and CHANGE), interrupt driven sound, mailing lists and fast sorts. Most of you will know the problems of faultlessly typing in listings. To help with this problem, two aids are supplied by the book, a machine code editor and a machine code reader.

All listings can be entered with either aid, and believe me, they're idiot proof. Overall, the blend is good and there is something for users of all abilities and interests.

Commodore may have for gotten VIC owners, but this book demonstrates that there are people who want to support the VIC and supply good quality material. At the price, this book is great value for money.

Price: £10.95
Publisher: Holf Saunders
Address: 1 St Anne's Rd, Eastbourne, East Sussex, BN21 3UN

WINNER

Flipped

Hooked

Keen

Yawning

Comafose

HOME COMPUTING WEEKLY 7 May 1983 Page 17
Farm is a very interesting place to visit. It is home for all kinds of animals. Chickens, horses, even farmer work very hard and we eat changed ways. For every good, educated spy would do. Press the break key, and wait until the fast train option is given. Simple, isn’t it?

The whole structure of this program is disappointing, and the number of spelling mistakes in this educational program is inexcusable. John Henderson takes a closer look at Summerfield software.

Summerfield Software is one of the newest entrants into the field of software development, and in many ways it is unique. Unique, because Summerfield is an independent school for children with impaired hearing. Founded in 1952, it caters for children from nursery age up to CSE/O level. Clearly the staff show a caring attitude, spending a great deal of time assisting their pupils. They also adapt their own learning resources, which is where the computer comes into the story.

The school computer centre has five computers at present, with another two on the way. It was staff’s idea to produce their own software and looking through the package, their aims seem to be reasonable enough. Summerfield provides software that is “as good as most that is available and a lot better than some”. A genuine attempt has been made to fulfil this aim.

The suite consists of four programs, available separately or on one disc at an all-in price of £26 — quite a price for a simple disc. This is only one of the disappointing features of this package.

Return from Paris is an adventure game with a difference, but let me keep the secret for a while longer. You follow the trail of spy 003 F — Son of Bond — as he tries to get the secret documents back from Paris to HQ. Your choice of transport is critical as both time and money depreciate during the journey. Hitch hiking takes a long time, but is cheap. The program is meant to involve children in decision making, but the really bright ones will use their skills to cheat. At any time your journey can be changed at will — so fear not, if you are given a slow train on which to travel and time is running out, do what every good, educated spy would do. Use the break key, and wait until the fast train option is given. Simple, isn’t it?

The sound levels are loud, perhaps they need to be in Summerfield but all users are not hard of hearing. Even the rewards are poor — if you manage to get back to HQ you may be decorated for your service, or you may be sent to a firing squad for bringing home the wrong papers. A less drastic punishment meted out to spics who nearly made it is to take up the post of honourable sewer cleaner. All that effort down the drain!

Treasure Hunt is nothing to do with helicopters and blond, female, out-of-breath runners, but a “find the missing object” trail. Mode 7 graphics are used throughout and the program is dull and unexciting. Too many symbols on a small map, together with the choices of colour combine to make this a real yawner. Poor clues as to where to go next reinforce the lack of incentive to explore further although symbols are explained in the introductory sequence, there are no help facilities and no copy of the map.

The idea is to find two keys and some treasure, but the longer it takes you to find them
the less valuable the keys become. The program is designed to accept six-figure map references or compass point references. However, it will allow the input of letters or more than six numbers at any one time. An error message is all the help that users are given.

Many other errors are not trapped at all, so careless keyboard skills can hang up the program entirely. The starting point for this adventure is somewhere near the Public House — perhaps the best plan would be to stay there.

Tank Tracks is a program designed to encourage logical thought and instruct children in the art of early programming. Schools familiar with the MicroPrimer package that came with every computer will remember the program Crash. This is a hybrid of the same program and suffers from the same inaccuracies as its predecessor. The background colours make the score very difficult to read and the minefield is poorly defined.

Only three keys are required to enter instructions into the program yet it is possible to enter other letters from the keyboard. The idea is to think ahead and drive the tank through the minefield without hitting a mine on the way. To achieve this children have to plan the number of squares they have to move forward and how many turns are required. Come back, Bertlak, all is forgiven.

A successful run results in a horrifying burst of "Congratulations" designed to send you wacky. Better to learn than to be given this reward. Written in 1983, this program is a classical example of early school software that now belongs in the dustbin.

Equation of Lines is the final program and allows the drawing of algebraic equations from unknown variables. Users have to input values for X and Y to see the resulting pattern. Its use is limited and depends on how individuals see the way maths should be taught. Whilst the principles may be fine, why use the powerful micro in such a boring way?

Agam there has not been sufficient error trapping as switching CAPS LOCK off seems to throw the whole program.

There are some valuable lessons to be learnt. Good, caring teachers will take an interest in all modern developments to assist children in learning. This does not mean, however, that they are best qualified to write computer programs for children. This is a skilled job requiring a great deal of time.

Yes, Summerfield Software is as good as most educational software on the market — but this just proves how poor and educationally damaging it is for children. I applaud Summerfield's policy on copying, no protection here, just a belief that users will not abuse the rights of the authors. I also admire their offer to help any user finding problems with a program. What cannot be understood is the "If you can't beat 'em, join 'em" attitude.

The prices — £26 — for programs of this standard is extremely expensive. There are so many spelling mistakes in both documentation and programs that a caring attitude is only shown towards other computer users. Schools and parents should not be fooled by large adverts in magazines and buy software without seeing it first, even if it has been tried at a school.

Price: Return from Paris - £11.95
Treasure Hunt — £14
Tank Tracks — £11.95
Equation — £9
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Publisher: Summerfield
Address: Summerfield School, 141 Worcester Rd, Malvern, Worcestershire, WR14 1ET

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Orders accepted within the United Kingdom and the EEC. Deliveries normally by return.
Here's an old favourite for Amstrad users — a darts program from Stephen Anderson

If you like playing darts then this program will give you the chance to get in some practice. You play against a friend or against the computer and the rules are the same as in the original game.

A dart board is drawn on the screen and two pointers appear — one at the top and one at the left hand side of the screen. These can be moved around using the cursor keys or joystick and indicate where your dart will land.

The scoreboard tells you which player has thrown, the total for the current throw and overall total.
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NEMESIS (HCW), 10 Cartoon Rd, Ringstead, Kettering, Northants NN14 4DW
Brian Janes explains arrays and shows you how best to use them

How did you get on with the program I left you to write last time? Here are possible solutions.

The first was to produce a sum of five random integers between 0 and 9 and check your answer against the correct answer.

The 10 multiplication sums, but in practice, three dimensional arrays are rarely used and larger dimensions

Now one of the most useful facilities in BASIC is the array. It takes some practice before you get to grips with it but it's worth it. The array is used when, instead of just an assortment of variables, we want to manipulate lists or tables of values. We can allocate a group name and define the formulae to be used by referring to that.

Those with an insight into modern maths will certainly have come across matrices and this is very similar. Individual values within the array, or elements of the array, as we call them, are specified by their numerical position in the list or table. This is achieved by giving the array name, which must follow the same rules as ordinary variable names, followed by the position in brackets. So A(S) is the element in position 5 of an array called A. BS(N) is the Nth element in a string array called BS and C(X,Y) is the element in the Xth row and Yth column of a number array called C. That last example is called a two-dimensional array, the others are one-dimensional. You can have more than two dimen-

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Firstly, let me explain how to use C:

This defines an array called SC.
It is one-dimensional and its size equals the value given to T at line 20. Now line 30 is an important one. By nominating the position in the list as a variable, the weight of the catch, WT, can be added to the score of whichever competitor landed the fish.

Without the array we'd probably have differently named variables for each competitor's score, S1, S2, S3, perhaps. Then we'd need a long list of IF N=1 THEN S1=S1+WT, IF N=2 THEN S2=S2+WT, and so on. With the array, one assignment statement and no IF's are all that's needed. Here's another example of an array to use —

`10 FOR I=1 TO 6
110 IF N=1 THEN PRINT S1:120=I
130 NEXT I
140 IF N=2 THEN PRINT "A"/N=2, NOT ON FILE"
150 IF N=3 THEN PRINT "B"
160 DATA ADAM, 19TH JAN., BRENDA, 12TH FEB., CLIVE, 13TH MARCH
170 DATA DAVID, 3RD APRIL, ELIZABETH, 21ST MAY

You might add your own and others of your family and friends to the DATA list, perhaps putting their full names in case you have two people with the same name. You will need to adjust the 5 on lines 20, 30 and 50 to the new numbers of names.

By the way, previously I've used the instruction STOP to end a program, why did I use END this time? Well, STOP gives a BREAK AT LINE 50 — or whatever. Whilst it can be useful to know which line your program stopped at if you have several STOP's, this message could be a bit off-putting if you didn't realize you might have broken the program! END just finishes the RUN without any fuss.

Now I doubt that this program will cause a drop in the sales of birthday cards, but if you did spend time adding all the birthdays you know to DATA, you'd hardly want to waste the effort and key it all in again if you ever wanted to use the program another day. So you may want to SAVE the program. I haven't mentioned anything about this before as it's something most people manage to pick up from the manual. So I'll quickly check through it with you.

Entering the command SAVE "BIRTHDAYS" would cause the response PRESS RECORD & PLAY ON TAPE. Obeying that results in the message SAVING BIRTHDAYS. Since the screen blanks, you have to wait until it is finished before you can use it. In fact it doesn't start saving straight away, it winds the tape on for five seconds or so first. This is to prevent it from trying to record on the plastic non-recording leader tape that all music cassettes have at each end, and to put a reasonable gap between programs when more than one is put on one side of a tape.

To load the program back in at a later date the tape is rewound to the right place and the command LOAD entered. You can load it by name as when you save it, but it's easier to find the right place on the tape than remember exactly the right name. LOAD on its own loads the first program it finds. You can use the method most commercial programs on tape give for loading, which is to hold down the shift and press the RUN/STOP key. As well as loading this also runs the program.

So on to this week's home work.

1. Write a program to generate 100 random digits between 0 and 9 inclusive and print a sideways bar chart of the number of ones, twos, threes, etc.
2. Store the number of days in each month in an array and use it on that any date, you can calculate the number of days to Christmas.
How to dump the contents of your screen to your printer.

By Iain Murray

This program enables you to dump the contents of your TV screen to a dot matrix printer. It runs, independently of BASIC once loaded, allowing you to load up another program and dump screens from it. The program listing is a BASIC loader which loads and utilises the machine code routine.

Once 40 characters have been printed, a carriage return is output and the routine continues until the whole screen has been dumped. The routine then places itself back into the interrupt queue. While printing the screen execution of the current program will be postponed and this will be resumed when the routine has finished its task.

Instructions for use

Type in and SAVE the BASIC loader. Now RUN and if an error occurs, the control codes for use will be printed and the program will clear from memory To use the routine, simply hold down the CTRL key and press the desired letter for whichever output you want. These are as follows:

CTRL P This outputs in the normal printing mode and would be used for printing a screenful of text.
CTRL W This outputs with no spaces between lines of text, and would be used for printing graphics screens.
CTRL D As for CTRL P except that the text is printed in double width mode.
CTRL B As for CTRL W except that the text is printed both double width and without line spacing.

The routine can be used at any time while running and in BASIC or machine code program but the program will stop running while the routine is printing. On completion the user program will continue. However please note the following restrictions on the use of the routine:

1. The routine sits in the middle of the block of free RAM (4K) above the normal BASIC memory, beginning at SCCC00 and this area should not be used by any programs loaded subsequently. SCCC00-SCBF is free for use.
2. Any program which alters the interrupt vector will cause the routine to become unusable. Pressing RUN/STOP and RESTORE will also stop it from working. Type SYS 5206 to restart the routine.
3. The routine passes ASCII character values to the printer for output to normal characters will appear on the printer even if upper-case characters are shown on the screen.
4. Pressing one of the routine's control codes without a printer attached is not fatal, but your screen display will be lost.

Hints on conversion

Due to machine-specific addresses, the program would be difficult to convert to another computer. The program outputs in decimal number four and the machine code would have to be re-written if another output device were required.

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3) USING AILA D:

PLEASE WAIT WHILE I LOAD IN THE DATA

SCREEN DUMPER NOW ACTIVATED

* * * P - NORMAL PRINTING
* * * W - NO SPACES BETWEEN LINES
* * * D - DOUBLE WIDTH CHARACTERS
* * * B - BOTH WIDE CHARACTERS AND NO SPACES BETWEEN LINES

READY.

4) USING AILA B:

10 REM *** AUTO SCREEN DUMPER ***
20 REM *** (C) IAIN MURRAY 1985 ***
30 REM *** FOR HOME COMPUTING WEEKLY ***
40 REM [CLR] [2 DOWN] [10 RIGHT] (REV ON) (REV OFF)
50 PRINT "AUTO SCREEN DUMPER"
60 REM [C CLEAR]
70 REM "PLEASE WAIT WHILE I LOAD IN THE DATA"
100 C=0
110 FOR I=52228 TO 52536
120 READ A POKE I,A-C+C
130 NEXT I
139 REM [2 DOWN]
140 IF C>38166 THEN PRINT "ERROR IN DATA! ERROR =",30166-C END
150 SYS 52566
159 REM [2 DOWN]
160 PRINT "AUTO SCREEN DUMPER NOW ACTIVATED"
170 REM NEXT 4 LINES HAVE DOWN [REV ON] (REV OFF)
170 PRINT "W OCTAL P - NORMAL PRINTING"
180 PRINT "W OCTAL W - NO SPACES BETWEEN LINES"
190 PRINT "W OCTAL D - DOUBLE WIDTH CHARACTERS"
200 PRINT "W OCTAL B - BOTH WIDE CHARACTERS AND NO SPACES BETWEEN LINES"
| DATA | 36.173, 141.2, 2, 281.4, 209.248 | 281.208.249.165.159 | 1017 | 1.614.2, 284.141.3.204.165.159 | 1026 | 281.240.36.201.8, 208.8, 169 | 1030 | 1.141.2.284.76.62.284.201.18 | 1040 | 208.8, 169.1, 141.3.204.75.62 | 1050 | 208.201.20.209.265.169.1.141.2 | 1060 | 208.2.141.3.204.128.165.49.141 | 1070 | 208.3.141.209.244.141.21.3.175.24 | 1090 | 208.201.21.289.5.169.0.76.87 | 1090 | 208.204.160.7.169.4.179.3.186.255 | 1100 | 169.0.32.169.255.32.152.255 | 1110 | 162.4.32.281.255.169.0.139.251 | 1120 | 169.4.139.252.160.0.173.3.284 | 1130 | 240.5.169.14.76.128.265.165.15 | 1140 | 32.210.285.177.251.281.128.18 | 1150 | 10.72.169.146.32.210.255.104 | 1160 | 76.157.284.72.169.18.32.210 | 1170 | 255.104.24.185.128.261.32.15 | 1180 | 6.24.165.64.76.208.284.201.64 | 1190 | 16.3.201.34.208.27.169.39.76 | 1200 | 202.204.201.64.205.3.169.96.76 | 1210 | 202.204.201.96.16.24.185.129 | 1220 | 76.202.204.24.185.64.32.210 | 1230 | 253.208.192.48.286.177.24.169 | 1240 | 48.161.251.133.251.169.0.101 | 1250 | 252.133.252.173.2.284.246.18 | 1260 | 169.8.32.210.255.169.13.32.210 | 1270 | 255.169.15.32.216.255.76.251 | 1280 | 204.169.13.32.210.255.165.252 | 1290 | 201.7.240.3.76.114.204.165.251 | 1300 | 201.232.240.3.76.114.204.169 | 1310 | 13.32.210.255.169.13.32.210 | 1320 | 205.32.210.255.126.169.39.141 | 1330 | 20.3.169.205.141.21.3.98.95.12 | 1340 | 72.132.72.139.72.32.164.194 | 1350 | 170.184.169.164.48.76.49.234 |
Jersey resident Colin Wilfan-Davies invites you to draw a mermaid using Spectrum BASIC — and win a game

We ended up last time with a picture of a sailing boat on a very calm sea under a sunny sky. I hope that by this time most of you will have played around a bit with the simple line-drawing statements used, and will have introduced a few of the run-off-the-mill tricks which greet a sailor's eye. Such as mermaids, sharks, mermaids, rough seas and mermaids — you can tell I kept my eyes open when I was at sea, can't you?

Let's have a little competition. Write a program in Spectrum BASIC to draw a mermaid and send it to me care of HCW. I'd prefer entries on cassette or Microdrive to save time, and these will be returned to you if you enclose a self-addressed label. No stamps, thanks — we use our own ones here in Jersey.

If you don't send a cassette with the program, your entry should be in the form of a PRINTED listing with a screen dump of the picture (use the COPY statement on the Z key). The sender of the ten best (in my opinion) will receive a copy of my Tradewind game, and will be able to compare the artistic merits of their mermaid with my own on the raft. Entries must be at HCW within 28 days of the publication date of this article.

When you're sailing, even with well-equipped eyes, the sight of sharks and mermaids is a matter of luck or chance, and it is common to decide the outcome of a play on the throw of dice or the toss of a coin. The equivalent of this in a Spectrum BASIC game is the RND function, obtained on the T key in extended mode.

Enter as a direct command PRINT RND, and a number like 0011291504 will appear on the screen. You can do this a lot of times before you will see the same number twice. If you don't believe me, RUN this short program:

```
100 FOR c=1 TO 100
110 PRINT RND
120 NEXT c
```

This will print a series of 100 numbers one below the other. As there aren't room for 100 lines of text on the screen, the Spectrum very politely waits until you are 22 on the screen and says "scroll?". If you press SPACE, BREAK or N, this will interrupt the program at this point, any other key will scroll the numbers up the screen until the next 22 have appeared. I'll be very surprised if you find two numbers the same, but you won't find any smaller than zero or quite as big as one.

The numbers are actually generated by means of a complex formula, so are not truly random. Mathematically, they are "pseudo random", meaning numbers between zero and one, which sounds rather like saying you are throwing a die with more than a million sides, but comes to much the same thing! The formula used starts with a "seed" in the Spectrum's memory, which is a count of the number of TV frames generated since it was switched on. If for some reason you want the random numbers to follow the same sequence (there's a contradiction!), you can do this by using the RANDOMIZE function, which is also on the T key. Change the little program above so that the first line is:

```
100 FOR c=1 TO 5
```

and each time you RUN it, you will get a different group of numbers. Now insert:

```
90 RANDOMIZE 10
```

and you will get the same sequence of pseudo-random numbers each time. These numbers are inconveniently small for many purposes such as simulating the throw of a die, if you try:

```
100 FOR c=1 TO 6
101 LET n=RND * 6
```

and you will get nearer still. The function INT is short for INTEGER, or whole number. What it does is to keep the part of a number like 23.45 which is greater than one (23) and discard the rest (.45), which is called the fractional part. Some dialects of BASIC have a FRAC function, which is the opposite of INT. The Spectrum doesn't have this, you would use something like:

```
LET frac = n - INT(n)
```

Anyway, you will probably find some zeroes in the sequences, and you certainly won't find any ones, so make it more like dice throwing you must add:

```
130 LET n=INT (RND * 6) + 1
```

and you can scrap lines 110 to 130 inclusive.

Many traditional board games, including a well-known property trading game, use two dice, and some games use more than this. For example, poker dice are thrown in fives. Now it would be easy but wasteful to program five separate sequences of lines to generate appropriate random numbers and translate these into card names. It's very common in computing (to have jobs (large or small) which have to be done repetitively and sometimes by different parts of a program. These jobs are called "subroutines" and are accessed by the "GO SUB" statement. The end of the job is recognised by the occurrence of a "RETURN" statement, which causes program control to return to the statement following the GO SUB. Let's suppose we have a game in which ordinary and poker dice are to be used.
Programs are always supplied on cassette and are accompanied by full details of the program variables, how the program works and any hints on conversion you can offer. Please type these details double spaced. Listings are helpful but not essential. What is vital is that the programs should be completely error free, so please double check.

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Don't use any keys just watch yourself. All you have to do is beat Geoff Capes — and that isn't impossible.

**Variables**

- S1 vertical position of bar
- S2 horizontal position of bar
- A+V draw maze
- A$ thumbs up
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HCW
Avoid the pounding lorries in this obstacle game by Paul Burke

In this version of the well-known arcade game you control the frog in its efforts to reach safety. You start out at the side of the road. Traffic is speeding by in both directions. Hop across the road avoiding the cars and lorries until you reach the river bank. Now jump on to the floating logs. Be careful not to fall in the river, as this means death.

Finally, jump into a den at the top of the screen and you will receive 500 points plus a time bonus. When all five dens are occupied you get a 1500 points bonus and go back to the start, the traffic and logs however now move a little faster. You are allowed a maximum of 30 seconds to get each frog home. You start off with three lives and win an extra one every second sheet. When the game ends, if you have a high score you can enter your initials in the score table which holds the five best scores of the day. Controls are T forward, H right, V back, F left.

To start the game press any key.

### Variables

- **A** width of screen (22)
- **C** difference between screen and colour memory (80720)
- **N** number of occupied dens
- **H** skill level (the lower it is the harder the game is)
- **L** number of lives left
- **M** score
- **S1**, **S2**, **S3**, **S4**, **S5** sound registers
- **S1** white noise
- **T1** VIC's own timer

### How it works

1-2. Initialise variables and arrays
3. set up variables for new game
4. display number of lives left
5. main part of game: SYSEX
6. scrolls cars and logs and moves frog
7-14. dead frog routine
15-19. frog has reached den routine
20-23. fill dens filled
24-29. set up screen
30. initialise machine code variables
31-32. continue to print in dens the characters in C6
33-34. game over and print score table routine

---

**TUX general purpose variables**

- **V** volume control
- **I** occupied den array
- **S** high scores array
- **H** used in GET statements
- **S** contains a line of road markings
- **G** used for frog printing routine
- **T** VIC's own internal clock
- **Q** continues (HOME) [LHCUD]
- **R** [RVS] [WHI]
Listing 1

0 POKE92,27+POKE56,27+POKE55,31+POKE55,59+CLR
10 FORX=0TO7NEXTAND:POKET.X,16+8:RINTX
20 IFX=235THENPRINT"ERROR IN DATA";STOP
30 LOAD
40 DATA2,181,23,108,0,177,251,261,31,249,5,163,9,139,9,36
50 DATA185,87,145,251,165,252,24,105,120,133,252,155,165,145,251,165
60 DATA137,261,258,208,4,198,254,198,254,261,27,200,4,239,254,238
70 DATA54,43,209,2,282,253,261,42,209,2,193,253,201,64,248
80 DATA5,155,128,141,1,144,165,254,261,22,209,4,163,29,133,254
90 DATA32,125,16,254,261,2,240,4,261,6,255,2,236,255,39
100 DATA244,4,261,2,280,2,193,253,32,19,257,253,261,255
110 DATA205,221,22,280,5,165,4,139,3,99,190,0,177,251,133
120 DATA97,201,15,176,5,169,10,133,8,96,169,3,145,251,165,252
130 DATA24,103,128,133,225,171,25,133,165,145,251,96,162,186
140 DATA193,230,21,30,231,32,32,4,203,10,189,8,157,21
150 DATA150,193,21,30,201,0,248,9,103,21,150,24,165,9,157,21
160 DATA150,262,288,220,36
200 DATA255,465,255,255,255,255,255,255,55,0,1,2,63,115,169,9,12
201 DATA254,17,16,255,255,255,6,0,0,128,252,156,100,144,68
202 DATA255,143,175,143,131,163,171,0,189,164,184,146,254
203 DATA255,223,223,255,148,9,0,189,151,151,254,164,24,6
204 DATA1,1,0,15,63,228,24,8,164,126,156,229,235,226,28
205 DATA2,15,9,15,15,3,2,192,240,144,240,249,192,64
207 DATA127,65,65,115,109,12,12,12,12,12,12,93,22,14,15,27
208 DATA46,72,204,252,232,28,24,260,218,13,83,123,253,223,75,33,182
209 DATA200,292,191,251,216,132,3,219,21,21,125,19,19,121,210
210 DATA255,05,65,176,76,65,255,0,123,66,122,19,18,123,6
211 DATA20,82,82,82,222,0,0,18,50,82,19,123,9,8
212 DATA0,123,19,10,56,16,123,0,221,187,221,187,221,187
213 DATA255,36,73,146,106,73,146,255,153,169,21,125,169,255,133,254
214 DATA256,255,255,255,255,255,255,255,255,255,255,0,0,6,0
215 DATA255,129,189,185,185,183,128,255,146,168,214,56,56,254,146,130
216 DATA0,0,0,0,0,0,0,119,36,17,59,145,52,23,94
300 DATA15,0,132,1,265,1,24,108,126,133,3,169,0,177,6,72
301 DATA177,2,26,200,177,0,136,145,208,200,177,2,136,145,2,289
302 DATA92,156,2,29,289,239,136,104,145,2,104,145,5,86,165,0,133
303 DATA185,1,24,156,128,133,3,169,2,117,7,72,177,3,72
304 DATA135,176,2,800,145,0,136,177,2,800,145,2,145,0,136,192,255
305 DATA259,239,209,104,145,2,104,145,0,165,1,67,201,24,24,6
306 DATA259,176,4,168,6,234,234,169,36,133,1,169,44,133,6
307 DATA32,9,14,193,0,133,3,32,18,23,169,132,132,32,61
308 DATA169,193,133,0,32,16,23,169,132,0,169,36,133,32,61
309 DATA169,193,133,0,32,16,23,169,132,0,169,36,133,32,61
310 DATA169,193,133,0,32,16,23,169,132,0,169,36,133,32,61
311 DATA169,193,133,0,32,16,23,169,132,0,169,36,133,32,61
312 DATA169,193,133,0,32,16,23,169,132,0,169,36,133,32,61

Listing 2

1 PRINT"VIC";30728#1V;39375;POKEV-6,255;V-V-216;221;DMA(4),S(5),H$5(6)="EXP" OR
2 FORX=0TO4ATX=11HEX(1)="VIC"X=1EXH1NEXT:HEX$0="PG"X=16HEX$8=251POKEV+1,18GOT
40 L=31M:HEX1=130:FORX=0TO4ATX=10NEXT:F$0=01SGSUB24
50 GOSUB363:GOSUB"NUMBER:GOSUB24""IF NOT=THENFORXTOT:POKE612,7T,31NEXT
50 POKE,255:PRINT"RIGHT"TIE,2,0HIFPEEK(254)=6THEN15
50 SYS971:FORX=1OMNEXT:POKE0,10IFPEEK(3)=1ANDX<180ANDPEEK(255)<22THEN
50 L=1L=1POKE(53)1IFX=0THENH
50 IFX=21THEN"=21FPEEK(253)+20 THEN"=0
50 POKE231,XPOKE1,01POKE4,1,1":SYSTEM151T=PEEK(25)+256PEEK(292)=X+C
50 POKE1,1POKE1,27+POKE1,2800;GOSUB14;POKET.28+P0KE2,1851GOSUB14;POKE1,1IPOKE1

Mutant beechballs are out to crush you. Can you survive?
By Stephen Gray

An evil wizard has changed you into a bert and put you in wobble land. Your task is to change the land's colour by jumping on the squares. Don't jump off the land — it's a long drop, and beware of the mutant beech balls which jump down to crush you.

Keys
North west A
North-east Z
South east X
South west ?

How it works
10-160 initialization
170-250 main loop
270-440 bert subroutine
450-580 ball subroutine
590-820 draw screen subroutine

Variables
L% level
S% score
D% dead or not
D% squares filled

BX% ball co-ordinates
BY% delay for ball bounce
B% number of ball bounces
A% bonus
X%Y% bert co-ordinates
P% colour of square bert's on
M%,N% bert's last co-ordinates
R% has bert moved or not?
J% which way bert is facing
C% colour of squares at start
CC% colour squares are changed to
MX%MY% bert last co-ordinates
BS% print bert
MS% NS% print bert
H%H% high score array
N%N% names of high scorers array
V% rank

850-920 fill an square subroutine
930-970 draw tiles of square subroutine
980-1120 initialization subroutine
1130-1160 start new game
1170-1290 new level subroutine
1300-1440 new high score subroutine
1550-1690 display high scores subroutine
1700-1800 dead bert subroutine

By Stephen Gray II
wizard has uliingcil yon uitu a ben and put you in wobble land. Your task is to change the land's colour by jumping on the squares. Don't jump off the land — it's a long drop, and beware of the mutant beech balls which jump down to crush you.

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IF YOU USE YOUR COMPUTER TO PLAY GAMES, THEN YOU CAN'T AFFORD TO MISS.

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Then you can forget about being too serious and start having fun. Easy when you think about it, isn't it?
Shingo Sugiura continues his series on user defined characters — and shows you some short cuts

As I explained in my last article, user defined characters are very useful for games programs and are easy to make. However, the process is time consuming and it would be nice if you could define the characters on an electronic graphics paper with you simply having to fill in the appropriate dots and the computer calculating the values for each row. Well, a program to do just that will be printed in several sections over the coming weeks. In each article, a section will be thoroughly explained. So it should prove a useful programming exercise as well as providing you with an invaluable utility!

First we must decide what facilities we want from this utility program. Obviously, we must be able to define a character on an enlarged grid. We also want it to be shown in real size as we design the character in enlarged mode. So the basis of this program is a large grid in which you can move about via the cursor keys and each dot may be filled in or deleted with ease. While we are at it, we might as well print the number for each row.

Now that we’ve decided on the basis of this utility, we need the “frills.” I have decided to include the usual facilities such as clear grid, rotate left/right, mirror, upright and mirror. All these facilities may be used during editing.

Probably the most important facility is save, which you allows you to save the characters in BASIC format such as:

`10 A = 23 23 25 23 23 5 23 65`  
This is useful if you design lots of characters in one go but is often neglected for some reason.

I believe the quickest way to write a program is to write modularly, that is to say, write the program in small distinct sections. Also, definitely no GOTOs or GOSUBs. Recently, there’s been a big debate over this and some people seem to avoid using GOTOs without knowing why. Well, using GOTOs slows down program development and also makes debugging a pain in the neck. Because of the inclusion of procedures in BBC BASIC, you can start writing a program by a system of code such as the one shown below:

```
DATA "MAIN"
DATA "PROC"
```

You can immediately see the structure of the program and yet we have hardly written any code! In this way, you can write PROCedure “init”, then debug it, then PROCedure “main” then debug that and so on. It also means that if you find a bug at a later stage, you can quickly track it down and deal with it.

So to finish off, I will leave you with the first few lines of the program. As you can see there’s just a series of PROC statements. All that’s left is to add the various procedures. That’s it for this week. In my next article, I will go on to the main procedures.
Richard Seeley gives the thumbs-up to Micro Pulse's ROM Box

One of the BBC's most useful design points is its ability to use up to 16 paged ROMs. One of its worst design faults is that there are only four sockets provided for such programs to occupy. This means that users have a need for more ROM space and there is a whole range of options available internal and external ROM boards, ROM cartridge systems and even RAM based emulators which allow you to load such programs from disc instead of cassette. The question is which one of these systems best suits your needs and is available at the right price.

This product from Micro Pulse may seem slightly strange at first glance. It is an external ROM box with spaces for eight ROMs but only one of which can be used at a time. This might be construed by some as a rather useless concept why have eight sockets and only be able to use one?

I have to disagree. Having used the box for a number of weeks I find that not only does it fulfill a purpose but it can make life much easier for the ardent BBC user and reviewer.

The unit is supplied as a cream coloured box, connecting cable, instruction sheet and guarantee. Fitting is simplicity itself and the explanation sheet is quite specific although a diagram might help those less familiar with the machine.

The cable trails from the right hand side of the BBC case and can be lightly clamped into position when you screw the case back together. The then connects to the box via an insulation displacement connector. This is an excellent feature as it makes the BBC easy to transport and the box itself cableless.

At the top right of each socket there is a red LED, which responds to the switch which selects the ROM to be powered. This too is a good design feature and shows dramatically through the perspex cover which program is ready for use. As all the ROMs are memory mapped into the same area and share a single register location, they can be switched with the BBC power on and then called as required.

One of the sockets is a zero insertion force socket and this allows very easy exchange of ROMs with no damage possible to either ROM or board. You simply place a between the "jaws" and then clamp them shut. All the other sockets are of the usual main board type but are of a very high quality.

I thought at first that this box would only have been of use for language ROMs which you only use once a time, and this is how I have mainly used it. I find however that it can also be used very effectively with utility ROMs. The instructions say that you need to select the ROM and then press CTRL/BREAK but I find that if you are switching between service ROMs then this is unnecessary and you only need to call the routine you want. You do have to press BREAK when changing from one language to another, however.

In summary, I have to declare that this is a very well built and designed product. It seems a little expensive but is certainly the Rolls Royce of such units. All of the design features contribute to its simplicity and it will be of great use to those who have a number of ROMs which they use occasion ally but not enough to justify their taking space on the mainboard.

There are no problems of overheating and none of the ROMs in the system I used interfered with any of the others. It can be used with an internal ROM board and allows you to have up to 23 ROMs attached to the BBC with 16 in use at any one time.

Price £39.95

Publisher: Micro Pulse

Address: Churchfield Rd, Frodsham, Cheshire WA6 6RD
Find those sprites!
I was very interested in the TI program in HCW 105 about the use of CALL PEEK to detect a sprite coincidence. I was wondering if anyone knew about other uses of CALL PEEK without the memory expansion system for finding which two, even 28 sprites are the ones involved with the coincidence.
In TI Extended BASIC you can't use character sets 15 or 16 because the computer uses these memory locations to handle sprites but if your program (in Extended BASIC) doesn't use any sprites then can you in any way access sets 15 and 16? I don't have a memory expansion.

Mark McGurr, Cheshire

Amstrad old boy
I disagree with N Middleton's letter in HCW 107 Why doesn't he go and buy the Beano or the Dandy, or give up computing?
I have taken every copy of HCW and been an Amstrad old boy - 60 years next month - I have several other mags as well. You are producing a really first class mag so keep it exactly as it is. I know there's not much on the Amstrad, but I'm pleased with it.

The only thing that is bad is the classified advertisement. The rates are too high, at 35p per word, as against other mags which are 25p at the most - and some are free.
Thanking you for good value.
S. Fowell, Dagenham

PS. Any chance of more programs on the Amstrad?

Play it again, Sam
I was pleased to see the new look HCW, which now rates as one of the best weekly magazines. Most magazines can be measured for quality by how long they hold your attention. Several last a few minutes - HCW lasts for hours.
One thing I would like to see is a section where readers write in with games they would like to see reviewed. I've done a review of a game I thought of buying, and ended up not getting the game for fear of it being a turkey. This is especially relevant when games are being sold at cut prices.
Of course a section like this would be rather like repair on television - but far more beneficial to your readers. Or maybe you could reprint all your reviews from old mags, and get them into a book - the HCW Buyer's Guide to games and software.
For starters, what do you think of US Gold's C64 version of Spitfire Ace for £6 95?

Andy Clarke, Baddeley, Enser

We're interested in taking up your idea Andy, but we would only feature highlights of the review. It's up to you, readers, to let us know which game reviews you would like to see again. Write to our readers page.
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Your Jokes

Have you heard about the squashed chocolate bar in the middle of the road?

It was a careless Wispa!

Hillary Buswell, Slough

Two eggs sitting in a pan of boiling hot water. One says to the other: "Car blimey, it's hot in here!" The other egg replies: "Just wait till you get outside they smash your head in!"

Wendy Palmer, Croydon

What do you call a boomerang that doesn't come back?

A stick!

Keith Fawler, Cumberworth

What's green and red and spans round at 60 mph?

A frog in a liquidizer!

Pete Poole, Guernsey

Two cowboys were playing, cowboys and Indians. Which one was the cowboy?

Neither, they were both indians!

Nick Collett, Manchester

What do you call a Chinese woman with a food mixer on her head?

Benda!

Nicole Segrey, London

What do glow worms eat?

Light meals!

What do sheep and ink have in common?

They both live in pens!

What is the longest word in the English dictionary?

Smiles (there's a mile between the first and last letters)

The sky is full of holes.

That's where rain comes from.

The holes are very small.

That's why rain is thin.

Dorothy Boyd, Twickenham

What's the difference between a ZX81 and a cardboard box?

A ZX81 has wires coming out of the back.

Simon Forth, Brough

Wizard and the Princess

This game is an adventure. It has live situations and at the end of each stage you have to find a key to unlock the next stage. This can get a bit dull sometimes.

The point of the game is to save the princess from the evil castle. You are the brave knight willing to fight for the princess.

For this stage you are in a castle with no wizards, but if you aren't careful, by taking a wrong move you may find yourself falling off the cliff. Once you've found the dragon, we have a dragon which guards the dam, in order to enter.

You next have to find your way through a maze. This is where you have to find the correct path to escape from the maze.

If that wasn't enough then you have to fight creatures which protect the maze. These monsters are in different rooms.

And you must find your way through the rooms, killing the monsters until you find the princess.

Finally, in order to escape the castle you are confronted by the troll which you must kill. At this stage you must avoid falling down. You are then congratulated on your success.

Alan Wright, of 145 Queen St, Retford, Notts DN22 7DA, has compiled a detailed list of books available for the TI 99/4A. Contact him for details.

Garry Baker, of 25 Clayburn Gdns, S Ecclesden, Essex RM5 6AT, wants to know where he can get hold of the Software and peripherals for his Aquarius. He's looking for a mini expander and an interesting game.

Vicky Wright, of 1 Mill Green, Wollaston, S Wirral, Cheshire L64 2TH, would like to hear from Electron users who are interested in the machine.

Lee Goodall, of 43 Bamford Ave, Woodthorpe, Chesterfield, Derbyshire, S41 7QJ, needs help on Dennis through the Drinking Glass. Can't work it out. He's also stuck on Software.

Kevin Fowle, of 16 Shepherd Rd, Ladywood, Nalton, 37307 S Africa needs penfriends. He owns a Spectrum and is interested in adventures.

Kenneth Grant, of 58 Rycroft Dr, Withernsea, N Humberside HU19 2LX is a 16 year old TI 99/4A owner who would like to write to other TI owners to swap ideas. He owns the basic machine, a few cassettes, books and Parsec Jan Lomond, of 9 Meadow Close, Wolsey, Hinckley, Leics LE10 3LW, owns a C64 and Simon's BASIC. He would like to get in touch with others to swap cassettes and ideas.
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CHUCKIE EGG 2

Our intrepid hero "Hun House Harry" of "Chuckie Egg" fame has been called in to help a "Chocolate Egg" manufacturer sort out his automated factory which has gone haywire. Harry using all the skills he acquired working in the Hun House must get the wheels of industry moving. Not only does Harry have to collect the ingredients to mix the eggs, but he will also have to collect the parts for the toys that go inside the eggs.

As if all these problems were not enough there are a number of other items that Harry will need to find and use to be able to complete the task. Things like ladders, ropes, girders, keys and many more.

Chuckie Egg 2 contains 120 screens, plenty of surprises, and it is true Arcade/Adventure game. You don't just find things, you actually move them and use them.

Available from Good Computer Stores

£6.90 also available direct from A&F

Great games, Great ideas.
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