Home Computing WEEKLY

An Argus Specialist Publication

August 16-22, 1983 No. 24

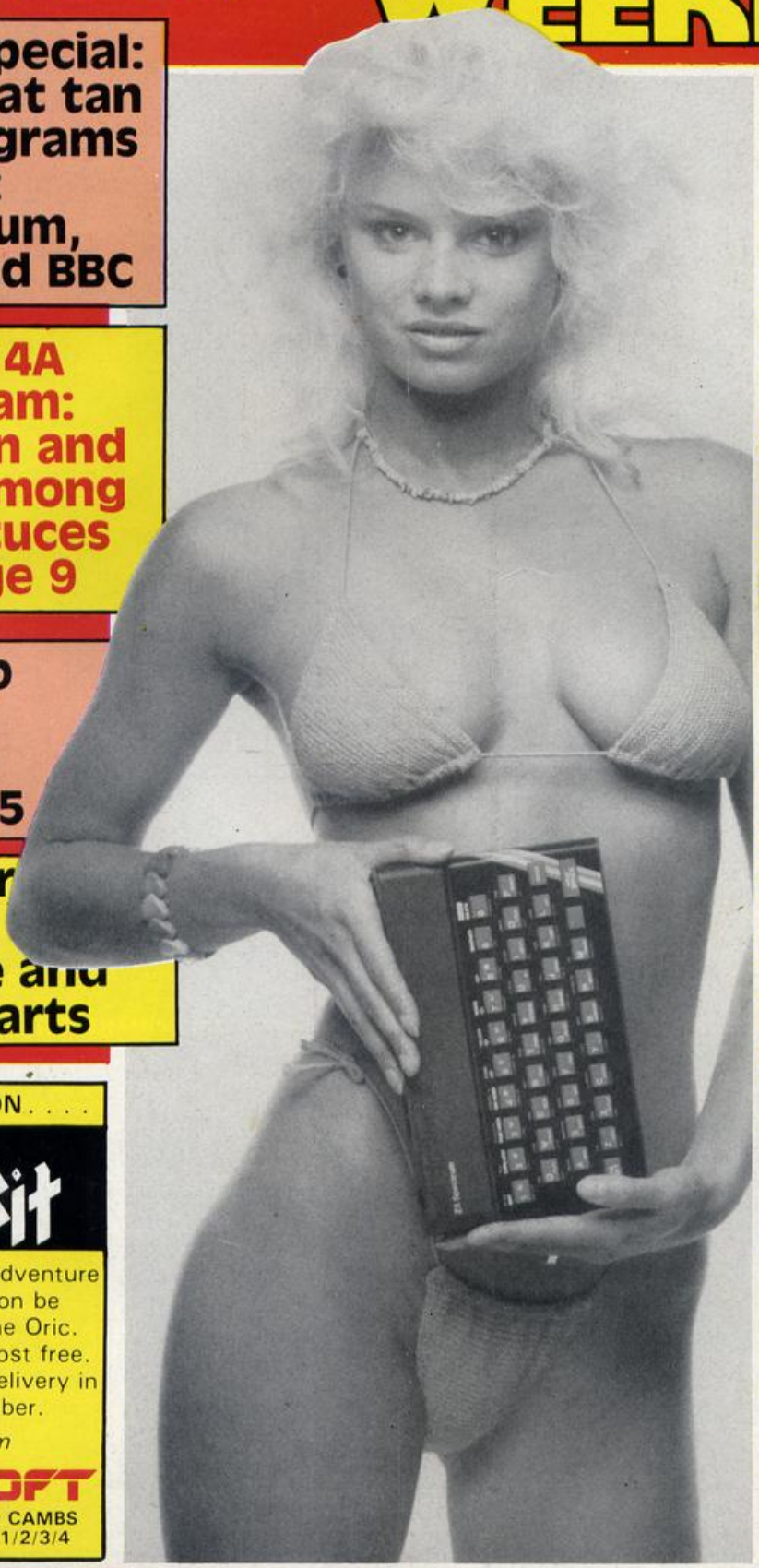
38p

Holiday Special: Get a great tan with programs for: Spectrum, VIC-20 and BBC

TI-99/4A program: type it in and battle among the lettuces — page 9

Delve into hex with your Oric — page 15

PLUS: Your letters, U.S. Scene and Top 10 charts



Boots to stock more micro products

The Boots chain has announced plans for a major expansion of its home computer coverage. By the end of September, it aims to have home computers, peripherals, and an extensive range of software in 250 of its major stores — and 32 of them will have a special computer department with a computer consultant in attendance.

From September, most Boots stores will stock the ZX81, Spectrum, Dragon, VIC-20 and Commodore 64, a range of peripheral equipment including cassette

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■ ■ ■

Felix takes a bow at Acorn show

Felix is out to rival Horace as a character in computer games.

He will make his first appearance, complete with flat cap, at next week's Acorn User show.

Program Power is bringing out the first two of a range of £7.95 games for the BBC model B micro which feature the new character.

In Felix and the Fruit Monsters his mission is to protect fruit from

Continued on page 5

COMING SOON . . . .

The HOBBIT

This incredible adventure game will soon be available for the Oric. Price £14.95 post free. Order now for delivery in late September.

Only from

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3 Club Mews, Ely CAMBS
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COMING SOON . . . .

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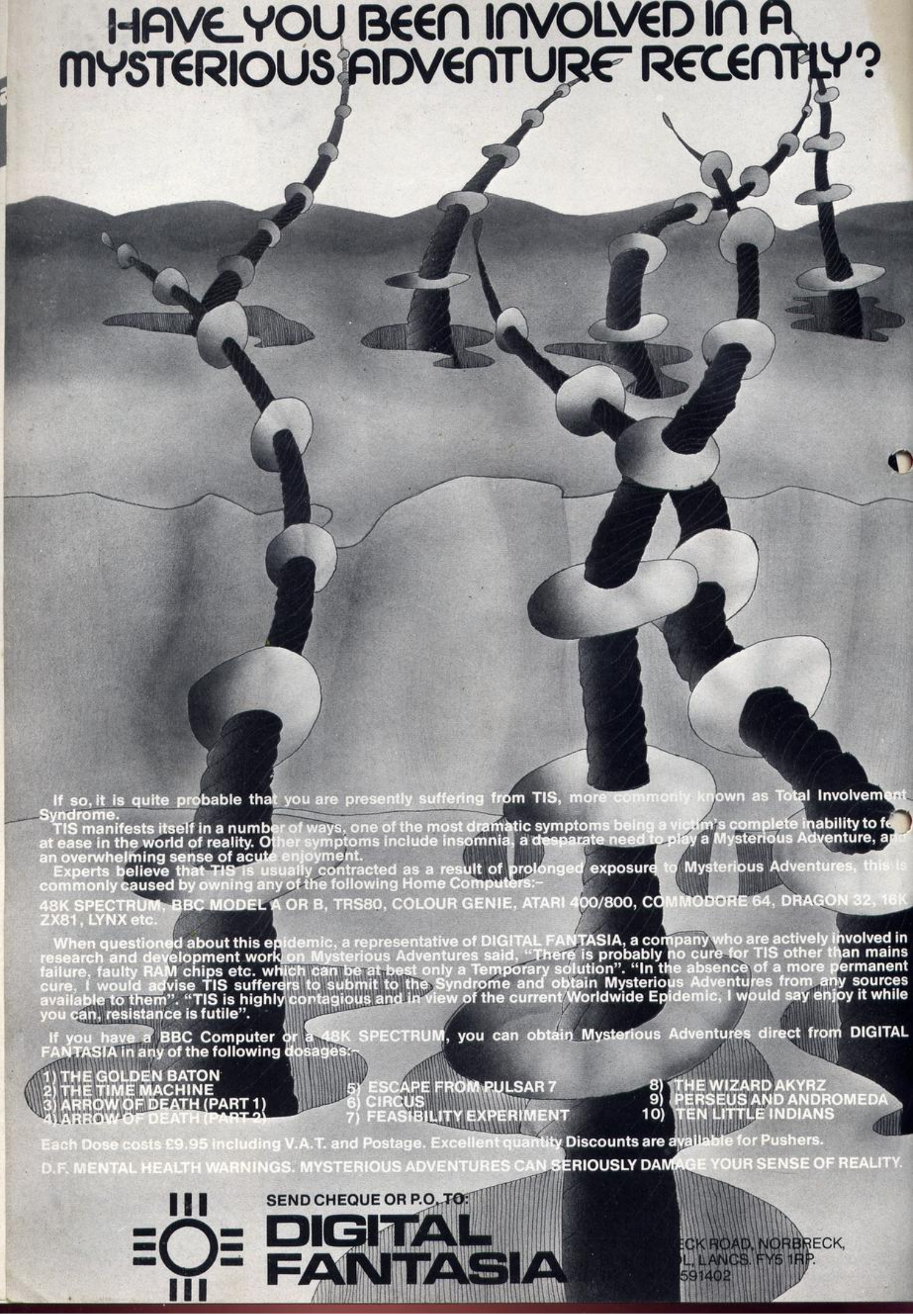
HAVE YOU BEEN INVOLVED IN A MYSTERIOUS ADVENTURE RECENTLY?



If so, it is quite probable that you are presently suffering from TIS, more commonly known as Total Involvement Syndrome.

TIS manifests itself in a number of ways, one of the most dramatic symptoms being a victim's complete inability to fe at ease in the world of reality. Other symptoms include insomnia, a desparate need to play a Mysterious Adventure, and an overwhelming sense of acute enjoyment.

Experts believe that TIS is usually contracted as a result of prolonged exposure to Mysterious Adventures, this is commonly caused by owning any of the following Home Computers:-

48K SPECTRUM, BBC MODEL A OR B, TRS80, COLOUR GENIE, ATARI 400/800, COMMODORE 64, DRAGON 32, 16K ZX81, LYNX etc.

When questioned about this epidemic, a representative of DIGITAL FANTASIA, a company who are actively involved in research and development work on Mysterious Adventures said, "There is probably no cure for TIS other than mains failure, faulty RAM chips etc. which can be at best only a Temporary solution". "In the absence of a more permanent cure, I would advise TIS sufferers to submit to the Syndrome and obtain Mysterious Adventures from any sources available to them". "TIS is highly contagious and in view of the current Worldwide Epidemic, I would say enjoy it while you can, resistance is futile".

If you have a BBC Computer or a 48K SPECTRUM, you can obtain Mysterious Adventures direct from DIGITAL FANTASIA in any of the following dosages:-

1) THE GOLDEN BATON
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4) ARROW OF DEATH (PART 2)
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6) CIRCUS
7) FEASIBILITY EXPERIMENT
8) THE WIZARD AKYRZ
9) PERSEUS AND ANDROMEDA
10) TEN LITTLE INDIANS

Each Dose costs £9.95 including V.A.T. and Postage. Excellent quantity Discounts are available for Pushers.

D.F. MENTAL HEALTH WARNINGS. MYSTERIOUS ADVENTURES CAN SERIOUSLY DAMAGE YOUR SENSE OF REALITY.

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The Top 10 programs for the ZX81 — page 11

The latest from America is on page 11

Reviews of Spectrum software are on pages 8, 17 and 23

Home Computing WEEKLY

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Argus Specialist Publications Ltd.
145 Charing Cross Road, London WC2H OEE. 01-437 1002

Home Computing Weekly is published on Tuesdays. Distribution by Argus Press Sales and Distribution Ltd, 12-14 Paul Street, London EC2A 4JS. Printed by Alabaster Passmore & Sons Ltd, of London and Maidstone, Kent. Design and origination by MM Design and Print, 145 Charing Cross Rd., London WC2H OEE

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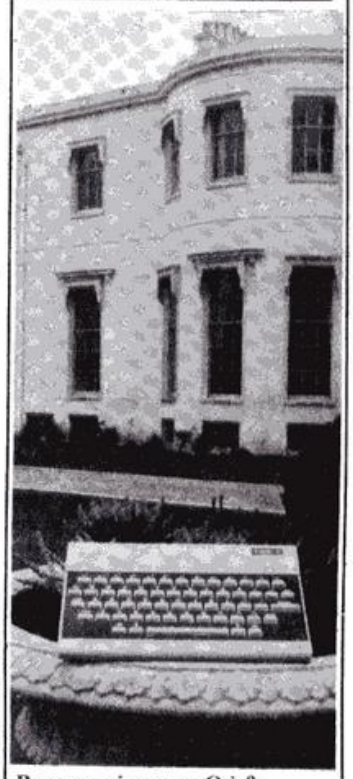
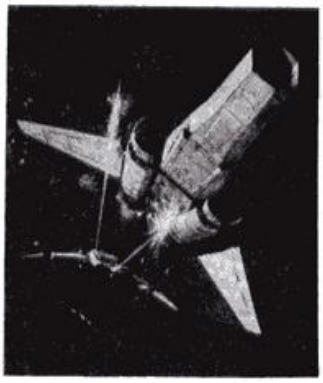


Programming your Oric? See page 15

Your garden's a battleground when you type in the TI-99/4A program on page 9



Soar into space with our reviews on page 8

Get Knotted!

With the latest creation from New Generation

An action game that needs nerve and quick reactions! Hurtling through a void, your task is to travel as long as possible, scoring points along the way. Be careful though as you will have to avoid your own trail and those of up to four chasers. As trails are left you will have to thread your way through, but don't forget the more trails the less space for manoeuvring. You will be terminated when you finally get caught in 'the Knot'.

For 48K Spectrum and compatible with Kempston, AGF and Mikrogen joysticks.

'It is the most astounding thing you'll see for a long time' – Popular Computing Weekly.

GSH

New Generation Software

New Generation Software FREEPOST Bath BA2 4TD

FOR FIRST TIME USERS...

A new series of books which introduce newcomers to the most widely used micros in the marketplace.

The books assume absolutely no knowledge about computers and the reader is shown even the most fundamental operations such as "switching on" and "loading a program". The books lead the reader through simple programming and then onto graphics, with several programs which show how to achieve pictures and even animation. The books contain a number of specially written programs which show the full potential of these machines.

"The text is liberally supported by all manner of useful diagrams and illustrations (including many black and white photographs of the screen). The overall presentation is excellent. The printing, setting out and listings are clear and positively invite the reader to have a go."

EDUCATIONAL COMPUTING

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HCW21

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- ☐ Learning to Use the Oric 1
- ☐ Learning to Use the Lynx

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READ-OUT

HCW24

Felix

Continued from front page

garden monsters by carrying the fruit to a safe place and gassing the monsters.

And in Felix and the Factory his job is to keep a machine operating. He runs up ladders and along walkways oiling the machine and poisoning rats which threaten production.

Marketing assistant Christopher Payne said there would be at least two more arcade games in the series.

Program Power is also launching a two-player game for the BBC at £6.95, called Bandits at Three O'Clock.

Players are in control of biplanes firing at each other. There is a choice of night or daytime flying and the hazards include murderous barrage balloons and a church spire.

The show is being held at the Cunard Hotel, Hammersmith, on August 25-28 and Acorn will be launching its new £199 computer, the Electron, based on its successful BBC micro.

Several companies will be showing software for the new computer, including Acornsoft with new versions of their BBC favourites, like Monsters, Snapper, Meteors and Starship Command, all at £9.20. Chess, Draughts, Reversi and Tree of Knowledge will also cost £9.20.

Electron versions of Lisp and Forth cost £16.10 each and Personal Money Management is £11.50.

Acornsoft is also showing several new games, all at £9.95, for the BBC micro. Freefall, Crazy Tracer, Carousel and Meteor Mission are arcade games, Kingdom of Hamil is an adventure and Drogna is a two-player game of logic.

R. H. Electronics will be releasing three new games at £8.95 each — Ski Slalom, Galactic Wipeout and Viper. And there will be two three-in-one cassettes, priced at £7.50 each. All are for either model of the BBC micro. The company also has a light pen at £44.95.

Advanced Memory Systems is showing its three-inch disc drive — based on Hitachi mechanism — which costs £225 for the single disc version, storing 100K on each side and with a claimed access time of three milliseconds. Twin drives are £399.

● dk'tronics will not be at the show, but the company has just brought out BBC versions of its two Spectrum tapes, both at £6.95. They are Dictator, a role playing game, and an arcade game called Proteans.

Boots

Continued from front page

recorders, disc drives, printers and memory expansion, and more software than ever.

The major stores will also stock the BBC micro and as many as 350 different software titles, including some disc-based software.

But Terry Steel, Boots' public relations director, denied that Boots was changing its image. "Far from it. If you look at home computer in the context of our established business in audio and photographic equipment, it's a natural move.

"This is quite simply an expansion of the departments we've been having for quite a while."

Nor will any of Boots' existing product lines be edged out by micros. Space for the new departments will be made by rearranging existing areas.

Boots plans to have trained staff on hand at all its outlets that stock computers, but Mr Steel admitted that training was "a big problem".

He said: "We're taking it gradually and steadily. We have a standard computer training course run by our training department which all staff in the 250 stores that will stock computers have taken part in.

"We're also recruiting outside people with experience of selling computers for the top 30 stores, and they will be going through a more intensive course.

"We see training as a process of gradual increase in experience by our staff as they become more familiar with the machines. We've made considerable strides already, and we propose to continue along the same lines."

Commenting on the Boots initiative, Stewart Binnie, merchandise controller for W. H. Smith, said: "We share their perception of the marketplace, and in consequence are already selling computers in 250 branches. We plan to open more computer shops-within-shops before Christmas."

Microdrive latest

The first batch of Microdrives were due to be despatched to Spectrum owners last week, said Sinclair Research. A high proportion of people sent order forms decided to take up the offer, said the company.

It would be continuing to control the number of units offered so the company could keep to its promise of delivery in 28 days.

Sinclair Research, Stanhope Road, Camberley, Surrey

Programs are on the books

Pan Books and Personal Computer News have got together to bring out a range of computer books.

The first four, due out next month, will each contain 40 programs for the BBC micro, Dragon, Spectrum and Oric and will be the first of its Bumper Book of Programs series.

In November its series called the Definitive Companion and Instant Arcade Games begin and more are planned for next year.

Pan Books, Cavaye Place, London SW10 9PG

Acorn's 32K Electron — launched at the show

You could be on our pages

We welcome programs articles and tips from our readers.

PROGRAMS should, if possible, be computer printed to a width of 48 characters (use a new ribbon) and/or sent on cassette. Check carefully that they are bug-free. Include details of what your program does, how it works, variables you have used and hints on conversion.

ARTICLES on using home computers should be no longer than 2,000 words. Don't worry about your writing ability — just try to keep to the style in HCW. Articles most likely to be published will help our readers make better use of their micros by giving useful ideas, possibly with programming examples. We will convert any sketched illustrations into finished artwork.

TIPS are short articles, and brief programming routines which we can put together with others. Your hints can aid other computer users.

Competitive rates are paid.

Keep a copy of your submissions and include an SAE if you want them returned. Label everything clearly and give a daytime and home phone number if you can.

Paul Liptrot, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE

Mr. Chip
SOFTWARE

VIC 20 GAMES AND UTILITIES

BUGSY (Joystick Only)

This is a Minefield with a difference as you step on the stones whilst collecting purple boxes which give you both time and points, they disappear from beneath your feet. DO NOT DESPAIR! "BUGSY" will randomly replace the stones but avoid bumping into him or its sudden death! An original compulsive and challenging game. **£5.50**

JACKPOT

This is it, the ultimate fruit machine for the VIC with nudge, hold and respin 100% machine code. "Overall Jackpot is a beautifully written simulation giving superb graphics, animation and use of colour. In fact, this program makes Commodores fruit machine cartridge look unbelievably cheap & nasty" Home Computing Weekly No. 20, 19/7/83. **£5.50**

MINI-ROULETTE — PONTOON — HI-LOW
Three great games of chance for the VIC, try to beat the computer, hours of fun, full colour, sound effects and tunes..... **£5.50**

DATABASE — create your own files and records on tape..... **£7.50**

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LUNAR RESCUE — Our own version of that popular arcade game.. **£5.50**

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M/C SOFT 64 — Assembler and Disassembler, with decimal to hex converter, everything our program for the VIC will do and more..... **£7.50**

BANK MANAGER 64 — As our Super Bank Manager, but for the 64.... **£7.50**
Now available on disc with added facilities **£10.00**

Full documentation with all utility programs.

Other software available for the VIC and Commodore 64, send for free brochure, including **RABBIT SOFTWARE** at **£5.99** each.

Send Cheques/PO's to: MR. CHIP SOFTWARE

Dept HCW, 1 NEVILLE PLACE, LLANDUDNO, GWYNEDD, LL30 3BL. Tel: 0492 49747

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All programs now available on disc please allow £2.50 ea extra.

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Bamby SOFT WARE

GOLDEN APPLES OF THE SUN:
The Golden Apples have been stolen and hidden in seven different locations. Can you recover them all? There's a surprise once you have. Hi-res graphics and text. **£8.45**

STOCKMARKET:
Test your skill on the stockmarket. Prices are influenced by your own actions, and Government actions — just like the real thing! See if you can make a million. Text **£5.95**

ALIEN ODDESSY:
A four-part adventure game. This tape contains the first two parts, in which you must escape from the Castle, then journey across the Great Grass Plains to the Mountains of the Moon. Hi-res graphics and text. **£9.95**

MINI—GAMES:
Four short games on tape consisting of Blackjack, Maths Test (5 levels of difficulty) Guess the Number, and Layers, a game in which you try to survive a year in the farming business. Text. **£5.95**

INTER—PLANETARY TRADER:
You are the Captain of a Starship. You have to buy a cargo, and attempt the inter-stellar jump to your destination. But beware, meteors and space pirates are out to get you. Text. **£5.95**

DRAGON TI-99/4A for SPECTRUM 48

DATABASE: (DRAGON)
A personal filing system we can modify to suit your own requirements. Please ask for quote. **Approx. £15.95**

SURPRISE: (DRAGON)
Regain the magic ring, but to do so you must first find the key to the Tower, avoid robbers, and more. Then bewitch the Dragon, and you're home and dry — almost. Hi-res graphics and text. **£8.45**

SCANNER 13: (DRAGON)
Set in the City of the future, this game combines the best elements of both arcade and adventure games. Destroy the evil Drones before they destroy you and your City. Three levels of difficulty. Hi-res graphics and text. **£8.45**

BOPSWIZZLE: (DRAGON)
A splendiferous fun game! Beat the ghastly Gloops and the yucky Yerkies, amongst other nefarious nasties. Collect pearls at the same time! Low and hi-res graphics and text. **£5.95**

AMAZING: (DRAGON)
Series of five mazes specially for the under 5's ranging from quite simple to fairly complex. An excellent way to amuse pre-school children, and they learn from it too. Hi-res graphics. **£5.95**

ALONE AT SEA: FOR THE TI99/4A (T1-99/4A)
Try and escape the sinking ship, but don't forget your supplies which are hidden somewhere. Text **£6.50**

K-64 (T1-99/4A)
A mind-bender. Cover the squares once only using the knight and its valid moves. Easy?! Full graphics. **£6.50**

MYSTERY MANOR: FOR THE SPECTRUM (SPECTRUM)
Find the murderer before he (or she) finds you and your career as Detective Solvit! Graphics and text. **£6.50**

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Based on the famous game. Try your skill against the computer. You **CAN** beat it . . . Graphics and text. **£6.50**

All available immediately from Bamby Software, Leverburgh, Isle of Harris PA83 3TX. Includes our no quibble guarantee.
Access orders welcome by mail or telephone: 085982 313 Dealer Enquires Welcome and 48 hour delivery

The promises behind the symbol

This symbol will soon be appearing on software cassettes, showing that they are backed by the charter of the new Guild of Software Houses.

As first revealed in Home Computing Weekly nine weeks ago, major software houses have got together to form GOSH, prompted by Quicksilva.

The secretary is Mike Johnston, best known for organising the highly popular ZX Microfairs.

GOSH chairman Nick Alexander, boss of Virgin Games, said: 'We were looking for someone who had administrative experience, was closely involved in the industry and had a neutral standpoint.'

Vice-chairman of GOSH is Rod Cousens, managing director of Quicksilva, and treasurer is Dougie Berne, of Silversoft.

Each is paying £500 a year for membership. Mr Alexander said: 'We are not sure how many we will attract. We are not after numbers, we want people who will abide by the charter.'

Mr Alexander is also an official of the Computer Trade Association, to which the guild is affiliated.

Eventually GOSH plans to have a full-time office and build up a fighting fund to crack down on software piracy – one of the reasons which led to the guild's formation.

The main guarantees in the guild's Customer's Charter are:

- A high technical standard, with faulty goods replaced free and promptly.
- Mail orders despatched within 28 days.
- Action on complaints within five working days.
- No goods advertised before they are available.

Action would be taken against any member failing to live up to the charter, which could mean a fine or, ultimately, expulsion.

Guild of Software Houses, Guild of Software Houses, 71 Park Lane, Tottenham, London N17 0HG

New micro takes a bow

A new £300 computer will make its first public appearance next month.

British designed and made, the Elan will have 64K of RAM, a real keyboard and a range of software available when it goes on sale in March or April next year.

The Elan range was designed at Intelligent Software but Elan Computers is backed by a consortium of British and foreign investors.

Three directors of IS have a minority interest.

In fact, IS already had a computer on the drawing board when the company was approached with an offer.

IS is best known for programs like Cyrus-IS-Chess, marketed by Sinclair for the Spectrum, because the chairman is the well-known chess champion David Levy, 38.

And Elan's marketing director Michael Shirely, 42, said he expected contracts to be signed with major retailers within a week or two.

Other products, like peripherals, were in the pipeline.

The Elan will make its public debut at the Great Home Entertainment Spectacular at Olympia, starting on September 17. Then it goes on show at the PCW show at the Barbican, beginning on September 28, and at Brainwave, held at Birmingham's National Exhibition Centre, from November 4.

Elan Computers' chairman is Lachu Mahtani and the managing director is M. L. Mirpuri. Both run an import-export company at the same north London address as Elan.

Elan Computers, 31-37 Hoxton Street, London N1 6NJ

My family caught the micro bug

IT ALL started with computer studies. Not mine, my daughter's. At the time, I just thought it would be useful for her to get up to date with new technology. But of course, that was just the beginning...

Her friends had microcomputers, so she caught the bug — and brought it home. I had never really noticed the computer ads in the papers or colour supplements before; I was usually too busy trying to hunt down the articles. Now I started to sit up and take notice.

At that point I took another critical step — I bought my first computer magazine. It was followed by another, then another, then another. Each purchase was greeted by cries of "Are we getting a computer, then, Dad?"

• • •

I was certainly thinking about it — and my bank account. The BBC programme was running at that time, and I was receiving inputs from everywhere and trying to make sense of them all.

Meanwhile, my daughter had been looking at various computers and had decided it must be a Spectrum. I managed to look knowledgeable. "Mmmm, a Spectrum." In conversation with a friend, I mentioned the subject in passing, and was quickly put in my place: "Oh, we bought one last week!" Still, they'd had a ZX81 for ages; they were old hands at the game.

The next step came when they invited us over to view a Spectrum in the flesh, or plastic. We were hooked. Mind you, PEEK, POKE, READ and INVERSE looked just as bewildering on the keyboard as they did in the magazines. But the twenty pence jar had been filling up slowly, and there was just enought in there to cushion the shock to the bank account. It was time to take the plung.

Is it really 1.30 in the morning? As you'll gather, we bought the little black box (all that money for that, commented my wife), and I'm now in the throes of ploughing through the manual. Is it me, or are the chapters out of sequence? They don't give you an introduction to the keyboard until the end of the book.

• • •

The three children are still happy to program games out of the pile of magazines. Well actually, the youngest just **plays** *the games. Even at this early stage we are having to operate a rota system so that everyone gets a go. But why is it I am on permanent midnight shift?*

As a beginner, I've found that the best approach is to buy all the magazines you can lay your hands on and piece all the information together.

I'm still finding my way round the keyboard, but at least I understand all the functions now, and I've managed to get myself on a residential course on simple programming starting next week — which is back to where it all started I suppose. I have seen the light... now for the illumination.

Rod Pickles
Radar technician
Plymouth
Devon

• This space is for you to have your say about the micro scene as to comment, or to present bouguets or hurl brickbats. Share your views by sending them to Paul Liptrot, Opinion, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE. Please include your occupation and your interest in computing.

Soar into space and back in time

Adventure lurks within your micro — if you pick the right program. Our reviewers return from some strange places to rate these games for you

Caveman Adventure BBC £6.95

Program Power, 8/8a Regent St, Chapel Allerton, Leeds LS7 4PE

Frustrating at first but the game then becomes addictive. Effective use of colour, and a picture if one progresses far enough, maintain interest; and the sounds of running water and the odd growl help the player to avoid danger.

I would have preferred not to have been forced into an end game situation as quickly, and as often as I was at first. But you quickly learn to hang on to your life for longer as you get used to the programmer's sense of humour.

The game starts in a cave with may exits. The aim is to guide the caveman back to his tribe without falling foul of the many dangers of a wild and primitive world: wild animals, river journeys, deserts and mountains.

On your travels you find various objects which could be useful in overcoming the hazards. It is up to you to decide if it is worth picking them up, but remember that the most unlikely objects can be useful in the most unlikely situations.

The tape loads easily and excellent use is made of the function keys.

J.D.

instructions	80%
playability	90%
graphics	n/a
value for money	80%

★★★★

Death Satellite Oric-1 £6.90

A & F, 830 Hyde Road, Manchester M18 7JD

Death Satellite is a text adventure, similar to A & F's Zodiac in style, in which your time capsule, out of fuel, has landed on a satellite.

Your task is to find a new fuel supply and escape from all the terrors present on what proves a most unfriendly satellite. Just 10 key words are contained in the instructions supplied, but there are many more within the program which you have to find yourself.

It seems easy at first, but there are many places to explore, and many dangers to overcome, including robots, a huge mutant rat and a large daisy. Objects may be carried or dropped to help your cause.

All to often you die at the hands of the mutant rat, radiation sickness or the daisy, or are sucked out into space. After many hours of searching, I am still seeking the elusive fuel.

But that makes Death Satellite all the more absorbing and provides the right amout of challenge to keep trying — even in the early hours of the morning!

S.I.

instructions	50%
playability	80%
graphics	n/a
value for money	75%

★★★★

The Valley 48K Spectrum £11.75

ASP Software, 145 Charing Cross Road, London WC2

The Valley is an attractive adventure game in which you have to successfully cross a landscape to enter a wooded or swamp area of your choice and penetrate a castle in search of a magic helm.

On the way you may find hidden treasure, or be attacked by a legion of monsters. Fighting them and any injuries sap your strength, and although you usually win the nasties keep on coming.

During play the lower part of the screen shows scores, strengths and a blow by blow text account of combat. The upper shows one of three displays, a map, the castle grounds or the castle interior, as each stage is reached.

The graphics are good, but the monsters are not visible — just everywhere.

The program loaded easily, but did not autorun, so the colourful well-labelled listing is easy to get at. An early invitation to position the tape and load was puzzling, but refers to the option to save your present score and have a breather.

A wide range of monsters and weapons, and random-generated layouts ensure a different game each time. You can choose grades of difficulty during the game, and the monsters get nastier nearer the target.

H.C.

instructions	70%
playability	90%
graphics	60%
value for money	50%

★★★

Scanner 13 Dragon 32 £8.45

Bamby Software, Leverburgh, Isle of Harris PA83 3TX

The world was attacked by carnivorous Flutter Drones and so a network of towers was built with a powerful scanner weapon. The menace was defeated, the towers decayed, but now the drones are back and only you and the one working tower — scanner 13 — can destroy them. But first, you must discover how to work it!

This is described as a graphic adventure game but is actually more arcade orientated. Written in BASIC, it nevertheless produces good sound and colourful, effective graphics. The response to the player is good, screen display and error trapping is excellent.

The scenario was given after a first time load, along with a page of "advice" on controls. There are three skill levels and nine controls (effectively seven because two controls are to repeat scenario and advice screens).

Much of the fun is in deciphering the displays, although once mastered there is plenty of action in trying to destroy the drones, air mines, etc. without being annihilated yourself (and you only have a limited amount of energy!)

R.E.

instructions	83%
playability	95%
graphics	88%
value for money	81%

★★★★★

Zodiac Oric-1 £6.90

A & F Software, 830 Hyde Road, Manchester M18 7JD

Zodiac is a text adventure in which you have to explore the 12 houses of the Zodiac, along with a maze, as well as killing the Ice Giant and fire-eating dragon.

In addition, you have to pick up useful objects along the way, and use and then drop them as you make progress.

The usual NESW and up and down commands are available, but in addition, to make Zodiac an absorbing, but frustrating adventure, there are a number of key words that you must discover for yourself.

One of the most difficult is how to get past the bull in the House of Taurus — a problem which I wrestled with for a long time, along with a friend who has the same program.

We eventually solved that one, but so far we have not been able to overcome the obstacle of the Ice Giant.

It looks as if it will take many more hours of keyboard work before Zodiac is eventually solved, but if you cannot make progress, A & F will provide clues.

S.I.

instructions	50%
playability	75%
graphics	n/a
value for money	70%

★★★★

Down in the garden there's a battle among the lettuces

Your vegetable patch may seem peaceful, but your lettuces are under attack by a slug and a snail. Choose your side in this two-player game for the TI-99/4A by Jackie Willis

How it works

100-290 set colours, define characters
300-340 draw fence
350-440 set score to 0; produces random positions for lettuces, checking position is not already occupied. Number of lettuces can be changed in line 380
450-580 decide random start position for snail and slug, making sure these are not already occupied
590-620 main loop directing program to 'move snail' and 'move slug' subroutines
780-810 get character from screen to determine whether planned move will cross trail, hit fence or eat lettuce
820-860 draw new position of snail then return to main loop
870-1020 calculate scores depending on move made by snail
1030-1170 move slug routine
1180-1210 get character from screen to determine whether planned move will cross a trail, hit fence or eat a lettuce
1220-1260 draw new position of slug; return to main loop
1270-1420 calculate scores depending on move made by slug
1430-1600 subroutine to check whether slug or snail has scored 30 points or more. If winner is decided game ends with message and a chance to try again
1610-1670 subroutine to print statements and scores

In this game for two players you are the slug and your opponent is the snail. The setting is a vegetable patch where you must attempt to eat as many lettuces as you can to gain points.

The problem is that you both leave a sticky trail which neither of you can cross — if you do your opponent will score a point.

At the start of the game the vegetable patch appears, surrounded by its fence. Thirty lettuces sprout up at random. The position of the slug and snail are also randomly assigned.

As these creatures move about a blue trail appears for the slug and a red trail for the snail. When a lettuce is eaten — by guiding your slug/snail onto it — you score two points and your score appears on the allotment fence.

If you cross your own or your opponent's trail, bump into the fence or your opponent, then one point is added to your opponent's score. The game ends with victory for the first player to win 30 points.

```
100 REM  SLUGS AND SNAILS
110 REM  BY J.V. WILLIS
120 REM  define characters
130 CALL CLEAR
140 FOR I=1 TO 11
150 CALL COLOR(I,16,2)
160 NEXT I
170 CALL COLOR(12,2,2)
180 CALL COLOR(13,3,2)
190 CALL COLOR(14,9,2)
200 CALL COLOR(15,6,2)
210 CALL COLOR(16,11,2)
220 CALL SCREEN(2)
230 CALL CHAR(128,"185A7E7E7E7E3C18")
240 CALL CHAR(152,"9966669999666699")
250 CALL CHAR(136,"00000C0C5E9EFEFF")
260 CALL CHAR(137,"5500DB2424DB0055")
270 CALL CHAR(144,"4224183C3C3C3C18")
280 CALL CHAR(145,"A500DB0000DB00A5")
290 CALL CLEAR
300 REM  SET UP SCREEN
310 CALL HCHAR(1,1,152,32)
320 CALL VCHAR(2,1,152,23)
330 CALL VCHAR(1,32,152,23)
340 CALL HCHAR(24,1,152,32)
350 SCORE1=0
360 SCORE2=0
370 RANDOMIZE
380 FOR L=1 TO 30
390 N1=INT(RND*29)+2
400 N2=INT(RND*21)+2
410 CALL GCHAR(N2,N1,GET)
420 IF GET=128 THEN 390
430 CALL HCHAR(N2,N1,128)
440 NEXT L
450 X=INT(RND*29)+2
460 Y=INT(RND*21)+2
470 CALL GCHAR(Y,X,GET)
480 IF GET=128 THEN 450
490 R=X
500 S=Y
510 CALL HCHAR(Y,X,136)
520 X1=INT(RND*29)+2
530 Y1=INT(RND*21)+2
540 CALL GCHAR(Y1,X1,GET)
550 IF (GET=128)+(GET=136)THEN 520
560 R1=X1
570 S1=Y1
580 CALL HCHAR(Y1,X1,144)
```

Hints on conversion

CALL CLEAR clears screen
CALL SCREEN(B) sets screen colour according to value of B
CALL COLOR(A,B,C) determines colours of characters, where A is the character set, B becomes the colours of those characters and C the background colour
CALL CHAR(D,"E") command used for re-defining characters, where D is the ASCII character code and E the hexadecimal code
CALL HCHAR/VCHAR(Y,X,Z,N) will produce character Z on the screen starting at row Y in column X and repeating N times horizontally if CALLing HCHAR, or vertically if CALLing VCHAR. The Texas graphics screen is 24 rows by 32 columns, starting at 1,1 in the top left corner
CALL KEY(O,K,S) scans the keyboard to find whether a key K has been pressed
CALL GCHAR(Y,X,Z) gets character Z from screen in row Y and column X
CALL SOUND(DUR,FR,V) produces a sound of duration DUR milliseconds, at a frequency of FR (or a noise if −FR) of volume V

Movements of the slug and snail are controlled from the keyboard — with the alpha lock on — as follows:

Slug:
S left
D right
E up
X down

Snail:
K left
L right
O up
comma down

If your opponent is holding down a key when it's your turn, the game comes to a temporary halt until the key is released. This is so that no player takes more turns that he or she is entitled to!

Variables

SCORE1 snail's score
SCORE2 slug's score
N1,N2 random co-ordinates of lettuces
X,Y co-ordinates of snail
X1,Y1 co-ordinates of slug
R,S co-ordinates of snail's trail
R1,S1 co-ordinates of slug's trail
ROW,COL co-ordinates for printing scores and messages

```
590 REM  MAIN LOOP
600 GOSUB 640
610 GOSUB 1040
620 GOTO 600
630 REM  MOVE SNAIL
640 CALL KEY(0,K,STATUS)
650 IF K=79 THEN 700
660 IF K=44 THEN 720
670 IF K=76 THEN 740
680 IF K=75 THEN 760
690 GOTO 640
700 Y=Y-1
710 GOTO 770
720 Y=Y+1
730 GOTO 770
740 X=X+1
750 GOTO 770
760 X=X-1
770 IF (Y<1)+(Y>24)+(X<1)+(X>32)THEN 860
780 CALL GCHAR(Y,X,GET)
790 IF GET=32 THEN 820
800 IF GET=128 THEN 870
810 GOTO 950
820 CALL HCHAR(Y,X,136)
830 CALL HCHAR(S,R,137)
840 S=Y
850 R=X
860 RETURN
870 SCORE1=SCORE1+2
880 CALL SOUND(50,-6,2)
890 N$="SNAIL:"&STR$(SCORE1)
900 ROW=24
910 COL=1
920 GOSUB 1630
930 GOSUB 1440
940 GOTO 820
950 SCORE2=SCORE2+1
960 N$="SLUG:"&STR$(SCORE2)
970 CALL SOUND(100,-2,2)
980 ROW=1
990 COL=20
1000 GOSUB 1630
1010 GOSUB 1440
1020 GOTO 820
1030 REM  MOVE SLUG
1040 CALL KEY(0,K,STATUS)
1050 IF K=69 THEN 1100
1060 IF K=88 THEN 1120
1070 IF K=68 THEN 1140
1080 IF K=83 THEN 1160
1090 GOTO 1040
1100 Y1=Y1-1
1110 GOTO 1170
1120 Y1=Y1+1
1130 GOTO 1170
1140 X1=X1+1
1150 GOTO 1170
1160 X1=X1-1
1170 IF (Y1<1)+(Y1>24)+(X1<1)+(X1>32)
     THEN 1260
1180 CALL GCHAR(Y1,X1,GET)
1190 IF GET=32 THEN 1220
1200 IF GET=128 THEN 1270
1210 GOTO 1350
1220 CALL HCHAR(Y1,X1,144)
1230 CALL HCHAR(S1,R1,145)
1240 S1=Y1
1250 R1=X1
1260 RETURN
1270 SCORE2=SCORE2+2
1280 CALL SOUND(50,-6,2)
1290 N$="SLUG:"&STR$(SCORE2)
1300 ROW=1
1310 COL=20
1320 GOSUB 1630
1330 GOSUB 1440
1340 GOTO 1220
1350 SCORE1=SCORE1+1
1360 CALL SOUND(100,-2,2)
1370 N$="SNAIL:"&STR$(SCORE1)
1380 ROW=24
1390 COL=1
1400 GOSUB 1630
1410 GOSUB 1440
1420 GOTO 1220
1430 REM  CHECK FOR WINNER
1440 IF SCORE1>29 THEN 1470
1450 IF SCORE2>29 THEN 1510
1460 GOTO 1610
1470 CALL HCHAR(Y,X,136)
1480 CALL HCHAR(S,R,137)
1490 N$=" WELL DONE! THE SNAIL HAS WON."
1500 GOTO 1540
1510 CALL HCHAR(Y1,X1,144)
1520 CALL HCHAR(S1,R1,145)
1530 N$=" WELL DONE! THE SLUG HAS WON."
1540 ROW=12
1550 COL=2
1560 GOSUB 1630
1570 PRINT ::
1580 INPUT "PLAY AGAIN?(Y/N) ":A$
1590 IF A$="Y" THEN 290
1600 END
1610 RETURN
1620 REM  PRINTING SCORES AND MESSAGES
1630 FOR I=1 TO LEN(N$)
1640 C=ASC(SEG$(N$,I,1))
1650 CALL HCHAR(ROW,(COL-1)+I,C)
1660 NEXT I
1670 RETURN
```


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Computing today

Due to promotion, **Computing Today** is seeking an Editorial Assistant. The person we are looking for is an accurate worker with a sense of humour who will be able to maintain the high standards of the magazine while keeping to deadlines. Knowledge of program assessment, development and debugging is required, both in BASIC and machine code/assembly language (preferably for the Z80 and/or 6502). Applicants should be able to express themselves in English but no journalistic experience is necessary: training in technical journalism will be provided.

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Top Ten programs for the VIC-20

1	Arcadia	Imagine (3)
2	Wacky Waiters	Imagine (2)
3	Panic	Bug Byte (6)
4	Asteroids	Bug Byte (5)
5	Cosmiads	Bug Byte (4)
6	Catcha Snatcha	Imagine (1)
7	Laser Zone	Llamasoft (–)
8	Gridrunner	Llamasoft (–)
9	Alien Blitz	Audiogenic (9)
10	Matrix	Llamasoft (–)

Compiled by Boots. Figures in brackets are last week's positions

Top Ten programs for the Dragon-32

1	Mountain	Dragon (1)
2	Basic Tutorial	Ampalsoft (2)
3	Personal Finance	Dragon (3)
4	Special Collection 1	Dragon (4)
5	The King	Microdeal (5)
6	Space War	Microdeal (8)
7	Android Attack	Microdeal (6)
8	Nightflight	Salamander (9)
9	Planet Invasion	Microdeal (7)
10	Katerpillar Attack	Microdeal (–)

Compiled by Boots. Figures in brackets are last week's positions

Top Ten programs for the Spectrum

1	Jet Pac	Ultimate (1)
2	Scrabble	Psion (–)
3	Transylvanian Tower	Richard Shepherd (2)
4	Flight Simulation	Psion (3)
5	Horace and the Spiders	Psion/M. House (5)
6	Ah Diddums	Imagine (–)
7	Penetrator	Melbourne House (7)
8	Pssst	Ultimate (8)
9	Mad Martha	Microgen (10)
10	Horace Goes Skiing	Psion/M. House (4)

Compiled by W. H. Smith. Figures in brackets are last week's positions

Top Ten programs for the ZX81

1	Football Manager	Addictive (2)
2	Defender	Quicksilva (3)
3	Flight Simulation	Sinclair (4)
4	Scramble	Quicksilva (1)
5	1K Games	Sinclair (6)
6	1K Chess	Sinclair (5)
7	Fantasy Games	Sinclair (7)
8	Space Raiders	Sinclair (–)
9	Planet of Death	Sinclair (–)
10	Espionage Island	Sinclair (9)

Compiled by Boots. Figures in brackets are last week's positions

Now software is in chains

I don't know how it is where you are, but over here many conventional book stores have either begun to sell software for popular personal and home computers or are seriously studying the idea. For example, one of the largest chain store booksellers here — B. Dalton with over 700 stores — has been marketing software in roughly 50 test outlets.

Latest product to be marketed by them is Wordvision, a word-processor by Bruce and James that runs on the Commodore 64. I believe that this is a trend that will continue to expand as more and more people become exposed to the variety of low cost versatile home computers presently available.

★★★★

Even the movie companies are interested in the home computing market. Here's one example. A new bi-monthly magazine called Microkids: The Magazine For Kids Who Love Computers and is targeted for children between the ages of 10 and 16, has just been brought out as the first product of the newly established Warner Software division of Warner Publishing, which of course is a subsidiary of Warner Communications Inc. (formerly Warner Brothers film studios).

The new software division will be publishing and distributing (you guessed it) home management, education, productivity, and entertainment software. Just like everyone else.

★★★★

BSR, well known maker of stereo and home security-related equipment, has decided to enter the home computer market. Its first product is called the X-10 MicRobot, which is fundamentally a hardware-software package which enables a microcomputer to control every electrical item in a home from one central point.

BSR will be introducing this product under its own name shortly, but the initial offering comes in the form of a privately labelled device made for the Mattel Aquarius home computer, and is called the Aquarius Command Console.

I suppose that BSR felt they were really losing a market by letting third parties make adapters that allowed their stand-alone electrical outlet controllers to be controlled by personal and home computers.

When the firm debuts its own products, these will be expected to run on all major brand personal and home machines. Expected list price: about $75. This for the console alone.

In addition to the console, special adapters, located at wall sockets or light switches to be controlled, are also required. These cost approximately $16 each. The controller sends signals over the electric power lines to turn the desired adapters on and off either manually or by computer control. The manual/remote/timer stand-alone systems have been available for some time over here and work quite well indeed.

★★★★

Interested in knowing how the home market for educational software is doing over here? Strategic Incorporated, of San Jose, California, was interested too. In the results of a recent survey, they found that by 1990 consumers will be buying more educational software than will institutions, and that the combined sales in both marketplaces will reach approximately $1.59 billion (thousand million) by then. Developed any neat educational programs lately? If so, the time is now to perfect it and get it on the market.

That's it for this week

Bud Izen **Fairfield, California**

Send your letter to Letters, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE. Don't forget to name your computer — the best letter could win £5-worth of software. Queries cannot be answered on this page

Signs of the wrong Zodiac

You reviewed my program Zodiac the other week. Unfortunately, whoever reviewed it has got confused with the other Zodiac that is sold by A&F Software.

The Tansoft Zodiac is not the price shown, does not begin in an icy waste — and there are numerous sound effects which were not reported. At the same time some of the comments do fit my Zodiac and not the A&F program!

I do not suppose it really matters either way, since the overall rating was average. But it would be nice to see a proper review of both Zodiacs.

Congrats on the best weekly mag; well worth the strange cover price of seven shillings and sevenpence!

Geoff Phillips, London NW9

Desperate? look Sharp

Regarding "Over-Desperate"'s letter in HCW 18, I can think of no electronic, electrical or indeed mechanical gadget which takes kindly to tea or jelly inserted in its crevices.

I can think of only one humane way of dealing with brothers who chew tapes — keep them out of his way (they aren't very nutritional anyway).

For the rest, I have been using a micro for over a year, for an average of three hours a day, without the slightest problem.

It has an integral screen (no connection problems with a TV which may not be compatible anyway), and its own integral cassette recorder (no level adjustment problems and, again, no trailing leads.)

It's called a Sharp MZ80B, and is fairly expensive, but there is a 48K down-market version, the MZ80K, which I have reason to believe is equally reliable. The school one of my children goes to has had several Sharp MZ80Ks for over two years and has never had a breakdown.

If "Over Desperate" has had no luck with these machines, I suggest he takes up another hobby.

I should add that I have no connection with Sharp — indeed, I have a fairly low opinion of their radios and TVs. But credit where it's due.

R. H. Hill, Woodford Green, Essex

Play fair with Pharoah's Tomb

With reference to your review of Pharoah's Tomb in HCW 18, I would like to protest. It is not a game, but an adventure.

Who said the objects and treasures must be in different locations each time it is played? I don't seem to remember that was the case in The Hobbit, and all agree that is an excellent adventure.

I have always looked on adventures as a "play it once and discard it" type of product. After all, you don't complete them in one sitting. It takes time to solve the problems, and it is they that are the challenge in an adventure, not collecting treasures.

I assure you, I got exactly what I expected out of Pharoah's Tomb, and at the price was more than satisfied. I didn't find the problems "pretty easy to solve" — did your reviewer actually complete the adventure?

And in view of all the complaints about mail order companies, I would like to offer a bouquet to Phipps Associates. I bought a black and white copy of their Knight's Quest — another excellent adventure — expecting it to be the coloured version. I wrote to Phipps and received a coloured replacement by return of post.

When I was stuck in Pharaoh's Tomb and phoned for assistance, I got their answering phone service, so left my name and phone number, saying merely that I was stuck. I got a map and clue sheet through my door the next day — someone had gone to the trouble of looking up my address in the files. So software companies are not all the uncaring villains that letter pages would have you believe.

Jacquie Rycroft, Hollowell, Northants

Our reviewer's comment: "If Jacquie Rycroft is happy to play an adventure once and discard it, that's fair enough — personally, I find money more scarce than that.

"Having played several adventure games, I like the sort of adventure that lasts and, after all, the whole point of an adventure is that you don't know what you're going into.

"It's true that the objects stay in the same place each time you play The Hobbit, but that's because it follows Tolkien's book to a close extent. Instead, interest is generated by the fact that Thorin and Gandalf wander about unpredictably.

"I found the problems — both the syntax and the mazes — far more difficult in The Hobbit, which I haven't managed to complete yet. Yes, I did complete Pharoah's Tomb.

"But as I said in my review, Pharoah's Tomb is very reasonably priced.

Pull your socks up

Your letters column contains many relevant points and opinions, which I read most carefully. I also like One Man's View. I am dismayed at the way in which software companies have abandoned the ZX81, which I own.

This computer was the cause behind many software houses appearing in the first place. Yet no sooner does the Spectrum arrive then most companies discontinue software for the 81. I am in favour of progress, but these software houses make me sick.

Luckily, a few companies such as Artic are developing and selling new products. Other companies are just relying on old stock. But original ideas are needed now, not the 30 or so versions of Space Invaders that were first marketed.

Why won't Virgin Games, for example, market software for the ZX81? There are still hundreds of thousands of owners, and a new game might reach the majority of them.

I hope that quite a few of the High Street stores are sending their staff on the computer literacy course, as reported in HCW 12. One local store — part of a chain — has one-track employees.

I went there to enquire about the Jupiter Ace, and was confronted by an assistant who asked me whether or not I wanted to play an arcade game, rather than if I needed help. When I said no, he seemed shocked, and I was so annoyed I left the shop without any information.

Why do people think that we teenagers are all button-pushing crazy?

R. Gill, Alne, York

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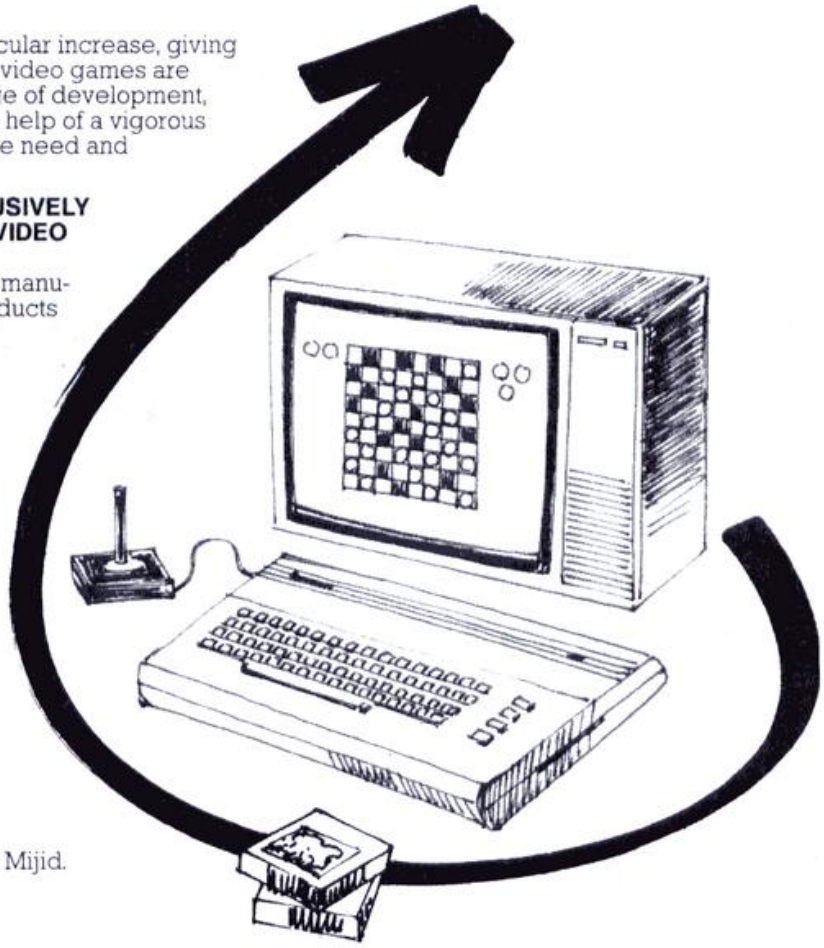

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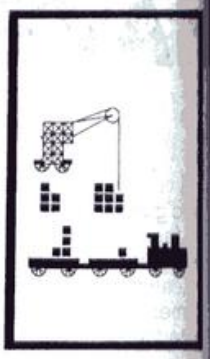

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Delve into hex with your Oric

See what Oric BASIC does to your program, says Paul Wilson

Hex-Print was developed one evening to help me find out what Oric BASIC did with and to a program.

The program is extremely simple in layout and action and, although written on an Oric, is readily adaptable for any machine having BASIC. The only idiosynchrasy to be found relates to Oric's handling of IF...THEN...ELSE.

Basically (sorry about that) it doesn't handle ELSE at all. OK, purists will point out that it does, sort of, but as far as I'm concerned it might as well not.

To use the program, it has to be given a start and an end address. Since I feel happier with hexadecimal than base 10 for addresses, either of these can be given as hex or decimal — just remember to prefix a hex number with the hash symbol.

The subroutines used are:

1000 instructions on using the program
2000 convert a decimal number to hex
3000 print the page heading
4000 validate the input addresses

When it is happy with the addresses you have given, the program will loop round expanding each byte to two hexadecimal characters, printing eight bytes per line.

Twenty-two lines are printed on a full screen, then the program waits for you to type a character before continuing. At this point, if you type Q the program ends there and then, otherwise it loops round to produce another page — or as much as you asked for.

A full screen will consist of 176 bytes, a moderately round number in hex (#BO). The calls to machine code routines are to the monitor to suppress the keyboard (CALL #E6CA), and then to recommence scanning it again (CALL #E804).

A couple of suggestions for use:

1 Start = #500
End = #580

This will show you how BASIC lays out the source of your program — the program actually occupies up to just after #B90 if you want to see it all.

2 Start = #B90
End = #C50

This will show the variable table at the end of the program.

As an experiment, add the line:

91 AA% = 256

then run the program using the parameters in 2 above. Do you see how an integer variable is held?

One last point: the program will quite happily look at the screen RAM in HIRES mode, but the display function will be drastically affected. The program can be modified to take account of this, but it would be quite a drastic change.

```
10 REM <<<<< HEX PRINT >>>>>
20 REM WOOKIE,  6 MAY 83
30 REM
40 REM  WILL LIST THE CONTENTS OF MEMORY
50 REM  BETWEEN TWO ADDRESSES, IN HEX
60 REM
90 CH$="0123456789ABCDEF"
100 CLS:PRINT"          HEX MEMORY PRINT"
105 GOSUB 1000
110 INPUT "START ADDRESS PLEASE: ";I$
120 GOSUB 4000:IF ER=1 THEN 110
130 ST=I9
140 INPUT "AND THE END ADDRESS: ";I$
150 GOSUB 4000:IF ER=1 THEN 140
160 EN=I9+1     'LOOP WONT INCLUDE LAST A
DDRS
190 CALL #E6CA     'KILL KEYBOARD
200 ADRS=ST:P=1:GOSUB 2000
210 CH=0: LI=0
300 REPEAT
310  IF CH<>0 THEN 350
320  : I9=ADRS: GOSUB 3000
330  : L$="#"+RIGHT$("000"+Z$,4)+"  "
350  : I9=PEEK(ADRS): GOSUB 3000
360  : L$=L$+RIGHT$("0"+Z$,2)+" ":CH=CH+1
370  : IF CH<8 THEN 400
380  : PRINTL$: CH=0: LI=LI+1
400  : IF LI<22 THEN 500
405  : CALL #E804
410  : GET A2$: IF A2$="Q" THEN PULL: END
415  : CALL #E6CA
420  : LI=0: GOSUB 2000
500  : ADRS=ADRS+1
510 UNTIL ADRS=EN
520 IF CH<>0 THEN PRINTL$
530 CALL #E804
540 END
999 REM ..... DISPLAY INSTRUCTIONS
1000 PRINT:PRINT"  You will be asked for
 the start"
1010 PRINT" and end addresses of the are
a to"
1020 PRINT" be displayed.  These address
es"
1030 PRINT" can be in decimal or hexadec
imal."
1035 PRINT
1040 PRINT"  If hex is used,  prefix the
number"
1050 PRINT" by '#'."
1060 PRINT:PRINT"  At the end of each pa
ge the program"
1070 PRINT" will wait.  To quit, type Q,
 any"
1080 PRINT" other character will continu
e.":PRINT:PRINT
1090 RETURN
1999 REM ..... PAGE HEADING
2000 CLS:PRINT"      HEX MEMORY PRINT, PA
GE ";P
2010 PRINT:P=P+1
2020 RETURN
2999 REM ..... NUMBER IN I9 TO HEX
3000 Z$=HEX$(I9):Z$=RIGHT$(Z$,LEN(Z$)-1)
3010 IF Z$="" THEN Z$="0"
3020 RETURN
3999 REM ..... VALIDATE THE INPUT ADDRES
S
4000 ER=0:H=0:I9=0:MP=10
```

```
4010 IF LEFT$(I$,1)="#" THEN H=1:MP=16
4020 FOR I=H+1 TO LEN(I$)
4030 :C$=MID$(I$,I,1)
4040 :FOR J=0 TO 15
4050 : IF MID$(CH$,J+1,1)=C$ THEN 4100
4060 :NEXT J
4070 :ER=1: GOTO 4310
```

```
4100 :IF H=0 AND J>9 THEN ER=1:GOTO 4310
4110 :I9=I9*MP+J
4150 NEXT I
4300 RETURN
4310 PRINT" SORRY, I DIDN'T UNDERSTAND T
HAT"
4320 RETURN
```

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Programs to put your mind to

If you're after a spot of mental exercise, this selection of software could be right up your street

Cyrus-IS-Chess Spectrum £9.95

By Intelligent Software, from Sinclair, Freepost, Camberley, Surrey GU15 3BR

Whether you're novice or a chess expert, you'll enjoy this excellent tape. Side A is for the 16K and Side B 48K, with few more features. There are eight playing levels or strengths plus three problem levels.

Very simple to use cursor operation takes care of moving pieces, and even give you a chance to change your mind or take back a move. When making an incorrect move, an illegal sign will be displayed and also a buzz.

Along with the tape you will receive a very comprehensive user manual.

When learning you can opt for a demonstration game, where the Spectrum makes all moves. On the 48K version, extra features include altering the colours, getting a printout of the game in progress or completed, and saving the game on tape.

The problem levels allow you to instruct the computer to look for a mate in one, two or three moves, according to the level set, or find by analysis that this is impossible.

C.McL

instructions	100%
playability	80%
graphics	100%
value for money	95%

★ ★ ★ ★ ★

Ringo Spectrum £5

Elephant Software, 41 Haymill Road, Burnham, Berkshire SL1 6NE

No, this has nothing to do with the Beatles, although the game can be just as frustrating as some of their songs. If you think that the world holds no challenge for you since you solved Rubik's Cube, may I suggest Ringo.

Two intersecting rings are presented on the screen. Within these rings are a number of coloured beads. The idea is to sort these beads into colour groups by rotating the rings. Not as easy as it sounds.

This is an excellent and novel idea, but the limitations of the program spoil it somewhat. When a ring is rotated there is rather a long pause while the computer resorts the beads, and this detracts from the playability of the game.

However, the game is sufficiently well devised to remain addictive even if it is slow. I have still to solve the puzzle, and unfortunatley the Spectrum can't help me due to the lack of the 'solve' facility you might expect to find in a game of this type.

Nevertheless, I'll keep trying...

T.B.

instructions	50%
playability	65%
graphics	50%
value for money	60%

★ ★ ★

Chess BBC B £7.95

Program Power, 8/8A Regent Street, Chapel Allerton, Leeds LS7 4PE

I have never been nor will I ever become more than a very mediochre chess player. Apart from the fact that I was soundly beaten on every game, the program is very useable and well presented.

The graphic display of the board is good, although the very bright red and green become a little wearing after a time. This is agraveted by screen judder if you forget to turn off the interlace before use.

Moves are entered straightforwardly using the now standard algebraic notation. Illegal moves are trapped, and more advanced moves, castling and en passent, are very easily carried out. Play is on a choice of six levels — I dread to think what level 6 is like.

As well as the standard game there are options for blitz chess (10 seconds! they must be joking), analysis and replay. The latter two will appeal to the more expert amongst us who like to go over old games.

Instructions are provided on the cassette insert and are very brief but none the less adequate. For those who like to ponder there is a facility to save part played games to tape.

J.W.

instructions	80%
playability	80%
graphics	80%
value for money	80%

★ ★ ★ ★

Quiz Pack Dragon-32 £3.95

Shards Software, 10 Park Vale Court, Vine Way, Brentwood, Essex

Good value, this one. Two programs for the price of one. The first is Word; Here the computer selects a random word from its memory and displays the appropriate clue. You are given a time limit to respond with a letter, and if the answer is correct, the letter is placed on the screen. Unlike Hangman, if there are two letters the same only one is printed.

More points are scored the faster you complete the word.

One possible area of confusion is that the inlay card suggests the software is suitable for all ages. This is misleading, as some of the words are quite complex.

In Cross, the second program, the computer selects 10 words and sets them out in crossword fashion, The display is clear and uncluttered, and clues are printed when the cursor is set at the head of a word.

My only criticisms are that the cursor routine is slow to use, and the provision to see the answers is obtained by pressing the space bar, which can be done by accident while playing.

You can enter words of your own choice, and clear instructions are provided to do this.

A.G.

instructions	80%
playability	80%
graphics	60%
value for money	100%

★ ★ ★ ★ ★

Concentrate Dragon 32 £5.95

Mk 1, 30 Painswich Road, Birmingham B28 0HF

This is a game for two people matching pairs of cards from 28 dealt by the computer. There are 14 different designs randomly placed.

The game is extremely well set out and organised. It did keep me interested for some time but seemed to be getting easier. This must be, I flatter myself, a credit to the program, which has heightened my level of concentration and improved my ability to memorize.

A good educational aid I would have thought, with its interesting patterns steering clear of the standard pack and its gambling connection!

Quick to respond, tast paced and good fun.

M.P.

instructions	95%
playability	90%
graphics	80%
value for money	75%

★ ★ ★ ★ ★

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The trophy's yours if you win at Bagatelle

Here's the computer version of that old favourite, Bagatelle. Written for the Spectrum by Thomas Goodchild, it gives you a choice of three speeds and bonus points. There's even a trophy for a high score

My game is based on Bagatelle, works on both models of the Spectrum and runs in a choice of three modes: fast, rapid and slow.

In the slow mode you can gain bonus points, but be careful not to stray off the right track and into the minefield.

How it works

10-115 initialisation, call sub-routine to set up graphics, draw board
120-400 move ball routine
1000-1602 score routine, option to replay
3020-3060 win routine, display trophy
4020-4060 move routines
4300-4600 instructions, select speed, display
6000-6050 UDG DATA and loader

For all modes you have 10 goes, with an extra go each time you hit the 100. The object of the game is to score 1,000 points. And then your reward, a trophy, appears on the screen.

The highest score so far is retained and displayed continuously.

I have used the full 24 lines of the Spectrum's screen and all the 21 user-defined graphics characters.

There is no machine code as such. The data for the 21 UDG characters — lines 6010-6017 — is entered in hexadecimal (base 16) to save a lot of programming time and avoid the need for all the commas. Each line is labelled with the characters it contains.

Lines 6018-6040 contain the hex loader, which is a modified ZX81 routine. If you change the program and use fewer UDGs, don't forget to change the figure 21 in line 6018 to the new number of characters.

To see the positions of hazards and bonus points change the INK colour in lines 2015 and 2515.

In line 3040 the graphics characters, in order, are: B C D E F G H I (GRAPHICS 8) J K L M N O P Q R S T (GRAPHICS 3) U.

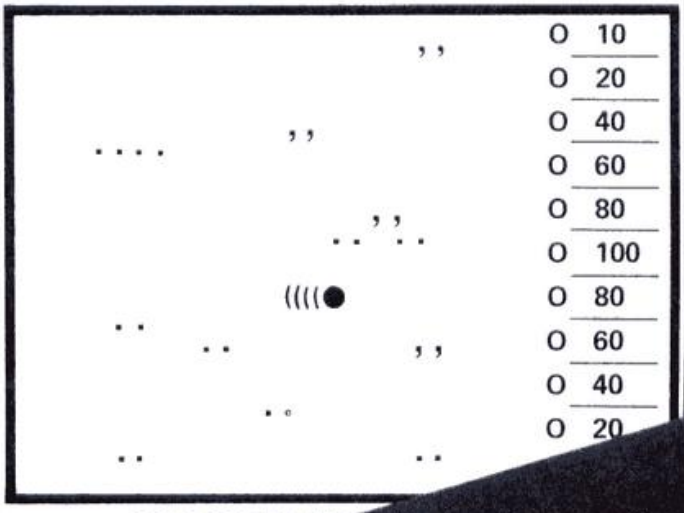
A is the ball.

If you want to see the trophy, use the direct instruction GOTO 3040.

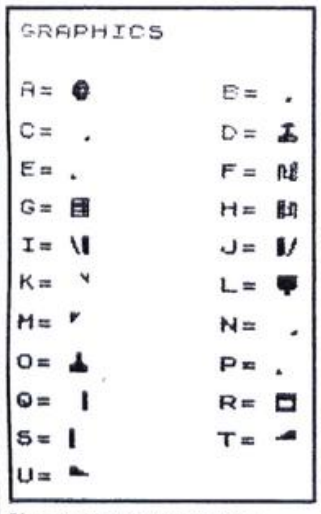
Variables

go counts tries (max 10)
score counts and records score
hi records and displays high score
b vertical co-ordinate of ball — moves down automatically during play
d horizontal co-ordinate of ball, fired by pressing M and continues to move swiftly and smoothly after release (when in mode F)
LINE calls sub-routine to set speed: F, R and S
a,b/aa,bb co-ordinates of random hazards/bonus points in SLOW game
d,e,x and **r** used to produce BEEPS and colour effects

Your reward if you reach 1,000 points

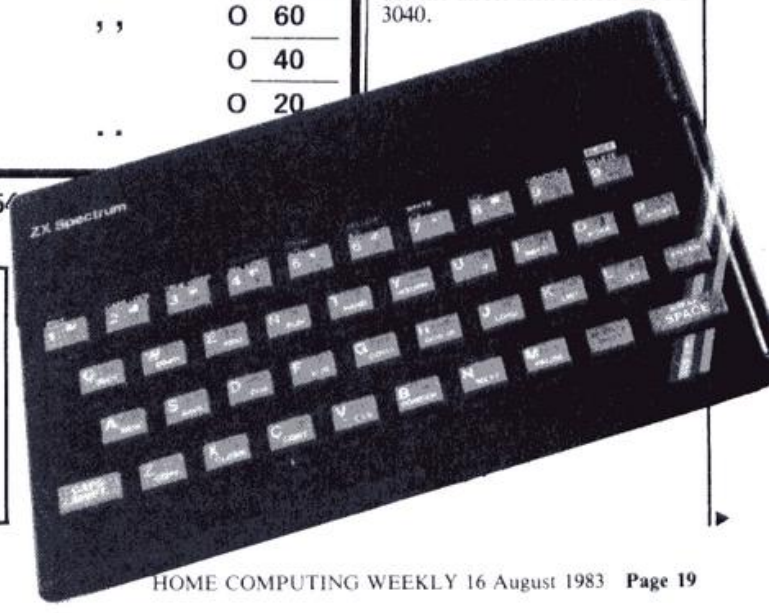


Bagetelle in action



Your guide to the graphics

```
  10 GO TO 25
  15 BORDER 4: PAPER 4: INK 9
  20 GO SUB 6000
  25 LET hi=0000: LET LINE=4000
  30 CLS : GO SUB 4300: BORDER 4
: PAPER 4: INK 9
  35 PRINT AT 2,11;"BAGATELLE";'
'': PRINT AT 8,3;"To start - P
RESS Any key";'';AT 10,3;"To Fir
e -          PRESS M ": PAUSE 0:
CLS
```



```
  40 INK 9
  45 LET SCORE=0000
  50 LET go=1: PRINT #1;AT 1,1;
INK 7; INVERSE 1;"GO:";go
  55 PRINT AT 0,1;"
"
  60 PRINT #0;AT 0,1;"
"
  65 LET x=255: FOR y=171 TO 11
STEP -16
  70 PLOT x,y: DRAW -45,0
  75 NEXT y
  80 FOR y=1 TO 21: PRINT AT y,3
1;"▌": NEXT y
  82 IF LINE=4000 THEN PRINT AT
0,31; PAPER 0; INK 7;"F"
  83 IF LINE=4100 THEN PRINT AT
0,31; PAPER 0; INK 7;"R"
  84 IF LINE=4200 THEN PRINT AT
0,31; PAPER 0; INK 7;"S"
  85 DIM z(1,11)
  86 DIM z(1,11)
  90 LET z(1,1)=10: LET z(1,2)=2
0: LET z(1,3)=40: LET z(1,4)=60:
 LET z(1,5)=80: LET z(1,6)=100:
LET z(1,7)=80: LET z(1,8)=60: LE
T z(1,9)=40: LET z(1,10)=20: LET
 z(1,11)=10
  95 LET q=1
 100 FOR u=1 TO 22 STEP 2
 105 PRINT AT u,28;z(1,q): LET q
=q+1: NEXT u
 110 GO SUB 2000
 115 GO SUB 2500
 120 FOR p=1 TO 22 STEP 2: PRINT
 AT p,25;"O": NEXT p
 125 LET d=0: FOR b=0 TO 21
 130 IF b<>0 AND b<=21 THEN PRIN
T AT b,0;"▐";AT b-1,0;" ": IF IN
KEY$<>"m" AND INKEY$<>"M" THEN N
EXT b
 135 IF b=0 THEN PRINT AT 21,0;"
"
 140 FOR d=0 TO 26: IF b=b AND d
=26 THEN PRINT AT b,25;"O": LET
b=0: LET d=0
 145 FOR f=1 TO 21 STEP 2
 150 IF b>0 THEN NEXT f
 155 IF b=0 AND d=0 THEN BEEP .3
40
 200 GO SUB LINE
 215 IF b=1 AND d=25 THEN LET SC
ORE=SCORE+ 10
 220 IF b=3 AND d=25 THEN LET SC
ORE=SCORE+ 20
 225 IF b=5 AND d=25 THEN LET SC
ORE=SCORE+ 40
 230 IF b=7 AND d=25 THEN LET SC
ORE=SCORE+60
 235 IF b=9 AND d=25 THEN LET SC
ORE=SCORE+80
 240 IF b=11 AND d=25 THEN LET S
CORE=SCORE+100: IF d=25 THEN BEE
P .2,30: BEEP .3,25: LET go=go-1
 245 IF b=13 AND d=25 THEN LET S
CORE=SCORE+80
 250 IF b=15 AND d=25 THEN LET S
CORE=SCORE+60
 255 IF b=17 AND d=25 THEN LET S
CORE=SCORE+40
 260 IF b=19 AND d=25 THEN LET S
CORE=SCORE+20
 265 IF b=21 AND d=25 THEN LET S
CORE=SCORE+10
 270 IF SCREEN$ (b,d+2)=CHR$ 44
THEN GO SUB 1600
 275 IF SCREEN$ (b,d+2)=CHR$ 46
THEN GO SUB 1500: LET b=0: LET d
=0
 280 IF d=25 AND (go<=9) THEN LE
T go=go+1: PRINT #1;AT 1,1; INK
7; INVERSE 1;"GO:";go
 285 IF score>hi THEN PRINT #1;A
T 1,11; INK 6; PAPER 9; INVERSE
1;"HI SCORE ";score: IF score<hi
 THEN LET hi=hi: PRINT #1;AT 1,1
9; INK 6; PAPER 9;"HI SCORE ";hi
 290 PRINT #1;AT 1,7; INK 7; INV
ERSE 1;"SCORE: ";score: IF score
<hi THEN PRINT #1;AT 1,19; INK 6
; PAPER 9; INVERSE 1;"HI-SCORE "
;hi
 295 IF score>=hi THEN LET hi=sc
ore: PRINT #1;AT 1,19; INK 6; PA
PER 9; INVERSE 1;"HI SCORE ";sco
re
 300 IF score>=1000 THEN GO SUB
3000
 305 IF go>=10 THEN GO TO 1000
 310 IF b<>0 AND d=0 THEN PRINT
AT b-1,d-1;" ": IF d=0 THEN PRIN
T AT b-1,d;" ": PRINT AT 21,0;"
": IF b>=21 AND go<=9 THEN LET g
o=go+1: PRINT #1; PAPER 7; INK 4
;AT 1,4;go
 315 IF b>=21 THEN LET b=0: IF d
=0 AND b<=21 THEN LET b=b+1
 320 LET m=0: IF d=25 AND b=2 OR
 b=4 OR b=6 OR b=8 OR b=10 OR b=
12 OR b=14 OR b=16 OR b=18 OR b=
20 THEN PRINT AT b,24;" "
 325 IF b<>0 AND INKEY$="m" OR I
NKEY$="M" OR d>0 AND d<=31 THEN
NEXT d
 330 NEXT b: GO TO 325
 335 PRINT #1;AT 1,1; INK 7; INV
ERSE 1;"GO:";go
 400 GO TO 270
1000 PAUSE 20: CLS : IF score>=h
i THEN PRINT AT 8,10; FLASH 1; B
RIGHT 1; INK 6;"WELL DONE!!!";AT
 10,8;"A NEW HI-SCORE!!!";AT 12,
14;hi: BEEP .01,0: FOR e=1 TO 21
 STEP 2: FOR e=21 TO -21 STEP -2
: BEEP .05,e: BEEP .02,8: NEXT e
: PAUSE 5
1002 IF score<hi THEN PRINT AT 6
,11;"SCORE: ";score;AT 8,8;"HI-S
CORE: ";hi
1005 PAUSE 100: CLS : FLASH 0: B
RIGHT 0: BORDER 4: PAPER 4: INK
9: PRINT AT b,24; FLASH 0;" ";AT
 6,4; PAPER 4; INK 9;"Another ga
me ? (Y)es (N)o " : PRINT #1;AT
 1,7; INK 7; INVERSE 1;"SCORE: "
;score;AT 1,19;"HI SCORE:";hi
1008 IF INKEY$="" THEN GO TO 100
8
1010 CLS : FLASH 0: INK 9: IF IN
KEY$="y" THEN GO TO 30
1015 IF INKEY$="n" THEN STOP
1020 RETURN
1502 PRINT AT b,d; PAPER 6; INK
2; FLASH 1; BRIGHT 1;"BOOM▒";AT
b,d-1;"▒";AT b,d-1; INK 4; PAPER
 4; FLASH 0: LET go=go+1
1505 FOR m=0 TO 6
1510 BEEP .01,-12: BEEP .04,-16:
 NEXT m
1520 RETURN
1600 LET  q=20*INT (RND*5)+20
1602 PRINT AT b,d+3; PAPER 4; BR
IGHT 1;q: LET score=score+q: BEE
P .2,40: BEEP .25,40: RETURN
2000 FOR c=1 TO 10
2005 LET a=2*INT (RND*10+1)
2010 LET b=2+INT (RND*18+1)
2015 PRINT AT a,b; INK 4;"..": N
EXT c
2020 RETURN
2500 FOR h=1 TO 6
2505 LET aa=1+2*INT (RND*9-1)
2510 LET bb=2+INT (RND*18+1)
2515 PRINT AT aa,bb; INK 4;",,":
 NEXT h
2520 RETURN
3020 CLS : BORDER 6: INK 2: BRIG
HT 1: FLASH 1: PRINT AT 4,6;"**C
ONGRATULATIONS**";AT 16,5;"**YOU
R SCORE OF ";score;" **";AT 19,3
;"** HAS WON YOU THE CUP!!**"
3040 FLASH 0: PRINT AT 8,14; INK
 6; PAPER 4;"  ";AT 9,14;"  ";
AT 10,14;"▒▒▒";AT 11,14;"▐▒▒▒▌";AT
 12,14;"  ";AT 13,14;"  ";AT 1
4,14; INK 1;"  ";AT 15,14;"▒▒▒▒"
: GO SUB 4500: FLASH 0: BRIGHT 0
: GO TO 1005
3060 RETURN
4020 IF b<>0 AND d<>0 AND d<=24
THEN PRINT AT b,d;" ● ";AT b,24;
" ";AT b,0;" ": LET d=d+1: GO TO
 4020
4060 RETURN
4120 IF b<>0 AND d<>0 AND d<=24
AND INKEY$="m" OR INKEY$="M" THE
N LET d=24: PRINT AT b,d;" ● ";A
T b,24;" ";AT b,0;"  ": GO TO 41
```

```
20
4160 RETURN
4220 IF b<>0 AND d<>0 AND d<=24
THEN PRINT AT b,d-1;"  ●  ";AT b,
24;" ";AT b,0;" ": LET d=d+1
4260 RETURN
4300 PRINT AT 2,11;"BAGATELLE"
4305 PRINT AT 6,2;"For a FAST ga
me   - PRESS F";AT 12,2;"For a S
LOWER game";AT 14,12 ;"(with Haz
ards and";;;" Bonus points)
  - PRESS S";AT 9,2;"For a RAPID
 game   - PRESS R"
4308 PRINT AT 19,2;"BEWARE of th
e Minefields "
4310 IF INKEY$="" THEN GO TO 431
0
4320 IF INKEY$="f" OR INKEY$="F"
 THEN LET LINE=4000: CLS
4330 IF INKEY$="s" OR INKEY$="S"
 THEN LET LINE=4200: CLS
4340 IF INKEY$="r" OR INKEY$="R"
 THEN LET LINE=4100: CLS
4360 CLS : RETURN
4500 FOR x=0 TO 2: LET d=.01: FO
R e=-5 TO 45: BEEP d,e+5*x: FOR
r=1 TO 6: BORDER 3: BORDER 2: BO
RDER 6: BORDER r: FLASH 1: NEXT
e: NEXT x: NEXT r
4600 RETURN
6000 CLEAR 32999
6005 PRINT AT 10,10;"Please wait
"
6010 DATA "A": LET a$="3C7EFFFFF
FFF7E3C"
6012 DATA "BCDE": LET a$=a$+"000
0000000018180000000000000010330C7
E18183CFFFFFF0000000000000080C0"
6014 DATA "FGH": LET A$=A$+"03E5
A7B7A5A7BD87FF85FFFF85FF85FFE0A7
E5EDA5E5BDE1"
6015 DATA "IJKLM": LET A$=A$+"87
87C74747272713E1E1E3E2E2E4E4C802
```

```
0E020100000000FFFFFFFFFF7E1818D0
A0C0808000000000"
6016 DATA "NOPQRS": LET A$=A$+"0
0000000000001031818181663CFFFFFF0
0000000000000800C0030303030303C3F
FFFFF818181FFFFC0C0C0C0C0C0C0C0C0"
6017 DATA "TU": LET A$=A$+"070F3
FFF00000000E0F0FCFF00000000"
6018 FOR l=0 TO 8*21-1
6020 LET a=PEEK 23675+256*PEEK 2
3676
6025 LET c=16*(CODE a$(1)-48)+CO
DE a$(2)-48-7*16*(CODE a$(1)>=65
)-7*(CODE a$(2)>=65)
6030 POKE a+l,c
6035 LET a$=a$(3 TO )
6040 NEXT l
6045 GO TO 25
6050 RETURN
```

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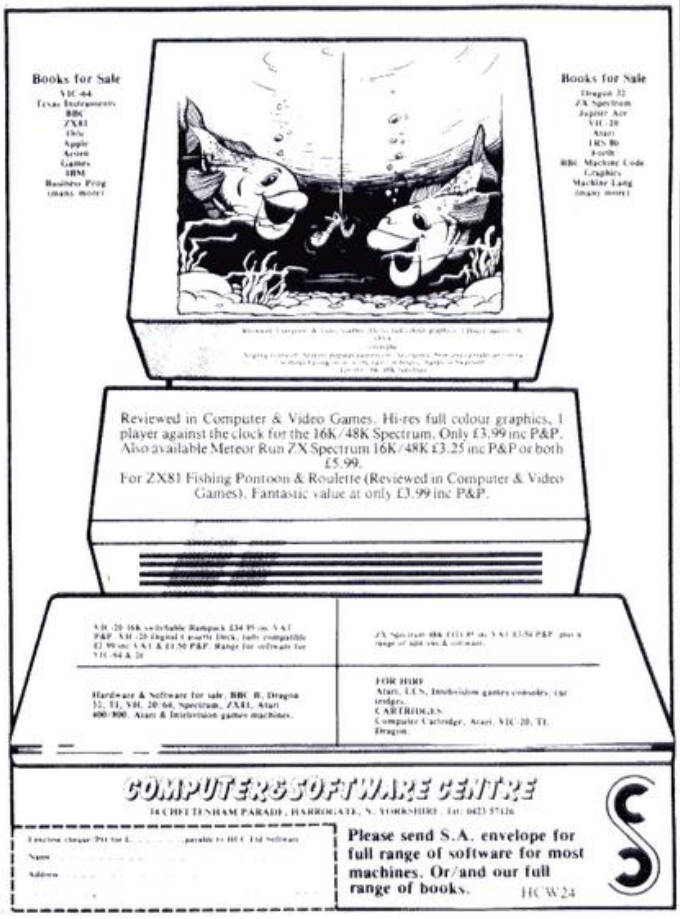

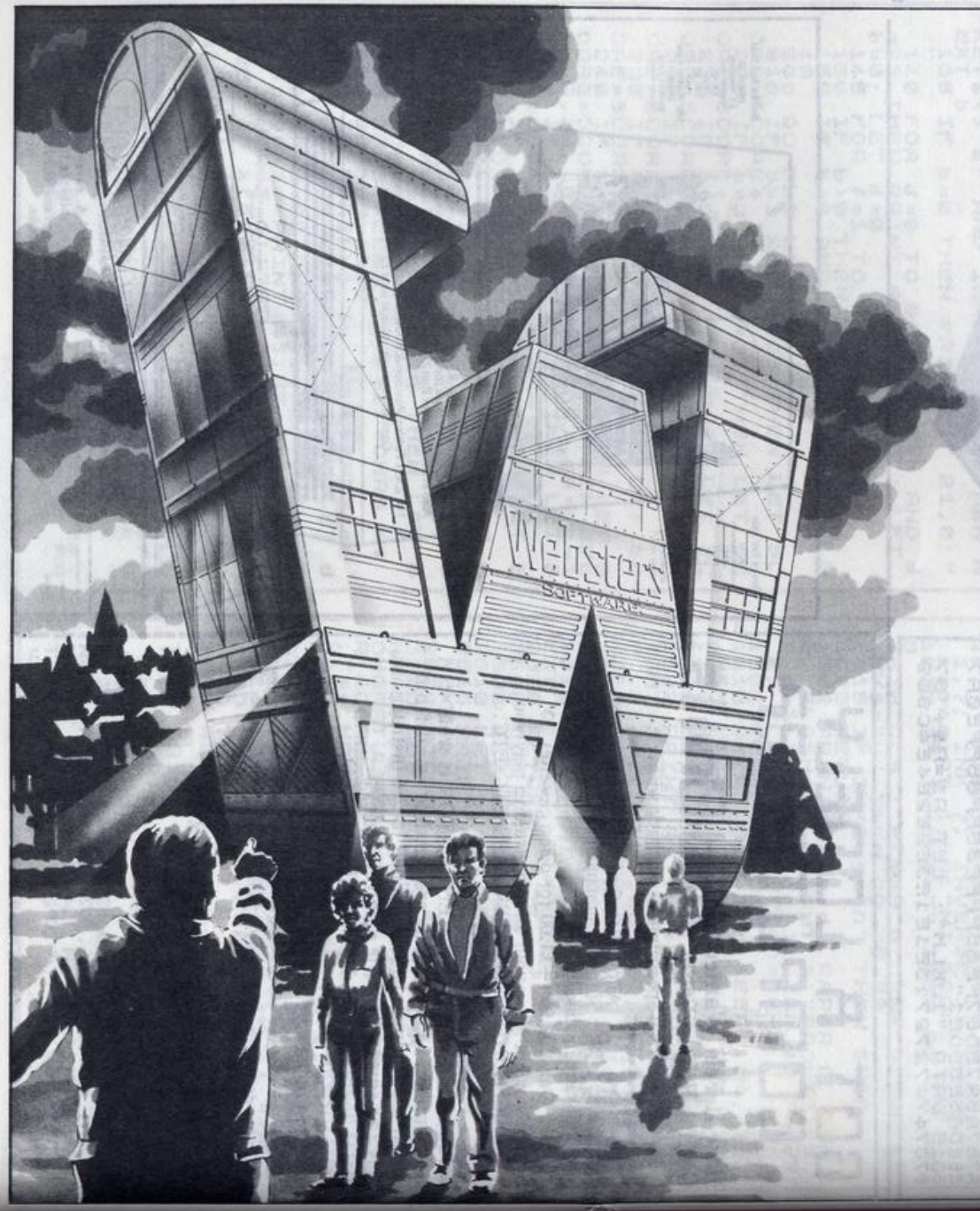

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SOFTWARE

Mythological meanderings

Emerging from the mists of time, our reviewers tell you whether these adventures are the stuff that software legends are made of

Lord of the Balrogs Commodore 64 £6-90

Supersoft, Winchester House, Canning Road, Wealdstone, Harrow, Middlesex

This is a skilfully humorous game which, in spite of its simple nature, I found both difficult and addictive.

The plot is not original. You lead a party of five assistants in a search through a multi-level cave system to locate five artifacts.

Your gang of helpers is a mixed bunch, including a warrior, an Amazon and a Hobbit. With them you have to fight sundry beasties which bar your way.

The game uses standard Commodore graphics characters (I believe it to be a converted PET program) but gives an effective plan of the caves. Until you locate a certain object, you can see only the room you are currently in.

The use of sound is good and not excessive. I was impressed by the humour of the textual portions including the rather nice fight routine.

The game uses single-key commands and it was occasionally difficult to remember which key performs what. On the plus side, the instructions were excellent.

At the price this game offers excellent value and will occupy you for many an hour. **A.W.**

instructions	100%
playability	80%
graphics	70%
value for money	90%

★ ★ ★ ★ ★

Franklin's Tomb Dragon 32 £9.95

Salamander, 17 Norfolk Road, Brighton, East Sussex BN1 4AA

An illustrated booklet helps to visualize the many scenarios of this textual adventure game. Look closely and you might find the essential clues for solving the many puzzles.

This is a very good quality text adventure that is an amusing romp from start to..... wherever you get stuck. Written in BASIC you can cheat a little, not a lot, and peek at some of the data statements — but of course you wouldn't do that!

A nice feature is the split screen, which shows the current situation, inventory and the responses to your statements. A save game facilty allows you to carry on from where you left off.

Essentially all these games must remain a mystery so I won't give anything away. However, it does offer a real incentive whereby if you solve the puzzle of the crypt you will gain clues to other adventures coming soon!

It's got plenty to keep you guessing, it's very entertaining and it's something that has absorbed a lot of my time. Salamandar has maintained its usual high quality but it is a bit pricey. Hold on to the carrots and good luck! **M.P.**

instructions	80%
playability	90%
graphics	n/a
value for money	80%

★ ★ ★ ★

The White Barrows 48K Spectrum £6.50

ASP Software, 145 Charing Cross Road, London WC2 0EE

This is a game of logic in which you travel through a maze of chambers beneath the White Barrows (barrows as in burial mound, not wheelbarrows, silly). Your aim: to trap an evil sorcerer and take from him a stolen chalice.

There are on-screen plans to guide you; you move about by entering the number of the appropriate room. As you progress, the usual hazards appear: monsters, dwarves or gnomes — who can be helpful if you bribe them from the 500 units of magic you start with.

Otherwise, you may have to transport, stun or burn unfriendly creatures — and it all uses up your supply of magic. To trap the sorcerer, you build walls to block up entrances and cut off his escape.

White Barrows is a difficult game. It's very easy to be killed before you can complete your quest.

But I don't really feel it's an adventure you will get attached to. Could do with more action and moving graphics.

C. Mc C.

instructions	60%
playability	60%
graphics	40%
value for money	75%

★ ★ ★ ★

Troll King TI-99/4A £8

Lantern Software, 4 Haffenden Road, Tenterden TN30 6QD

The evil Troll King is holding the Queen captive in his castle and it is your mission, as a brave and fearless hero, to rescue her. But you're not on your own. You carry out your task with the help of a small dwarf who occassionaly assists you at various stages of the adventure.

There are no graphics in this game, and colour and sound are hardly used at all.

Unfortunately, there are no instructions either, so you don't find out the object of the adventure until part way through when the dwarf tells you.

A lot of thought has obviously gone into this program, and it has been cleverly written. But as the computer often comes up with the phrase 'I don't understand' when you input instructions, it can become very frustrating, and is rather overpriced at £8. **J.J.**

instructions	0%
playability	60%
graphics	n/a
value for money	50%

★ ★ ★

Escape from Perilous Atari 400/800 32K £14.95

English Software, 50 Newton St, Piccadilly, Manchester M1 2EA

This game appears to be the Mark 2 version of English Software's Time Warp. The idea is to guide a little man around the screen to pick up four treasures, whilst avoiding the 'demons' that follow you.

The man is more detailed, the background better planned, but still the game lacks something.

You can walk for screens without seeing anything, and the two monster types are easily avoided. There are three levels to go through.

Somehow I found my way out of the gardens into the caverns, but there was still a lack of activity — perhaps the monsters were on a lunch break?

An idea that needs developing considerably before it will provide a good game. **M.F.**

instructions	60%
playability	10%
graphics	40%
value for money	20%

★ ★

THE WIZARD'S WARRIORS: A fast moving game that matches developments in your skill as a player by becoming increasingly more devious. By offering to you the full range of options you can choose how to control your warrior through the maze. A full implementation of this program enables such features as a continuous series of sound effects, arcade quality graphics, double-point scoring, and--for the very artful --bonus lives. **Spectrum £4.95**

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Setting the Pase in software

Pasesoft's aim is to be comprehensive — and with 24 programs covering eight micros, it seems well on the way to achieving that aim. Tony Reid, the company's alien-zapping manager, talked to Candice Goodwin about what else Pasesoft has up its sleeve

At Pase's shop at 213-215 Market Street, Hyde, software and micros used to rub shoulders with burglar alarms — a relic of the firm's engineering background. Its MD, John Raduch, originally had plans to start an engineering business. Hence the name, which stands for Process Automation Systems Engineering.

But now, 18 months after the shop's opening, the computer business has completely taken over the premises, and the burglar alarms have been moved off down the road.

Pase has been selling other people's software for some time. But wasn't until April that it started off its own software venture, Pasesoft.

Since then, though, it hasn't been hanging about. It already has 24 titles, and stands out from the crowd because of the number of machines it covers. It has programs for the BBC, VIC, ZX81, Dragon, Lynx, Oric, TI-99/4A and Spectrum — though some machines are covered better than others.

Computer games buyers tend to be young, and it probably helps that Pase has a young manager, eighteen-year-old Tony Reid. Tony approaches the software market from the viewpoint of an avid arcade-goer and computer games player. When I spoke to him, he was celebrating his highest score yet on TI's Parsec: 124,000.

It was Tony who gave John Raduch the idea of starting Pasesoft, when he approached him with some VIC-20 and BBC programs he had written. Tony had previously tried to sell the programs through his own company, Ozark Software, but the business never really took off. "I had no capital to invest in promotion", he said.

But with the backing of Pase, the programs started to sell. They were joined by Paseman, a BBC program written by Pase's engineer Ken Williams, then Tony wrote some programs for the Oric. Now most of the programs come from freelancers, "mainly 16 to 18 year olds who come into the shop on Saturdays", according to Tony.

Tony himself doesn't have time for programming during the day. He's kept too busy running the software business — which includes taking care of tape duplicating. All the copying is still done in-house, using banks of cassette recorders linked up to a reel-to-reel.

And no doubt bearing in mind his own experience of trying to set up in business, Tony has been writing round to all the small software companies he finds in the classified ads section, with a view to taking over the marketing of their programs too.

Often he doesn't get home until nine in the evening, "and then it's straight on to the Oric and programming until midnight." Tony still has a soft spot for the BBC micro he used to work on, "because it's such a brilliant machine", but commercial pressures have influenced his taste. "I like the Oric because the software written on it is earning me money", he says.

Looking at the Oric more objectively, Tony thinks that "the Oric's unreliable in some respects — loading and saving could be improved — but it's got very good sound. The hi-res graphics are good — it compares with the BBC on mode 7. I think it's an underestimated machine."

Pase has eight titles for the Oric, and finds that because of the shortage of Oric software, they sell like hot cakes. Enquiries have come from as far afield as Australia, Norway and France.

More Oric software is planned. But the next Pase release will be a batch of programs for the Spectrum and for the TI-99/4A in Extended Basic.

Pase doesn't just sell its own brand of software. It has already brought out a joystick interface which enables the Oric to use any VIC or Atari joystick.

Planned for the future is a motherboard which lets Oric owners blow their own EPROM chips. The finished chips would slot into the motherboard and work like a software cartridge.

These two products are the brainchildren of Ian Dyson, the "electronics genius" who also wrote Pase's Oric disassembler. But electronic wizardry is just a freelance job for Ian, who works full-time for Oldham Batteries.

Pase is currently gearing itself up for what Tony expects to be the peak of the software this Christmas. The company has several irons in the fire.

Most of its software business is done by mail order, but it's also opening new shops in Stockport and Rotherham, and supplying increasing amounts of both computers and software to other computer retailers.

And it's keeping in touch with local computer enthusiasts by getting involved in local clubs and school events.

It lends computers, TVs and tape recorders to the Tameside computer club, which now has 30 members.

And it sometimes takes stalls at local school fairs and organises competitions. "For example, we might give away a ZX81 to whoever gets the highest score in one of our games," Tony said. "It all helps to spread our name around."

Four of the Pasemen — from left, Laurence Holt, software writer, Tony Reid, manager, Ken Williams, engineer, and Bill Haydon, shopfloor manager

Programs that have learning taped

Our reviewers investigate a batch of educational programs for a selection of micros

4 Letter Word Atari £6.50

Soflow, 162 Leicester Road, Narborough, Leics

An unimaginative title for a game that hardly stretches the Atari to its limits.

Choosing a one-player game will prompt the computer to select a four-letter word from memory. Your task is to deduce the word by transposing four letters.

The computer will help by indicating the correct position of letter, or correct choice of letter, after evey four entries.

A two-player game involves your opponent picking the target word. Score is calculated according to time taken and guesses made.

4 Letter Word is written in BASIC. No use is made of sound.

The game is fun and could be of educational value for small children, but more should be expected of a program designed for the 16K Atari.

T.A.

instructions	50%
ease of use	45%
display	35%
value for money	40%

★★

World Geography BBC £6.95

Program Power, 8/8A Regent St, Chapel Allerton, Leeds LS7 4PE

The program starts by drawing a really excellent high resolution map of the world in blue and yellow which, once drawn, calls up the second part of the program comprising the tests. All the instructions are displayed on the screen just under the map and are easy to understand.

The interactive part of the program consists of a straight forward question and answer sessions which first ask if you want to answer questions on capitals, populations or both; and the give a choice of eight levels of difficulty.

The first level tests well known countries but the top level would demand better than average geographical knowledge. Help is given by a spot of light which appears on the map at the approximate position of the country in question.

J.D.

instructions	80%
ease of use	40%
display	70%
value for money	60%

★★★

Amazing Dragon 32 £5.95

Bamby, Leverburgh, Isle of Harris PA83 3TX

A new company on the Dragon scene offering to "help develop hand and eye co-ordination, to aid in teaching conceptual thought and to form an introduction to computers for young children." I tried it on four children aged five, six, seven and eight. Admittedly the blurb mentions pre-school children and that should be borne in mind.

Five mazes are presented using the hi-res screens in order of difficulty selected by the user. A cursor is moved by the arrow keys to a finish point.

One of the problems is that there are only five mazes with no variations. Very limiting. There was little to encourage them to repeat the journey and no variety to reinforce anything learned.

There must be a ready market for tiny tots' software but it has to be more stimulating than this.

M.P.

instructions	80%
ease of use	60%
display	50%
value for money	20%

★★

Chemistry BBC £6.95

Program Power, 8/8A Regent St, Chapel Allerton, Leeds LS7 4PE

This program uses the idea of a fruit machine with three windows, one giving the type of element, one giving the symbol or atomic number, and the other name of the element.

There are 10 jackpots to win in each game and are won by the player pressing a key whenever all the windows relate to one element.

You enter your name and skill level before each game, and there are four skill levels. These claim to range from beginner to professor, but this is an exaggeration.

The graphics, apart from the moving handle of the fruit machine, are poor and fairly static. The noise, and I use the word deliberately, accurately imitates that of a real machine and quickly becomes very tiring. Fortunately it can be turned off.

The whole game is repetitive and rather trivial so unless there are two or more players one would quickly tire of it.

J.D.

	80%
instructions	40%
ease of use	40%
display	50%
value for money	

★★★

Highflyer BBC B £5.95

G.T.M. York Road, Leeds, Yorks

An educational program to give practice and tests on homophones (similar sounding words, like hear and here).

Correct answers an aeroplane on its flight from London to Paris. Seven or more is successful, less than seven crashes.

Excellent error trapping, good use of colour/graphics in mode 7, and very easy to use.

Twenty-nine sets of 10 sentences are supplied, which takes up a massive amount of memory. A limited but useful program for junior/middle schools or remedial classes.

Instructions are on screen and on duplicated sheets and are very comprehensive.

The construction of this program does not allow for modification of the sentences by the teacher/parent, though.

R.E.

instructions	96%
ease of use	73%
display	79%
value for money	80%

★★★★

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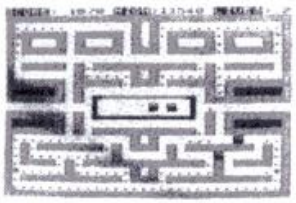

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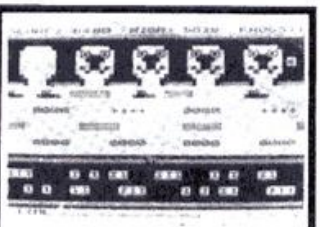

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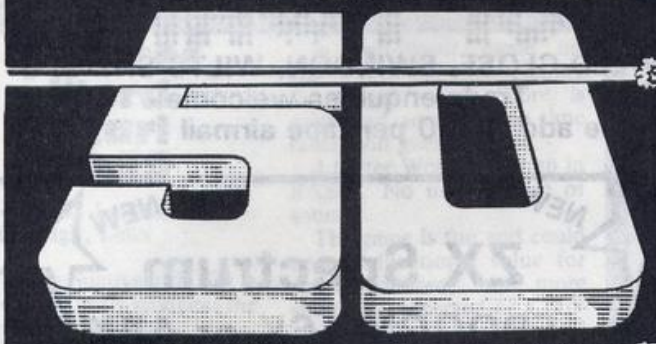

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Get a terrific tan and find clothes that fit you

In this exclusive Holiday Special we help you get a great tan and ensure you choose the right size when shopping for clothes abroad. The programs, by HCW regulars Ray Elder and Allen Webb, are for the BBC micro, Spectrum and unexpanded VIC-20

You expect a terrific tan when you go on holiday. And many of us are also tempted to shop for new clothes while abroad.

In this Home Computing Weekly Special we help you to do both.

The programs on these pages — for the Spectrum, unexpanded VIC-20 and BBC micro — will tell you which suntan lotion is best for your skin type and convert your measurements to sizes used in popular holiday destinations.

The **suntan programs** use the Sun Protection Factor which can now be found on the labels of all tanning products.

Remember that, even if you want to tan as quickly as possible, good sun protection should be your main consideration.

Without this you risk prematurely aged skin and serious illness, even two of the three types of skin cancer.

It is best to choose lotions or creams which contain all the following: para-aminobenzoic acid, any of the B vitamins, a powerful ultra-violet deflector, benoxophenone.

Ultra-violet light is strongest between 10 am and 3 pm and can reach your body even if you are not in direct sunlight. And it can even reach up to three feet underwater — so you're at risk even while swimming.

Your protection can be destroyed by sweating, swimming, sand and towel contact, so apply lotions and creams often, hourly if necessary.

Neck and face need a high SPF, 10 or more, regardless of skin type and may need even more frequent applications.

If you become sunburned do not cover with calomine lotion or a cream containing allotan or chamomile. A mixture of water and milk will also act as a soothing lotion. Severe burns need treatment by a doctor.

VIC-20 programs by Allen Webb

VIC-20 suntan program

```
 1 PRINT"■■■ SUN TAN LOTION GUIDE"
 2 PRINT"■■■ DO WANT INSTRUCTIONS?"
 3 GET I$:IFI$=""THEN3
 4 IFI$="Y"THEN60
 5 PRINT"■1. SENSTITIVE - ALWAYS    BURNS EASILY OR       NEVER TANS."
 6 PRINT"■2. SENSITIVE - ALWAYS     BURNS OR TANS         MINIMALLY."
 7 PRINT"■3. LIGHT BROWN/NORMAL-    BURNS MODERATELY OR   TANS GRADUALLY."
 8 PRINT"■4. INSENSTIVE - RARELY    BURNS OR TANS WELL."
 9 PRINT"■5. INSENSITIVE - NEVER    BURNS OR DEEPLY       PIGMENTED."
10 PRINT"■■■INPUT YOUR SKIN TYPE"
11 GET I$:IFI$<"1"ORI$>"5"THEN11
12 ON VAL(I$)GOTO13,21,30,39,49
13 PRINT"■■VERY SENSITIVE SKIN"
14 PRINT"■■LOTION REQUIRED:"
15 PRINT"■"TAB(8)"SPF 15"
16 PRINT"■■■1ST WEEK"
17 PRINT"■■APPLY LOTION LIBERALLYTO ALL EXPOSED AREAS. APPLY AT LEAST 6 TIMESPER
 DAY"
18 PRINT"■■■2ND WEEK"
19 PRINT"■■APPLY LOTION LIBERALLYTO ALL EXPOSED AREAS. APPLY AT LEAST 6 TIMESPER
 DAY"
20 GOTO 58
21 PRINT"■■SENSITIVE SKIN"
22 PRINT"■■LOTION REQUIRED:"
23 PRINT"■"TAB(5)"SPF 8 OR 6"
24 PRINT"■■■1ST WEEK"
25 PRINT"■■APPLY SPF 8 LOTION TO ALL EXPOSED AREAS. USESPF 15 LOTION ON NOSE ,SH
OULDERS";
26 PRINT", FEET AND  SHINS. ■■5 MINUTES EACH SIDE"
27 PRINT"■■■2ND WEEK"
28 PRINT"■■USE SPF 6 OR 8.       ■■15 MINUTES EACH SIDE"
29 GOTO58
30 PRINT"■■NORMAL SKIN"
31 PRINT"■■LOTION REQUIRED:"
32 PRINT"■"TAB(8)"SPF 4"
33 PRINT"■■■1ST WEEK"
34 PRINT"■■USE SPF 4 LOTION ON   ALL AREAS. USE SPF 15 ON EASILY BURNT AREAS.■■20
 MINUTES ";
35 PRINT"EACH SIDE."
36 PRINT"■■■2ND WEEK"
37 PRINT"■■APPLY SPF 4 LOTION TO ALL AREAS. ■■45 MINUTES EACH SIDE."
38 GOTO58
39 PRINT"■■INSENSITIVE SKIN"
40 PRINT"■■LOTION REQUIRED:"
41 PRINT"■"TAB(8)"SPF 2 "
42 PRINT"■■■1ST WEEK"
43 PRINT"■■IF SKIN BURNS AT FIRSTUSE SPF 4. IF NOT USE SPF 2.";
44 PRINT" ■■30 MINUTES EACHSIDE."
45 PRINT"■■■2ND WEEK"
46 PRINT"■■USE SPF 2 LOTION ON   ALL AREAS. ■■1 - 2 HOURS";
47 PRINT"ON EACH SIDE."
48 GOTO58
49 PRINT"■■INSENSITIVE SKIN"
50 PRINT"■■LOTION REQUIRED:"
51 PRINT"■"TAB(8)"SPF 2 "
52 PRINT"■■■1ST WEEK"
53 PRINT"■■USE SPF 2 LOTION ON   ALL AREAS. ■■1 HOUR ";
54 PRINT"ON  EACH SIDE."
55 PRINT"■■■2ND WEEK"
56 PRINT"■■USE SPF 2 LOTION ON   ALL AREAS. ■■AS LONG";
57 PRINT" AS THE LOTION IS APPLIED REGULARLY YOU CAN STAYIN THE SUN AS LONG AS Y
OU WANT
58 GET I$:IFI$=""THEN58
59 GOTO5
60 PRINT"■■SINCE DIFFERENT SKIN  TYPES REACT TO SUN IN DIFFERING WAYS, IT"
61 PRINT"FOLLOWS THAT NOT EVERYBODY NEEDS THE SAME  DEGREE OF PROTECTION";
62 PRINT"  FROM SUN BURN."
63 PRINT"■■SUN TAN LOTIONS ARE  GRADED BY THE SPF (SUNPROTECTION FACTOR)."
64 PRINT"■■THE MORE SENSITIVE   YOUR SKIN, THE HIGHER THE SPF RATING NEEDED."
65 PRINT"■■■PRESS ANY KEY FOR MORE"
66 GET I$:IFI$=""THEN66
67 PRINT"■■THIS PROGRAM GIVES YOUR ROUGH GUIDE TO THE  SUN TAN PROCEDURE";
68 PRINT" FOR SKIN OF SPECIFIED    SENSITIVITY."
69 PRINT"■■YOU WILL BE GIVEN THE TYPE OF LOTION FOR   YOUR SKIN ";
70 PRINT"AND THE    MAXIMUM EXPOSURE TIME (ASSUMING A TWO WEEK  HOLIDAY)"
71 PRINT"■■■PRESS ANY KEY TO START"
72 GET I$:IFI$=""THEN72
73 GOTO5
```

VIC-20 clothes size progrm part 1, loads redefined characters

```
 1 DATA 2, 2, 2, 2, 2, 2, 2, 1, 24, 36, 66
 2 DATA 126, 66, 66, 66, 0, 124, 34, 34, 60, 34
 3 DATA 34, 124, 0, 28, 34, 64, 64, 64, 34, 28
 4 DATA 0, 120, 36, 34, 34, 34, 36, 120, 0, 126
 5 DATA 64, 64, 120, 64, 64, 126, 0, 126, 64, 64
 6 DATA 120, 64, 64, 64, 0, 28, 34, 64, 78, 66
 7 DATA 34, 28, 0, 66, 66, 66, 126, 66, 66, 66
 8 DATA 0, 28, 8, 8, 8, 8, 8, 28, 0, 14
 9 DATA 4, 4, 4, 4, 68, 56, 0, 66, 68, 72
10 DATA 112, 72, 68, 66, 0, 64, 64, 64, 64, 64
11 DATA 64, 126, 0, 66, 102, 90, 90, 66, 66, 66
12 DATA 0, 66, 98, 82, 74, 70, 66, 66, 0, 24
13 DATA 36, 66, 66, 66, 36, 24, 0, 124, 66, 66
14 DATA 124, 64, 64, 64, 0, 24, 36, 66, 66, 74
15 DATA 36, 26, 0, 124, 66, 66, 124, 72, 68, 66
16 DATA 0, 60, 66, 64, 60, 2, 66, 60, 0, 62
17 DATA 8, 8, 8, 8, 8, 8, 0, 66, 66, 66
18 DATA 66, 66, 66, 60, 0, 66, 66, 66, 36, 36
19 DATA 24, 24, 0, 66, 66, 66, 90, 90, 102, 66
20 DATA 0, 66, 66, 36, 24, 36, 66, 66, 0, 34
21 DATA 34, 34, 28, 8, 8, 8, 0, 126, 2, 4
22 DATA 24, 32, 64, 126, 0, 255, 0, 0, 0, 0
23 DATA 0, 0, 0, 0, 60, 126, 126, 126, 126, 126
24 DATA 60, 128, 128, 128, 128, 128, 128, 128, 128, 0
25 DATA 0, 1, 3, 3, 3, 3, 3, 24, 255, 255
26 DATA 255, 255, 126, 126, 126, 0, 0, 0, 0, 0
27 DATA 0, 0, 0, 0, 0, 128, 192, 192, 192, 192
28 DATA 192, 3, 3, 3, 3, 2, 2, 2, 1, 60
29 DATA 60, 60, 126, 255, 255, 255, 255, 192, 192, 192
30 DATA 192, 64, 64, 64, 128, 1, 1, 1, 3, 3
31 DATA 3, 3, 0, 255, 255, 255, 255, 255, 255, 255
32 DATA 102, 128, 128, 128, 192, 192, 192, 192, 0, 0
33 DATA 0, 0, 0, 0, 0, 1, 1, 102, 102, 102
34 DATA 102, 102, 102, 231, 231, 0, 0, 0, 0, 0
35 DATA 0, 128, 128, 0, 0, 128, 194, 196, 207, 196
36 DATA 194, 0, 0, 0, 0, 0, 254, 0, 0, 192
37 DATA 192, 192, 194, 68, 79, 68, 130, 0, 0, 0
38 DATA 0, 0, 0, 0, 255, 1, 1, 1, 1, 1
39 DATA 1, 1, 1, 60, 66, 70, 90, 98, 66, 60
40 DATA 0, 8, 24, 40, 8, 8, 8, 62, 0, 60
41 DATA 66, 2, 12, 48, 64, 126, 0, 60, 66, 2
42 DATA 28, 2, 66, 60, 0, 4, 12, 20, 36, 126
43 DATA 4, 4, 0, 126, 64, 120, 4, 2, 68, 56
44 DATA 0, 28, 32, 64, 124, 66, 66, 60, 0, 126
45 DATA 66, 4, 8, 16, 16, 16, 0, 60, 66, 66
46 DATA 60, 66, 66, 60, 0, 60, 66, 66, 62, 2
47 DATA 4, 56, 0, 3, 3, 3, 3, 2, 2, 2
48 DATA 1, 0, 0, 8, 0, 0, 8, 8, 16, 35
49 DATA 36, 17, 157, 157, 157, 37, 38, 39, 17, 157
50 DATA 157, 157, 40, 41, 42, 91, 92, 93, 17, 157
51 DATA 157, 157, 94, 0, 0, 0, 60, 0, 0, 0
52 DATA 0
53 FORI=7168TO7679:READX
54 POKEI,X
55 NEXT
100 REM
110 REM CLOTHES SIZE CALCULATOR PART1
120 REM A E WEBB 1983
130 REM
```

The **clothes size programs** use official information, but do try on the clothes. Like Britain, sizes can vary between manufacturers.

All the programs include routines which draw figure outlines to make them attractive.

Because of the limited memory, the VIC-20 programs are in three listings. One if for sun care and the clothes size calculator is in two parts. The first loads a set of redefined characters into memory. Simply run the two parts one after the other.

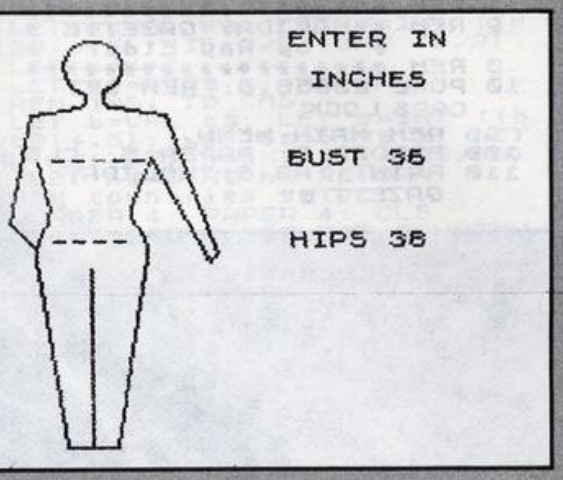
And the Spectrum program has been written in such a way as to make it compatible with the ZX81. All you need to do is expand the multi-statement lines and omit the outline drawing routine.

Spectrum program by Ray Elder

VIC-20 clothes size calculator part 2

```
1 DATA 83,87,91,95,100,105,110,115,120,125,130,135,140
2 DATA BRITAIN,0,GERMANY,26,HOLLAND,26,FRANCE,28,BELGIUM,28,GREECE,26,ITALY,30
3 DATA YUGOSLAVIA,26,SWEDEN,26,SPAIN,26,AUSTRIA,26,USA,-2
4 DATA0,58,11,10,11,0,0,0,110,0,58
10 POKE55,0:POKE56,28
15 DIMS1(13),CO$(12),DI(12),MS(11): FORI=1TO13:READS1(I):NEXT
16 FORI=1TO12:READCO$(I),DI(I):NEXT
17 FORJ=1TO11:READMS(J):NEXT
20 POKE36869,255
30 P1=7801:P2=P1+22:OF=30720
40 PRINT"□"TAB(5)"CLOTHING SIZE"
50 PRINTTAB(6)"CALCULATOR"
60 PRINT"....................."
70 PRINT"XXXMAN OR WOMAN ■M■ OR ■W■"
80 GETI$:IFI$=""THEN80
90 IFI$="W"THEN1000
100 IFI$="M"THEN3000
110 GOTO80
1000 GOSUB20000
1010 HI=HI*2.54:BU=BU*2.54
1020 I=1
1030 IFHI<S1(I)THEN1050
1040 I=I+1:GOTO1030
1050 BH=8+(I-2)*2
1060 I=1
1070 IFBU<S1(I)-5THEN1090
1080 I=I+1:GOTO1070
1090 BB=8+(I-2)*2
1110 PRINT"□ COUNTRY      SIZE"
1120 PRINTTAB(12)"HIP   BUST"
1130 FORI=1TO12
1140 PRINTCO$(I)TAB(12)BH+DI(I)TAB(17)BB+DI(I):NEXT
1150 GOTO4000
3000 PRINT"□"TAB(5)"CLOTHING SIZE"
3001 PRINTTAB(6)"CALCULATOR"
3002 PRINT"....................."
3010 POKE781,10:POKE782,0:POKE783,0:SYS65520:PRINT"CHEST SIZE":IN$="":RF=0
3020 GOSUB30000
3030 IFRF=0THEN3020
3040 CH=VAL(IN$)
3050 PRINT"XXINPUT TYPE"
3060 PRINT"X"TAB(5)"1 NORMAL"
3065 PRINT"X"TAB(5)"2 LONG"
3066 PRINT"X"TAB(5)"3 SHORT PORTLY"
3070 GETZ:IFZ<1ORZ>3THEN3070
3080 PRINT"□":ONZGOTO3090,3200,3300
3090 PRINT"NORMAL SIZEX":FORI=1TO11
3100 SZ=CH:IFI<>1THENSZ=SZ+10
3110 O$=STR$(SZ):IFI=4THENO$=STR$(SZ)+" ?"+STR$(SZ-6)
3115 N=14:IFI=4THENN=11
3116 IFI=9THENO$="C"+O$
3120 PRINTCO$(I)TAB(N)O$:NEXT
3130 GOTO4000
3200 PRINT"LONGX":FORI=1TO11
3205 IFI=1THEN3250
3210 IFMS(I)=0THENO$="":GOTO3270
3220 IF(I=9ANDCH<36)OR(I=10ANDCH<36)THENO$="":GOTO3270
3230 IFI=4THENO$=STR$(CH+MS(I))+"L ?"+STR$(CH+4):GOTO3270
3240 IFI=9THENO$="C"+STR$(CH+MS(I)):GOTO3270
3245 IFI=2THENO$=STR$(INT(CH*2.489)):GOTO3270
3250 O$=STR$(CH+MS(I))
3270 PRINTCO$(I)TAB(11)O$
3280 NEXT:GOTO4000
3300 PRINT"SHORT PORTLYX":FORI=1TO11
3305 IFI=1THENSZ=CH:GOTO3360
3306 IFI>5ANDI<9THENO$="":GOTO3360
3307 IF(I=5ORI=9)ANDCH>44THENO$="":GOTO3360
3310 SZ=23+(CH-36)/2
3320 IFI=3THENSZ=CH+608:GOTO3355
3330 IFI=9THENSZ=SZ*4:GOTO3355
3340 IFI=10THENSZ=SZ*2:GOTO3355
3350 IFI=5THENSZ=SZ*2+600
3355 O$=STR$(SZ):IFI=9THENO$="D"+O$
3360 PRINTCO$(I)TAB(11)O$
3370 NEXT
4000 GETI$:IFI$=""THEN4000
4010 GOTO40
20000 PRINT"□ INPUT THE REQUESTED   DATA"
20010 LA$="N £ XXXX!^+(!XXXX!:#$XXXX%&'XXXX()*■"
20020 PRINT"XXXXX"TAB(9)LA$
20025 POKE781,10:POKE782,0:POKE783,0:SYS65520:PRINT"BUST SIZE":IN$="":RF=0
20030 POKEP1,43:POKEP1+1,44:POKEP1+1+OF,6
20040 FORD=1TO100:NEXT
20050 POKEP1,33:POKEP1+1,32
20060 FORD=1TO100:NEXT
20065 GOSUB30000:IFRF=1THEN20080
20070 GOTO20030
20080 BU=VAL(IN$)
20090 POKE781,10:SYS60045
20100 POKE781,10:POKE782,0:POKE783,0:SYS65520:PRINT"HIP SIZE":IN$="":RF=0
20110 POKEP2,45:POKEP2+1,44:POKEP2+1+OF,6
20120 FORD=1TO100:NEXT
20130 POKEP2,36:POKEP2+1,32
20140 FORD=1TO100:NEXT
20150 GOSUB30000:IFRF=1THEN20170
20160 GOTO20110
20170 HI=VAL(IN$)
20180 RETURN
30000 GETI$:IFI$=""THENRETURN
30005 IFI$=CHR$(13)ANDIN$<>""THENRF=1:RETURN
30010 IFI$=CHR$(20)ANDIN$<>""THEN30040
30020 IFI$<"0"ORI$>"9"THENRETURN
30025 IFLEN(IN$)>1THENRETURN
30030 IN$=IN$+I$:GOTO30060
30040 IN$=LEFT$(IN$,LEN(IN$)-1)
30060 POKE781,10:POKE782,10:POKE783,0:SYS65520:PRINT"   ■■■";"3"IN$:RETURN
```

What the screen looks like when you run the Spectrum program



SELECT COUNTRY

G. Germany	N. Netherlands
F. France	B. Belgium
G. Greece	I. Italy
Y. Yugoslavia	S. Sweden
E. Spain	A. Austria
T. Turkey	

WOMEN'S DRESS SIZES

Your dress size in Britain for the given measurements is 12

In GERMANY
your size is 38

SUN AND SKIN

SUN PROTECTION FACTOR

V.strong sun (Tropics)	Normal sun (Europe)
8	6

MINIMUM

Natural protection for 15 mins.

MAXIMUM exposure (with above SPF)
120 mins

SUN AND SKIN

Enter SPF of lotion/cream that you will be using

MAXIMUM
EXPOSURE TIME FOR SPF 10
IS 150 mins.

```
  1 REM ********************
  2 REM * HOLIDAY GAZETTE *
        *    by Ray Elder   *
  3 REM ********************
 10 POKE 23658,8: REM SET
    CAPS LOCK
 99 REM MAIN MENU.
100 BORDER 5: PAPER 5: CLS
110 PRINT TAB 6;"HOLIDAY
    GAZETT E"
120 PRINT AT 5,0;"##############
####################"
130 PRINT ''TAB 6;"C. Clothing s
ection"''TAB 6;"S. Suncare secti
on"''TAB 6;"E. End program"
140 PRINT '"##################
##############"
150 LET g$=INKEY$: IF g$="" OR
(g$<>"C" AND g$<>"S" AND g$<>"E"
) THEN GO TO 150
170 IF g$="S" THEN GO SUB 2000
180 IF g$="E" THEN CLS : PRINT
AT 10,11;"GOODBYE"''TAB 5; FLASH
1;"HAVE A HAPPY HOLIDAY": STOP
190 IF g$="C" THEN GO SUB 5000
200 GO TO 100
999 REM
1000 GO SUB 9100: REM GET INFO
1049 REM PRINT INFO.
1050 PAPER 5: BORDER 5: CLS
1060 PRINT TAB 9;"SUN AND SKIN"
1070 PRINT ''"      SUN PROTECTIO
N FACTOR"
1080 PRINT '" V.strong sun"," No
rmal sun","  (Tropics)","  (Euro
pe)"
1090 PRINT INK 3; PAPER 7;" ";TA
B 5;spf;TAB 22;spf-2-(2 AND spf>
10)+(2 AND spf<4);TAB 27;"."
1095 PRINT TAB 11; FLASH 1;"MINI
MUM"; FLASH 0
1100 PRINT AT 14,0;"Natural prot
ection for ";snp;" mins."
1110 PRINT '' INVERSE 1;"MAXIMUM
"; INVERSE 0;" exposure(with abo
ve SPF)",,mxp;" mins"
1120 GO SUB 9000
1130 RETURN
1999 REM SUNCARE MENU
2000 BORDER 6: PAPER 6: CLS
2010 PRINT TAB 9;"SUN AND SKIN"
2020 PRINT AT 5,0;"##############
####################"
2030 PRINT '"M. Calculate Minimu
m SPF."''"T. Calculate Max.Time(
given SPF)"''"R. Return to main
progra#"
2040 PRINT '"##################
##############"
2050 LET g$=INKEY$: IF g$="" OR
(g$<>"M" AND g$<>"T" AND g$<>"R"
) THEN GO TO 2050
2070 IF g$="M" THEN GO SUB 1000
2080 IF g$="R" THEN RETURN
2090 IF g$="T" THEN GO SUB 3000
2100 GO TO 2000
2999 REM CALC.TIME FOR SPF.
3000 GO SUB 9100
3010 PAPER 6: BORDER 6: CLS
3020 PRINT TAB 9;"SUN AND SKIN"
3030 PRINT ''"Enter SPF of lotio
n/cream that"''"you will be usin
g"
3040 INPUT spf
3050 LET mxp=snp*spf
3060 PRINT ''''' FLASH 1;"MAXIMUM
"; FLASH 0''"EXPOSURE TIME FOR S
PF ";spf
3070 PRINT '"IS ";mxp;" mins."
3080 GO SUB 9000
3090 RETURN
4999 REM GET SEX/SIZE UNITS
5000 BORDER 6: PAPER 5: CLS
5010 PRINT TAB 8;"CLOTHING SECTI
ON"
5020 PRINT ''"Press W. for Women
's dresses"''TAB 6;"M. for Men's
 trousers."
5030 LET s$=INKEY$: IF s$="" OR
(s$<>"W" AND s$<>"M") THEN GO TO
 5030
5040 PRINT ''''"Press I. if you w
ill enter size          in INCHE
S."''TAB 6;"C. to use centimetre
s."
5050 LET x$=INKEY$: IF x$="" OR
(x$<>"C" AND x$<>"I") THEN GO TO
 5050
5060 IF s$="M" THEN GO TO 5500
5069 REM SET SCREEN
5070 BORDER 6: PAPER 6: INK 1: C
LS
5099 REM DRAW OUTLINE WOMAN
5100 PLOT 45,144: DRAW 1,6,PI/1.
5: DRAW 2,20,-PI/1.1: DRAW 4,0:
DRAW 2,-19,-PI/1.1: DRAW 5,-7,PI
/1.5
5110 RESTORE : FOR j=1 TO 2: FOR
 i=1 TO 6: READ a,b: DRAW a,b: N
EXT i: READ a,b,c,d: DRAW a,b,c*
PI/d: READ a,b,c,d: DRAW a,b,c*P
I/3: NEXT j: READ a,b: DRAW a,b
5120 PLOT 45,144: DRAW -20,-3: D
RAW -8,-43: DRAW 10,-10
```

Spectrum program by Ray Elder

```
5130 PRINT AT 0,16; INK 0;"ENTER
 IN";AT 2,14;("CENTIMETRES" AND
X$="C")+("    INCHES" AND X$="I")
5139 REM INPUT SIZES
5140 PRINT AT 6,4; INK 2;"-----"
;AT 6,16; FLASH 1;"BUST <=": INP
UT b$: FLASH 0: PRINT AT 6,16;"B
UST ";b$
5150 PRINT AT 10,4; INK 2;"----"
;AT 10,16; FLASH 1;"HIPS <=": IN
PUT h$: FLASH 0: PRINT AT 10,16;
"HIPS ";h$
5160 INPUT "Is this correct (Y O
R N)";g$: IF g$="N" THEN GO TO 5
070
5169 REM CALC.SIZE
5170 IF x$="I" THEN GO SUB 8050
5180 LET b=VAL b$: LET h=VAL h$:
 LET w=83: FOR a=8 TO 32 STEP 2:
 IF h>=w AND h<=w+4 AND b>=w-5 A
ND b<=w-1 THEN GO TO 5200
5185 LET w=w+4+(1 AND w>94)
5190 NEXT a: PRINT ; FLASH 1; BR
IGHT 1;"Non Standard size----Sor
ry.": FLASH 0: BRIGHT 0: FOR i=1
 TO 400: NEXT i: RETURN
5200 LET w=a+26: GO SUB 8100
5210 LET w=w+(2 AND (f$="F" OR f
$="B"))+(4 AND f$="I")
5219 REM DISPLAY INFO.
5220 CLS : PRINT TAB 8;"WOMEN'S
DRESS SIZES"
5230 PRINT '''Your dress size in
 Britain for'''the given measur
ements is ";a
5240 PRINT '''In ";u$;'"your siz
e is ";w;: IF f$="F" THEN PRINT
"N"
5250 GO TO 9000
5499 REM GET MENS INFO.
5500 PAPER 7: BORDER 7: CLS
5510 PRINT AT 3,0;"WAIST SIZE ?"
: INPUT w$: PRINT AT 3,11;w$
5520 IF x$="C" THEN GO SUB 8000
5530 PRINT '''LENGTH ?"''"Enter
"'TAB 7; FLASH 1;"N"; FLASH 0;"
Normal"''TAB 7; FLASH 1;"L"; FLA
SH 0;" Long"''TAB 7; FLASH 1;"S"
; FLASH 0;" Short"
5535 LET l$=INKEY$: IF l$="" OR
(l$<>"N" AND l$<>"L" AND l$<>"S"
) THEN GO TO 5535
5540 GO SUB 8100: REM GET COUNTR
Y
5541 REM CALC.SIZES
5545 LET k$=l$: IF f$="G" OR f$=
"I" OR f$="Y" THEN LET k$="N"
5550 LET w=VAL w$: LET w1=w
5555 IF w/2<>INT (w/2) THEN LET
w=w+1
5560 IF k$="N" THEN LET w=w+10:
LET z$=("C" AND f$="S")+("0" AND
 f$="N")+STR$ w+("-"+STR$ (w-6)
AND f$="F")+("/6" AND f$="E")
5570 IF k$="L" THEN LET w=w+10+(
42 AND (f$="D" OR f$="A"))+(1 AN
D (f$="N" OR f$="B"))-(2 AND f$=
"E"): LET z$=("0" AND f$="N")+("
C1" AND f$="S")+STR$ w+("L/"+STR
$ (w-6)+"L" AND f$="F")+("-7" AN
D f$="E")
5580 IF k$="S" AND (f$="D" OR f$
="F" OR f$="A") THEN LET w=INT (
w/2)+5: LET z$=STR$ w: GO TO 560
0
5590 IF k$="S" THEN LET w=w+10-(
2 AND f$="N"): IF f$="S" THEN LE
T w=w*2
5595 IF k$="S" THEN LET z$=("6"
AND (f$="N" OR f$="B"))+("D" AND
 f$="S")+STR$ w+("-4" AND f$="E"
)
5599 REM DISPLAY INFO.
5600 BORDER 5: PAPER 5: CLS
5610 PRINT TAB 8;"CLOTHING SIZES
"''"Your waist size is ";w1'"Len
gth is ";("Long" AND l$="L")+("N
ormal" AND l$="N")+("Short" AND
l$="S")
5620 PRINT '"(No difference is m
ade in length"''"in Greece,Italy
 and Yugoslavia.)"
5630: PRINT '''Your size in ";u$
;", BRIGHT 1; FLASH 1;" is ";z$
;" "; FLASH 0; BRIGHT 0
5640 GO TO 9000
7999 REM cent to Ins
8000 LET w=VAL w$: LET w=INT ((w
*50/128)+.5): IF w/2<>INT (w/2)
THEN LET w=w+1
8010 LET w$=STR$ w: RETURN
8049 REM INS. TO CMS.
8050 LET b=VAL b$: LET b=INT ((b
*128/50)+.5): LET b$=STR$ b: LET
 h=VAL h$: LET h=INT ((h*128/50)
+.5): LET h$=STR$ h: RETURN
8099 REM countries select
8100 BORDER 4: PAPER 4: CLS
8110 PRINT TAB 8;"SELECT COUNTRY
"
8120 PRINT '"A. Germany","B. Net
herlands"'"C. France","D. Belgi
um"'"E. Greece","F. Italy"'"G.
 Yugoslavia","H. Sweden"'"I. Sp
ain","J. Austria"'"K. Turkey"
8125 IF INKEY$<>"" THEN GO TO 81
25
8130 LET f$=INKEY$: IF f$="" THE
N GO TO 8130
8140 LET t$="DNFBGIYSEAT": FOR i
=1 TO 11: IF f$=t$(i) THEN LET U
$="GERMANY     NETHERLANDSFRANCE
     BELGIUM     GREECE      ITALY
      YUGOSLAVIA SWEDEN      SPAIN
       AUSTRIA    TURKEY      "((i
-1)*11+1 TO i*11): RETURN
8150 NEXT i: GO TO 8130
8999 REM *Input/copy subroutine*
9000 INPUT PAPER 5;"Enter "; FLA
SH 1; BRIGHT 1;"C"; FLASH 0; BRI
GHT 0;" (COPY) or "; FLASH 1; BR
IGHT 1;"N"; FLASH 0; BRIGHT 0;"
(NEXT) ";n$
9010 IF n$="N" THEN RETURN
9020 IF n$="C" THEN COPY : RETUR
N
9030 GO TO 9000
9099 REM *Input skin types*
9100 PAPER 6: BORDER 5: CLS
9110 PRINT TAB 9;"SUN AND SKIN"
9120 PRINT '"Please enter the le
tter which"'"represents your sk
in type"
9130 PRINT '"A. ULTRA-SENSITIVE:
very dry skin";TAB 19;"always bu
rns";TAB 19;"never tans."
9140 PRINT '"B. VERY SENSITIVE:s
lightly dry";TAB 18;"often burns
";TAB 18;"rarely tans."
9150 PRINT '"C. AVERAGELY SENSIT
IVE:burns but";TAB 23;"then tans
"
9160 PRINT '"D. LESS SENSITIVE:o
ily skin";TAB 18;"rarely burns";
TAB 18;"tans easily"
9170 INPUT "Enter A,B,C or D ";s
$
9180 IF s$(1)<"A" OR s$(1)>"D" T
HEN GO TO 9170
9190 LET s=CODE s$(1)-64
9199 REM PRESENT SUNTAN
9200 BORDER 6: PAPER 6: CLS
9210 PRINT TAB 9;"SUN AND SKIN"
9220 PRINT '"Please enter your
present state"'"of suntan."
9230 PRINT '"A. No tan"'"B. Sl
ight tan"'"C. moderate tan"'"D
. Good tan"
9240 INPUT "Enter A,B,C or D ";t
$
9250 IF t$(1)<"A" OR t$(1)>"D" T
HEN GO TO 9240
9259 REM CALC. SPF/MXP/SNP
9260 LET t=ABS (2-INT ((CODE t$(
1)-64)/2))
9270 LET spf=ABS (5-s)*2+t: IF s
pf=10 THEN LET spf=12
9280 IF spf=2 AND t$<"C" THEN LE
T spf=spf+1
9290 LET snp=10*s+(3 AND s=1)-(5
 AND s<4)
9300 LET mxp=snp*spf
9310 RETURN
9699 REM WOMAN OUTLINE DATA
9700 DATA 0,0,20,-3,20,-55,-3,-3
,-23,41,-7,-17,2,-11,1,2,2,-17,-
1,3,-11,-70,-10,0,0,71,0,-71,-10
,0,-11,70,2,17,-1,3,2,11,1,2,-4,
15
```

BBC program by Ray Elder

```
  10 MODE7:VDU23;8202;0;0;0
  20 U$=STRING$(11," "):Z$="XXXXXXX":Y$=STRING$(2
0," ")
 100 PROCcls(130,135):PROCbig(8,"HOLIDAY GAZETTE"
)
 110 PRINTTAB(0,6)"##############################
#####"''"C. Clothing section."''"S. Suncare sectio
n."''"E. End program."''"########################
##########"
 120 G$=INKEY$(0):IF G$="" OR (G$<>"C" AND G$<>"S
" AND G$<>"E") THEN120
 130 IFG$="S" PROCsun ELSE IF G$="C" GOSUB 1000 E
LSE PROCend
 140 GOTO100
 999 STOP
1000 REM clothes S/R
1010 PROCcls(132,134):PROCbig(8,"CLOTHING SECTION
")
1020 PRINT'''"Press W. for Women's dresses."'TAB(
6)"M. for Men's trousers."
1030 S$=INKEY$(0):IFS$="" OR (S$<>"M"AND S$<>"W")
THEN 1030
1040 PRINT'''"Press I. to enter sizes in INCHES."
'TAB(6)"C. to enter in CENTIMETRES."
1050 X$=INKEY$(0):IFX$="" OR (X$<>"C"AND X$<>"I")
THEN 1050
1060 IFS$="M" THEN 2000
1070 MODE4
1080 VDU19,0,3,0,0,0,19,1,1,0,0,0
1090 PROCcircle(250,820,30)
1100 MOVE255,790:DRAW160,770:MOVE255,790:RESTORE9
600:FORI=1TO18:READX%,Y%:DRAWX%,Y%:NEXT
1110 MOVE160,770:DRAW150,650:DRAW210,610
1120 PRINTTAB(13,0)"ENTER IN"''TAB(11,2);:IFX$="C
" PRINT"CENTIMETRES" ELSE PRINT"    INCHES"
1130 INPUTTAB(13,9)"( BUST ",B$:INPUTTAB(13,12)"(
HIPS ",H$
1140 INPUTTAB(0,19)"Is this correct ? (Y or N)",G
$:IFG$="N" THEN1070
1150 B=VALB$:H=VALH$:IFX$="I" B=INT((B*128/50)+.5
):B$=STR$B:H=INT((H*128/50)+.5):H$=STR$H
1160 W=79:A=B:REPEAT W=W+4+(1ANDW>94):A=A+2:UNTIL
((H)=W ANDH(=W+4)AND(B)=W-5ANDB(=W-1))ORA>32
1170 IFA>32 PRINT"NON STANDARD SIZE-SORRY !":MODE
7:VDU23;8202;0;0;0:PROCcont:RETURN
1180 W=A+26:MODE7:VDU23;8202;0;0;0:PROCcountry
1190 W=W+(2AND(F$="C"ORF$="D"))+(4ANDF$="F")
1200 PROCcls(132,135):PRINTTAB(0,1)::PROCbig(10,"
DRESS SIZES.")
```

```
2020 INPUTTAB(6,5)"WAIST SIZE ",W$
2030 IFX$="C" W=VALW$:W=INT((W*50/128)+.5):W$=STR
$W:IFW/2<>INT(W/2) THEN W=W+1:W$=STR$W
2040 PRINT''TAB(6)"LENGTH: L. Long"'TAB(14)"N. No
rmal"'TAB(14)"S. Short"
2050 L$=INKEY$(0):IFL$=""OR(L$<>"L"ANDL$<>"S"ANDL
$<>"N")THEN 2050
2060 PROCcountry
2070 K$=L$:IFF$<"H"ANDF$>"D" K$="N"
2080 W=VALW$:W1=W:IFW/2<>INT(W/2)THEN W=W+1
2090 IFK$="N" W=W+10:Z$=STR$W:IFF$="H" Z$="C"+Z$
ELSE IF F$="B" Z$="0"+Z$ ELSE IF F$="C" Z$=Z$+"-"+
STR$(W-6) ELSE IF F$="I" Z$=Z$+"/6"
2095 IFK$="N" THEN 2140
2100 IFK$="L" W=W+10+(42AND(F$="A"ORF$="J"))+(1AN
D(F$="B"ORF$="D"))-(2ANDF$="I"):Z$=STR$W:IFF$="B"
Z$="0"+Z$ ELSE IFF$="H" Z$="C1"+Z$ ELSE IFF$="C" Z
$=Z$+"L/"+STR$(W-6)+"L" ELSE IFF$="I" Z$=Z$+"-7"
2105 IFK$="L" THEN 2140
2110 IFK$="S"AND(F$="A"ORF$="C"ORF$="J") W=INT(W/
2)+5:Z$=STR$W:GOTO2140
2120 IFK$="S" W=W+10-(2ANDF$="B"):IFF$="H" W=W*2
2130 IFK$="S" Z$=STR$W:IFF$="B"ORF$="D" Z$="6"+Z$
ELSE IF F$="H" Z$="D"+Z$ ELSE IFF$="I" Z$=Z$+"-4"
2140 PROCcls(131,129):PROCbig(10,"MEN'S TROUSERS"
)
2150 PRINT'''"Your waist size is ";W1''"     Leng
th is ";:IFL$="L" PRINT"LONG" ELSE IF L$="S" PRINT
"SHORT" ELSE PRINT"NORMAL"
```

```
1210 PRINT''"Your BRITISH dress size for the
measurements given is ";A''"In ";U$''"your size i
s ";W;:IFF$="C"THEN PRINT"N"
1220 PROCcont:RETURN
1999 STOP
2000 REM Menswear
2010 PROCcls(129,131):PROCbig(8,"CLOTHING SECTION
")
```

```
2160 PRINT'"No difference is made in length in
Greece,Italy and Yugoslavia."
2170 PRINT''"Your size in ";U$:" is ";Z$
2180 PROCcont
2190 RETURN
2999 STOP
5000 DEFPROCcountry
5010 PROCcls(130,135):PROCbig(10,"SELECT COUNTRY"
)
5020 RESTORE9500:PRINT':FOR I=1 TO 11:PRINTTAB(10
);CHR$(I+64);". ";:READU$:PRINTU$:NEXT
5030 PRINTTAB(0,17)SPC(74):INPUTTAB(0,17)"Enter
ETTER (A-K) of the country     which you will be
```

BBC progam by Ray Elder

```
siting ",F$:F$=LEFT$(F$,1):IFF$<"A" OR F$>"K" THEN
5030
 5040 RESTORE9500:FORI=1TOASCF$-64:READU$:NEXT
 5050 ENDPROC
 6000 DEFPROCsun
 6010 PROCcls(132,131):PROCbig(11,"SUN AND SKIN")
 6020 PRINTTAB(0,6)"##############################
#####"''"M. Calculate Minimum SPF."''"T. Calculate
 Max. Time (given SPF)"''"R. Return to main progra
m."''"#####################################"
 6030 G$=INKEY$(0):IF G$="" OR (G$<>"M" AND G$<>"T
" AND G$<>"R") THEN6030
 6040 IF G$="M" PROCmin ELSE IF G$="T" PROCmax ELS
E ENDPROC
 6050 GOTO6010
 6500 DEFPROCmax
 6510 PROCskintan
 6520 PROCcls(129,134):PROCbig(11,"SUN AND SKIN")
 6530 PRINT'"Enter SPF. of the lotion/cream that"'
'"you will be using.    ":INPUTspf:mxp=snp*spf
 6540 PRINT''CHR$(136)"MAXIMUM";CHR$(137);"EXPOSU
RE TIME FOR SPF ";spf;''TAB(12)"IS ";mxp;" mins."
 6550 PROCcont:ENDPROC
 6700 DEFPROCmin
 6710 PROCskintan
 6720 PROCcls(133,131):PROCbig(11,"SUN AND SKIN")
 6730 PRINT''TAB(7)"SUN PROTECTION FACTOR"''"  V.
strong sun";TAB(22)"Normal sun"''"     (Tropics)";TA
B(23)"(Europe)"
 6740 PRINTTAB(8);spf;TAB(26);spf-2-(2ANDspf>10)+(
2ANDspf<4)
 6750 PRINTTAB(14)CHR$136;"MINIMUM"
 6760 PRINTTAB(0,13)"Natural protection for ";snp;
" mins."''"MAXIMUM exposure (with above SPF.)"''TA
B(20);CHR$136;mxp;CHR$137;"mins."
 6770 PROCcont:ENDPROC
 6999 STOP
 7000 DEFPROCskintan
 7010 PROCcls(134,132):PROCbig(11,"SUN AND SKIN")
 7020 PRINT'"  Please enter the letter which "'"
 represents your skin type."
 7030 PRINT'"A. ULTRA-SENSITIVE: very dry skin"'TA
B(20)"always burns,"'TAB(20)"never tans."
 7040 PRINT"B. VERY SENSITIVE:  slightly dry"'TAB(
20)"often burns,"'TAB(20)"rarely tans."
 7050 PRINT"C. AVERAGELY SENSITIVE:"'TAB(20)"burns
 then tans."
 7060 PRINT'"D. LESS SENSITIVE:  oily skin"'TAB(20
)"rarely burns,"'TAB(20)"tans easily."
 7070 PRINTTAB(8,22);SPC(25);TAB(8,22);:INPUT"Ente
r A,B,C or D ",S$:S$=LEFT$(S$,1):IFS$<"A" OR S$>"D
" THEN7070
 7080 S=ASCS$-64
 8010 PROCcls(131,132):PROCbig(11,"SUN AND SKIN")
 8020 PRINT'"Please enter your state of tan"
 8030 PRINT''TAB(10);"A. NO TAN"''TAB(10);"B. SLIG
HT TAN"''TAB(10)"C. MODERATE TAN"''TAB(10);"D. GOO
D TAN"
 8040 PRINTTAB(8,18);SPC(25);TAB(8,18);:INPUT"Ente
r A,B,C or D ",T$:T$=LEFT$(T$,1):IFT$<"A"ORT$>"D"T
HEN 8040
 8050 T=ABS(2-INT((ASCT$-64)/2)):spf=ABS(5-S)*2+T:
IFspf=10 THENspf=12
 8060 IFspf=12 AND T$="C" spf=spf+1
 8070 snp=10*S+(3 AND S=1)-(5 AND S<4):mxp=snp*spf
 8080 ENDPROC
 8999 STOP
```

```
 9000 DEFPROCcls(X%,Y%)
 9010 CLS:VDU28,0,24,2,0:PRINTSTRING$(25,CHR$X%+CH
R$157+CHR$Y%)
 9020 VDU28,3,24,39,0
 9030 ENDPROC
 9100 DEFPROCbig(Y%,Y$)
 9110 FORI=1TO2:PRINTTAB(Y%);CHR$(141);Y$:NEXT
 9120 ENDPROC
 9200 DEFPROCcont
 9210 PRINTTAB(0,22)::PROCbig(3,"Press SPACE bar t
o continue.")
 9220 REPEAT UNTIL INKEY(-99)
 9230 *FX15,0
 9240 ENDPROC
 9300 DEFPROCend
 9310 CLS:VDU28,0,24,39,0:PRINTTAB(0,10)::PROCbig(
15,"GOODBYE"):PRINT''TAB(8)CHR$136;"HAVE A HAPPY H
OLIDAY !"
 9320 GOTO9320
 9400 DEFPROCcircle(X%,Y%,R%)
 9410 MOVEX%+R%,Y%:FORZ=0TO2*PI+.2STEP.2
 9420   DRAWX%+(R%*COS(Z)),Y%+(R%*SIN(Z))
 9430   NEXT:ENDPROC
 9500 DATAGERMANY,NETHERLANDS,FRANCE,BELGIUM,GREEC
E,ITALY,YUGOSLAVIA,SWEDEN,SPAIN,AUSTRIA,TURKEY
 9600 DATA350,770,405,610,390,600,315,720,295,650,
300,645,305,638,310,630,275,430,255,430,255,620,25
5,430,235,430,200,630,205,638,210,645,215,650,195,
720
```

● **Suntan data supplied by Elizabeth Arden and Coppertone. Clothes size data by the British Standards Institution and SGS Inspection Services. Pictures by Dorothy Perkins and Marks and Spencer of a selection of swimwear at their stores, and from Coppertone**

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HUNT WINS GRAND PRIX

At yesterday's Monaco Grand Prix, a hunting party strayed onto the track at the climax of the race. Cars were halted as the hounds rampaged around the circuit. "The whole place has gone to the dogs," one driver was reported as saying. The race was restarted; riders and drivers battled bitterly around the course before the Hunt thundered past the finishing line to take the chequered flag (it hasn't been seen since).

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