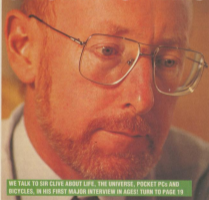


POPULAR FIRST WITH NEWS AND REVIEWS! COMPUTING 55p AUGUST 3 1989 WEEKLY

SINCLAIR SPEAKS



WE TALK TO SIR CLIVE ABOUT LIFE, THE UNIVERSE, POCKET PCs AND BICYCLES. IN HIS FIRST MAJOR INTERVIEW IN AGES! TURN TO PAGE 19



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ST, AMIGA, SPECTRUM, BBC AND PC PROBLEMS SOLVED, p.36

BUDGETS BURST OUT

THREE NEW budget game labels are being launched this summer. Expect a host of new games and some re-releases in the 4-60 market at £2.99.

Microden is the name of a new company set up by Jonathan Edger. The first games for all the major 4-60 machines are expected to be in the shops at the beginning of September, priced at £2.99. Games will be in cassette format initially with discs probably following later.

Prices of cash or equipment are promised for the first games to be completed each game, many of which will be share-ware. What is described as a "hard about-ware" called "Bingo" is currently top of the list. It runs on the C64 and has over 400 scrolling animated screens.

Edger, who previously ran a company called Competition producing utilities for the Spectrum, commented:



John Edger's independent company aims to get prices to gold games.

"We are a completely independent company and all our games are original. Once the label is established we will set up a full price label and perhaps deal with label software as well."

Secondly, the work sets the launch of a new budget label by the man who has previously opened up markets for the likes of Mastertronic. Code International's Pindie-Driver is a collaboration. "We're close to the everyone else so why not do it the conventional?" commented a company spokesman.

Now Richard Reddy has formed a new budget label, Cobra, and signed a back-catalogue deal with Games for the Games, all of which will retail for £2.99. The first releases will be M&A, Cosmic Probe and Emerald Warrior in C64, Amstrad, Spectrum and Atari 400 versions. Subsequent releases will be mainly conversions of games already available.

This Week

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Ecological concern . . . The Lazarus virus . . . Euclid user group . . . and many more misfires.

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ST owners can get to grips with their tax returns using Personal Tax Planner.

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Divisions among friends.

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Is the new games concept worth the hassle?

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Stopwatch — a program-saving lifeline for the Amiga.

BBC SHOW REPORT, p.31

Incomprehensible optic Duncan Evans heads off to the Alexandra Palace.

KEN GARROCK, p.36

Linking the Amiga A500 and a terminal . . . BBC buffers . . . ST mice . . . PC emulators . . . Spectrum joystick interface . . . and more.

FEEDBACK, p.38

A home programmer pines for the "good" 'ole days.



Model of revolution from Zing.

Mavis on a QWERTY

MINDSCAPE is certainly launching some interesting software fairly — following the minimalist *Ejo* and *Death* game comes a crop of productivity software. New titles include *Zing*, *Mavis Business Teacher Typing* and *The Secretary Bird*.

Zing is a 3-D graphics package for

the PC and Mac that allows user-created images to be transported between the two machines. Symmetrical 3-D shapes are created by an outline on an axis which then generated by a field of revolution by rotating the outline around the axis.

A profiler allows users to draw multiple 3-D cross-sections to produce a 3-D image. Priced at £149.99, *Zing* is aimed at £100s and its image format is compatible with all major packages.

Mavis Business Teacher Typing is a tutoring program with a difference: for the Amstrad ST, Amiga, Apple II GX, Mac or PC, its built-in AI machine supposedly tailors your lessons to your ability but Mavis, your on-screen assistant, has some pretty neat tricks up her sleeve. One lesson involves a real race, in which you use standard-looking drive a race track as a fast car, losing speed (and the game) whenever you make a typing mistake. The price is £29.99.

The *Secretary Bird* is a tour in one offer pack for the PC with a WP, spelling checker, database and spreadsheet. The price is £29.99. More shapes can be contacted on 044 486 147. **Fleishch Freddy preview: see page 17 in this issue.**



Dead PC1 may live

JERRY EARL, (above), the programmer now marketing software at Commodore, may revive the line's cheap PC clones. The PC1, which was priced at £284, The machine died about the year while supplies dried up after Games which switched over to PC STs. Commodore Germany, which supplies hardware to the U.K., stopped making the line model.

In the U.K., this has left the Amstrad PC 200 at £299 the cheapest PC available. In an exclusive interview with Popular Computing Weekly, Earl said he is considering reintroducing the 8088-based machine if there is sufficient demand. Future plans for the IBM PC line, says Earl, include battery and modem-powered laptops, and two designs based on the 80386 and 80486. Launch dates for the Spring 1988 and 1989 are still unclear, with no firm dates being offered.

Meanwhile, *Dead Alert* has stated August 1988 as launch date for its TT: the 8088 based ST workstation.

There's margin for sale to make a series of TV ads — can you imagine the catch lines? Advertisers are wondering what lies for the new-to-hand (new-to-and-large-and-framed-up) will come out with, Wayne "Sage" — half the list of other candidates, tells 60 percent of all letters also drive. **F**

F New Sage games reviewed page 11.

Advertising consolation

EXPECT some well-wired Sags' job on your TV sets — Sage has appointed the agency that does the Thomson and

NEW AMIGA, C64 PACKS

EXCLUSIVE details of these new Amiga and C64 bundles have been obtained by Popular Computing Weekly.

Independent software publishers, The Disc Company, has put together the packages, which are now being sold by its officially endorsed Commodore.

There are two Amiga packs and one for the C64 on the cards. These are expected to include:

- The Starter Pack, including an £800, the Kind Words 1.0 word processor package and three games, including Ruggy Boy and Crazy Cars.
- The Home Office Pack, including an £800, the Publisher's Choice DTP package (made up of Kind Words 1.0 plus PageMaker 1.0) and a database.



Calling the Home Office with the Disc Company.

• The C64 Test Pilot Pack: this special three box will include five simulators (not all flight sim) for the C64, includ-

ing Advanced Tactical Fighter, from Digital Integration.

Sources suggest that both the Starter and Test Pilot packs are already being well marketed in New Zealand and Belgium respectively where The Disc Company has subsidiaries.

The packs are expected to be launched in the U.K. either before or during the PC Show - although currently the Disc Company will not be exhibiting; dealers and distributors are expected to do the promoting.

Popular Computing Weekly understands that the bundle prices are likely to be as follows: £700 Starter Pack, over £700, £800 Home Office Pack, over £440 and C64 Test Pilot Pack, around £150.

Hackers get the message

UNCLE Sam has come down like a ton of bricks on hackers in the last week, with Kevin Mitnick jailed for a year and the announcement that alleged Postage user spy master Robert Morris is in the charge of illegal computer entry.

Mitnick was convicted of using stolen passwords to access computers. He will serve one year in jail and six months in re-education at a halfway house.

Robert Morris, whose alleged victim was the Postage's Internet offered 6000 UNIX terminals last October, will be charged with illegal manipulation of a 60,000-machine network. The same program exploited a loophole in UNIX that allowed it to tag itself onto e-mail messages.

Photon Paint under an Illusion

STEEK the struggle between distribution and MicroIllusion over who would distribute Photon Paint 2 and Master 5 in the U.K., it seems that MicroIllusion, who produce the packages in the U.S., have won out.

The packages have been available in the States for over a year now but have only made appearances this side of the Atlantic in disk form and are in need of re-flagging. However, the products are now in the shops and are being distributed by MicroIllusion's Europe, which can be contacted on 0400 78500.

Fonetic thisorus faw Ameega

KAMA CLASH is here the first stand-alone dictionary for the Amiga. Based on Longman's Pocket Thesaurus, it-Riget has over 150,000 words and phrases allowing users of word processors or even databases to expand their vocabulary.

A phonetic spelling checker looks for alternatives in words based on how they sound rather than how they are

spelt. This is expected to help users whose first language is not English.

Please note that an extra disk drive is required on a hard disk so the standard Amiga is insufficient to run it.

A special offer price of £29.95 inc. VAT applies to 8-Meg for the Amiga and for the PC and ST versions already available. Contact Kama on 0737 4330.

Sculpted Amiga

AN INCREASE of between 500 and 800 percent in basic key-tracing speeds is claimed for the enhanced graphics package Sculpt 300L on the Amiga.

If you wish the power toolworld upon you by Physique, this package allows you to create your own silhouette, says Martin Lewis of the Amiga Centre, Scotland. Among a host of features are segmented and cubic splines to smooth the joints of organic objects, a range of surfaces including hemispheres, mirror and metal and intersections, interface coordinates which are among graphics modes supported.

Contact the Amiga Centre Scotland on 021-257 1268.



The jiggling budget 1000 rendered mouse.



Sam Cooper, drawing 300 with the mouse on an IBM PC.

SAM develops

SOFTWARE developers keen to start creating programs for the long-awaited SAM Coupe, or to convert £300 software to take advantage of the Coupe's extra graphics and sound capabilities, will soon be advised that:

Professional software is readily written in assembly language using development systems. Programmer's Development System (PDS), the most popular, runs on PCs and comprises compilers, software tools and a special interface for the target machine. MCT are collaborating with PDS to produce the development system for the SAM Coupe. Even for use in combination with the the Jumping graphics package and will be available before the Coupe's launch.

IN BRIEF

Chartbound

BARFAUL, a new release from console-makers Sega, has shot straight into the Gallup games chart at number 2. Following an increased popularity in console games, Sega attributes their success to a string of 17 of over 40 games with an average of three in their new ones each month.

Sega's distributor Virgin Master-Trade has announced a new deal with Ocean which will mean the Master System Plus is stocked in all their branches.

Miracom up for sale

MIRCOM makes Miracom has been put into the hands of creditors with the firm owing out its troubled finances. Following the failure of a buy-out by the firm's suppliers, US Robotics, creditors Carl Gilly has been called in to administer creditors while an alternative buy-out sought. Managing Director Denis John told Popular: "We are the only people who have the approval of US Robotics and I have every confidence we will continue trading." If all transactions up to all creditors could under the administration of the receiver.

BT takes over Micronet

BRITISH Telecom has announced an increase in its holding of shares in Telecom Group, publishers of BTpress, from 40 percent to 100 percent. John Conway of the BT Management Network Services division commented: "Telecom's successful growth sets out on Miracom, Inter-Netcom, and these will form a key sector in our activities."

ST gets TEX-ed

TEX, the document processor and typesetting program designed by Donald Knuth, is now available in public domain for IBM PCs and compatibles. It is supplied on four double-sided disks for £40 per pkg from The South West Software Library, PO Box 342, Wimbomb, Dorset BH21 2YD.

Stateside

Steve Gold reports on how news from the U.S.



Apple to unveil Mac lap-top

APPLE will unveil its first laptop Macintosh (and this month at the Boston Worldwide Expo) in the U.S. The machine, which has been nicknamed Lapmac, weighs 14 to 17lb, depending on configuration and is based on a Motorola 68000 microprocessor running at 16MHz.

In its basic configuration, Lapmac will have 1MB of RAM and a single 1.44MB 3.5in. floppy drive, pricing from \$2,999 upwards. The top-of-the-range machine, with a 40MB hard disc, internal modem and as much as 8MB of RAM - a great deal for a lap-top - will cost \$4,999.

Part of the reason for the weight of the Lapmac is that it is powered by an internal lead-acid battery, just like the battery one in cars. The LCD screen, however, is thin and flat, and is a 3.5in. active matrix unit capable of resolving a full 640 monochrome screen. Other features of the Lapmac are the same number of PD ports as the standard Mac SE, with one expansion board slot and an 80-MHz Processor Direct Slot.



Never set in your lap from Apple.

the user with 11 selection buttons and the ability to load any program onto the hard disc.

Other features include a pop-up digital clock, a logging facility and a powerful macro-like body option. MS-DOS can be installed on 800-303-0000.

Super ST

Start Magazine in the U.S. is launching a world exclusive on the ST Plus, also known as the Super ST. The September issue, due at the end of this month, has an exclusive review on the machine. Details of the machine are sketchy but it is known to be des-

igns compatible with the existing ST series and has a 4,096-colour palette and eight channel stereo sound as standard features. CPU details on the ST Plus vary, depending on the series. My guess is that the machine will be 68020 microprocessor-based and will have between 1MB and 4MB of RAM. The machine will be unveiled officially during September, suggesting a U.S. Personal Computer Show unveiling on this side of the Atlantic. Pricing is unknown but Jack Trammil announced previously that the ST Plus will be priced competitively, suggesting a \$4,999 to \$6,299 price in the U.S.

PD pitch

Also in the pipeline from Atari is an ST package, *Game Maker*. The public domain package is pitched at software houses and users who want to create a rolling-demonstration of ST packages, without the fuss of running the program code proper.

Although *Game Maker* is aimed at developers for ST window displays, first reports from the U.S. suggest that some enthusiasts are using the package to grab copies and sell unauthorised protected popular software, to incorporate the code in their programs. The package could bring a whole new meaning to the clone program world. It could also spell trouble for the major games producers.

Amiga animation

Amiga users are turning to a new public domain and shareware company in the U.S., *Provider Software*. Provider has announced one of the largest U.S. collections of PD and shareware software, with the latest hot product, *Lost in Amiga*, featuring a 40-second real-time animation for the Amiga.

The three-line PD package will be \$12 but requires a full-DIB of RAM in use. Call Provider for a copy of the catalogue on 800-405-364-6666.

Key revival

Amiga owners are beginning to rediscover the Control 1 key when missing the CLI. Instead of pressing where other users command line, pressing Control 1 moves the command and the return key is pressed at the end of several lines. Thus a chain of commands can be stored for rapid execution.

The Control 1 key was detailed in early Amiga 2000 manuals, but, for some strange reason, has not been detailed for Amiga and Amiga 2000 2000 microprocessors. It would create a script file, so it seems a pity that Commodore in hiding this powerful feature from the public. Thanks to John Byrdell of the Amiga Today on-line newsletter for this long-but very useful tip.

SHOWTIME

SEPTEMBER 27 - OCT. 1 The Personal Computer Show

Earls Court, London
Organiser: MIB/Build
Tel: 01-494 1950
Nearest tube: Earls Court

OCTOBER 4 - 6 International Desktop Publishing Show

London Arena, Docklands, London
Tickets by prior application only
Organiser: Database Exhibitions
Tel: 071-5203 4700/071
Nearest tube: Cross Harbour (Docklands Light Railway)

NOVEMBER 1 - 4 MacUser Show

Olympia, London
Organiser: MIB/Build
Tel: 01-494 1951
Nearest tube: Olympia

NOVEMBER 7 - 9 Computer Graphics '89

Macedonia Palace, London
Organiser: EMB/IBM Online
Tel: 01-844 0460 ext. 294
Nearest tube: Wood Green

NOVEMBER 11 Alternative Micro Show and Electronics Fair

Bingley Hall, Staffordshire Show Ground
Organiser: Torus Computer Systems
Tel: 0473 622440
Nearest station: Stafford St

NOVEMBER 24 - 26 Computer Shopper Show

Macedonia Palace, London
Organiser: Database Exhibitions
Tel: 0222 877966
Nearest tube: Wood Green



The Control 1 key on your Amiga has hidden secrets.

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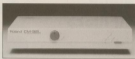
Telephone: 01-278 6622

**8 HERBRAND STREET
LONDON WC1**

Supersonic games on the way

STAND BY for some of the most awesome sounds ever produced by a computer game. One of the world's leading synthesizer makers has developed a powerful sound box for use with computers and an American games producer is about to launch a range of products which will use this box to take games sounds and sound effects to new levels of sophistication and realism.

The box, devised by the Japanese electronic music giant Roland, comes in several versions. One, the CM5 CM52, is based on the company's popular MT-32 stereo synthesizer module. It offers up to 32 simultaneous notes using eight different musical sounds taken from a range of 120 and a rhythm section. For the computer model, a chip with 32 sampled sound effects including



Roland's music box with digital section and 120 sets organ.

gunshots, car engines and screams has been added.

Another version, the 6445 CM52P, is based on Roland's S-110 sample-playing module and comes with 64 high-quality sampled sounds built in. Extra sounds are available on plug-in memory cards. A third module, the 6789 CM54-64, is a combination of the first two.

The modules can be driven by any computer using a MIDI interface. For IBM PCs and compatibles, a \$279 card version of the CM-321 will be available. A MIDI interface will add 179 to the price.

George Thoms, manager of Roland's new computer division, says the modules are aimed at computer hobbyists who are put off by the complexities of MIDI. In

the next few months, Roland will be launching a series of easy-to-use programs including sequencers and sound editors to go with the modules.

"The idea will be to treat music as a game," explains Thoms. Roland plans to market programs for the Atari ST, the Apple Macintosh and MS-DOS machines. Software prices have not been finalised but are likely to be in the range £100-£200.

The modules will also be supported by several games to be released in coming months by the American software house Sierra. The games, for the ST, Amiga and PC, include the integrative adventure Space Quest III which will have a soundtrack written by Supertramp drummer Bob Siebenberg. The programs will be distributed by Activision.

Warning signs for games loaders?

PRESSURE is mounting on the software industry for it to voluntarily place anti-piracy notices on the front loading screens of all games.

Following a meeting between the Federation Against Software Theft (FAST), copy protection software house Speedlock and duplication house Reflex Microfilm, representatives are to be made to ELISA, the European Leisure Software Publishers Association to get duplicate packers like warnings placed on software loaders.

David Linder, a director of Speedlock, told Popular Computing Weekly that while nobody expects the message

to have a great effect on large scale piracy, the idea is "to reinforce the legal position of software houses when taking legal action against pirates."

By informing users that it costs and distribute the software is illegal, the "I don't know it wasn't allowed" defence crumbles immediately.

Andrew Horrocks, chairman of ELISA, has yet to hear from FAST: "We've made no official moves on piracy at all yet - we're waiting to hear from FAST; the ball is in their court."

★ Do you want to be reminded of your copy each time you boot a game? Write and tell us: address@compuser.com.

Blitzed!

Copy protection writers Speedlock claim they have written an Atari ST protection routine which disables the Power Computing Blitz copier - and possibly many other devices. David Andrew-Jones, co-founder of the firm, told Popular Computing Weekly: "We've taken a close look at the Blitz and found that, along with other versions of the module, we can stop programs being copied to this." Speedlock's discs include Microgame, all future ST games and Microgame will not succumb to copying with a Blitz device. Andrew-Jones hopes to be able to think out of copiers soon. Speedlock is on 0744-476363.

The law on copying

THE COPYRIGHT DESIGNS AND PATENTS ACT 1988

Part 1, Paragraph 107 Section 2

(1) A person commits an offence who -

(i) makes an article specifically designed or adapted for making copies of a particular copyright work, or

(ii) has such an article in his possession,

knowing or having reason to believe that it is to be used to make infringing copies for sale or hire or for use in the course of business.

Being a test case is banned, the 1988 Act is open to interpretation and the legality of copying software remains unclear.

POPULAR COMMENT

"If any devoted PC dealer want to get in touch with us we're ready to talk business." Is this a devoted Commodore marketing message, Jeff Bell, deputy general of the thought office tech head and problems, and the results they have received - see page 2 last week.

But according to dealers, Intel's troubles are not particularly good news for home computer companies like Commodore and Atari. The reason is that both firms are trying to be taken seriously as PC suppliers.

The dealer says that the real is troubling home computer companies making PCs are being taken by the back of the neck by PCMSB copiers - or perhaps the fact's obvious pleasure of Intel's problem is possession. There's that but perhaps if one consumer market player can get it wrong, so can another.

The home computer firm may have a lot of work to do to regain credibility in the PC market. Perhaps that's why Commodore is withdrawing its approach to the cheaper end of the market - see page 2.

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STAR LETTER

Lead-free in his pencil

I wholeheartedly agree with David King's criticisms regarding the environment. Yes, hobbies involving modern electronics are more environmentally friendly than some other pursuits but at what cost? Essentially, how much damage has been done to the environment in order to get to the present state-of-the-art?

Furthermore, I wonder what proportion of electronic sales are bought by serious hobbyists compared to those buying gadgets in order to 'keep up with the Jones' with no regard to the environmental cost of their manufacture.

You mention the use of an erasable pencil but what of the extra equipment used requiring more frequent replacement - at what cost is the



WRITE TO:
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Greencoat House, Francis Street,
London SW1P 1DG.

environment - perhaps even greater than using leaded pencils. I could go on...

Perhaps we should celebrate the Editorial Committee Engine first perhaps the environment may stand a chance if it's not already too late.
Paul J.R. Brown, Milton Keynes

Going loco

I have an Amstrad 6300 used for writing a book and virtually nothing else. After changing from Loco 1 to Loco 2, I met the problem of changing layouts for the insertion of operators and lines, although for my purposes only margins and type size are involved and although I can not show up, I cannot get them on to Next Layout for my 6300 time. Nor can I get back to the original layout without re-writing each.

When I worked with Loco 1 I had no such difficulty and, although I have tried to follow the Loco 2 guide, somehow or other I fall down on the process and have reached the point of giving up unless I can get some outside help.

None of the trouble is that, for my requirement, just too many options

are open. All I want is to change type size and margin, to have this layout named QUOTE (or a number), to bring it up with only one or two actions and, when completed, to get back to Next Layout with a single action. I do not want anything else, which might confuse me.

Charles Jackson, Sybil
Book layout are changed from the 10 Document set-up screen (where you change the headers, 50, over editing your TEMPLATE, 57B, press F1 and select DOCUMENTS SETUP then press F2 to select LAYOUTS. Then select CHANGE STACK LAYOUTS. The layout list will then come up choose your layout and press ENTER. Then edit the layout to your liking. With F7 you can call it QQUOTE or whatever. Then press CANCELI and go back to the template. Save it. That's it!

Lost tome

Some time ago I purchased Decision Maker from Trippett Publishing Limited, from their BrainPower Application Through Learning series. Unfortunately I have lost the book that accompanied the program and find I am unable to run the program without it.

I have been in touch with Trippett but they say they no longer handle this range so they cannot be of any assistance to me.

I am hoping that perhaps one of your readers could put me in touch with someone who could supply me with the book I need to run the program.

E. Strappella, 25 East Avenue,
Balfour Estate, North Shields,
Tyne and Wear NE22 7JL.



Just say no

This week, after many months of trying to get rid of viruses called SOA and its brethren from my collection, I succeeded. Now, another more prolific virus has turned its ugly head! Has anyone heard of Lazarus? If you have, what can I do to kill it? I can quite honestly say that I possess

no pirated software - I caught SOA from a borrowed disc, so beware. Nor have I tried to hack my way into any games. I'm not clever enough to do that! I do not own any F.D. software, so I cannot understand how I have acquired it.

I have a suspicion that it could be the efforts of a software protection program, that has broken out somehow, as a quick look at the disc in workbench revealed it as Lazarus and not SOA, and this happened after it had crashed and ceased to load any more. I tried two virus killers on it and subsequent files that went the same way, but to no avail. Antivirus helped in revealing that all cylinders were dead. Even on both sides and now they all read "unreadable" with corrupted files.

My latest game, P.S.P., has died after only two days and is now recreated Lazarus. It's the last item. I have created all progress on my Amiga 500 until I can do something to cure this evil. Can anyone help?
P. Blawieck, London SW20

No profit

I would like to tell readers that the CPW & MSDOS Users' Group has published Volume One of its MSDOS Software Library Catalogue. This volume covers the 10 MSDOS Library, the PC-Free Library, Disk-Bug Software, and ALICE Publishing's 1 CD-ROM.

All this software is now available to members of this group for details of catalogue and of membership, please contact Neil Dixon, Postbox 67, 71 Hill Road, Basing, Dorset.

Ken DSG TEL

Volume Two, The PC-DOS Library is at present only available on disc (also from Illinois).

The group is a non-profit making members' club, and in addition to its software library, it publishes a journal, runs a book lending library, and provides a bulletin board on Windows 3.11 600386. The protocol is 5.04, no parity, full duplex, with automatic selection of baud rate. Much of the software is available via the bulletin board.

J.S. Laidlaw, Oxford

Euclidian geometry group

I am writing to inform you of a new user group which has been formed to support users of the Archimedes 3D design program, Euclid.

"Euclid", as the group is known, will, for an annual subscription of £10, provide a quarterly newsletter including Euclid files, utilities, hints and tips, letters in the form of a diary.

The first issue will be available in October, then January, April and July.

Members will be encouraged to exchange ideas and material through the group in order to increase the effective use of both Euclid and the Archimedes.

Further membership details are available from Euclid's authors, Arc Computers, on 0251 92255.

Richard Holman, Electronic Organist.

Lines on Popular

It's made the choice to stand in the garden

Rolling the stretch of rotting clouds

The brown, earthy patch was laden with wire.

SOA sticks of steel and white DOS wire.

Why is it burning like Grandma's fire?

It was a disaster that truly red legged never really served his glories of Trippet, his spare full of silver vegetables and grass, his array of games and turbo-techno, back boy fighters, his companion for computers and his pedestrian arena.

Oh let be then of war!

More and more red could ever be granted

To be reading

Popular! Popular! Oh to be Popular!

Samuel Plimsoll,
Plimsoll

Who runs computers? What kind of person is it who spends half their lives clustered in a dark room with a pile of machinery? Turn off to discover Spectrum owners are identified by being young and hormonal, or old and still tinkering with the machine they bought when Sir Clive Sinclair created the low-cost computing market. Spectrum owners frequently have students. Spectrum computer stores are now five-for-all jungle sales.

Connectix 84 fell back worried, haggard and desperate. They look worried because they realize that the OS4 is seriously underpowered compared to big



The Mystery of the Money.

big computers and despite advertisements of postwar obtaining declassification services the sad truth is that it is getting worse.

They look haggard because of the time spent waiting for software to load. Amey's Finance website and the bare table is in fact

HOT LINES

algebraical - both animals were really Commodore peripherals. Commodore 84 owners are desperate to upgrade but the DTP advertisement is still printing out.

The average Amiga owner is the computing type at the local computer club. He ditched his 8-bit system only last Christmas but is desperate to coordinate that he has had 10-15 power for years. Amiga shows are worldly affairs, often attended by wives, where the grown-ups talk about vertical markets, how products is transforming their lives, and try to conceal the stinkiness when they start playing the latest game converted from the ST.

If your 8-bit owner rates Label and the Amiga owners are true blue, your ST owner is the one who has the power and does what he likes. This means enjoying games, a spot of WF, a dab of DTP, ST owners tend to be the common risk but after paying £2495 for



William Tell sold in Comshare.

games they are now serious bowlers.

Now for something useful. Crowder, the legend of William Tell, is coming from Screen 7 and there is a picture of it on this page. It is all about evasion and William's determination to stamp out evil, rescue his son and find the land heaves. Load it into your ST, Amiga, PC, OS4, Spectrum, CPC and put the Tolkachevsky album on the turntable.

He is a man with a mission, a man determined to stamp out the evil of drug trafficking. He has

already won Death Wish 4, another all-format release from Screen 7, coming soon, called Fallen Angel!

Arctonic has a new driving game coming - check the picture - which is a kind of Lombard RAC Rally without the Lombard RAC. It looks satisfactory and features a world championship and gives you the chance to drive a Super Eagle scoring 50000 points per car. It retails at £19.99.

Bad news now. The fifth land-scape in the Populous expansion disc has been changed from being red land to The Big Plains.

Mystery of the Money is a new release from Rainbow Arts and has digitised eight true pictures and music all over the place. It



Mystery - a legal way to drive drunk.

is your task to sort it all out and unravel the mystery in this little spy adventure, available on OS4 disc, ST, Amiga and PC any day now.

Duncan Evans

PREVIEW

Program: Finnish Freddy's Big Top 'o Fun

Version: Amiga, ST, PC
Price: Amiga, ST £29.99;
PC £34.99

Supplier: Mindcage
Reviewer: Andrew Banner

RELEASE DATES

Amiga: September
ST: September
PC: September

Just how many events games can you stand? We have got *Summer Games*, *Winter Games*, *California Games* and even *Coverman Lightyspyre* and I am going mad.

The computer scene has been swamped with these type of games but *Finnish Freddy's Big Top 'o Fun* from Mindcage is an exception. Fortunately for all of us this latest offering is very different.

As the name suggests, the game takes place under the big top and is full of humour. The circus needs to raise \$10,000 in one night to repay an overdue loan. If you fail to find the money,

you lose your circus. To raise money, you need to perform six traditional circus acts. They include the high wire walker, trapeze artist, high diving into ever-diminishing water tubs and the human cannonball.

At the end of the event you are judged by a panel of humorous clown characters, who will award a sum of money according to



The judges table.

how well you performed in the last event.

Of course, the whole idea of the circus is to get everybody laughing with the slapstick humour so many love and this is exactly what Finnish Freddy does. The judges also employ this laughter method and attack each other constantly. They also change their facial



Finnish Freddy's Big top 'o' water.

expressions to match their opinions of the past performance.

The lean sharks do not want to see the circus survive and have sent a bully boy - Finnish Freddy - to sort you out. Freddy will appear during the event and perform some Finnish trick to try to hamper your progress.

It all adds up to plenty of fun and unlike most other games of this kind, you will never master it or get fed up with it. The more you play it, the more you will discover and the more you will laugh.

Finnish Freddy's Big Top 'o Fun will be released on the Amiga, ST and PC in September with 8-bit versions to follow later in the year.

F A X B O X

Program: *The New Zealand Story*
Version: Amiga
Price: £24.99
Supplier: Ocean
Reviewer: Adrian Pumphey

RELEASE DATES

ST: Out now
Amiga: Out now
Spectrum: Out now
Amstrad: Out now

The title of the game did not prepare me for the sight I received upon booting up this game. I have seen some strange heroes in my time but a laser-toting Kiwi wearing boomer boots? I ask you.

The game does not take long to transition from the sublime to the ridiculous, and every second of the transformation is a sheer delight. The plot is brief and bizarre. A psychotic walrus with a taste for Kiwi has 20 of your friends trapped and lined up for lunch. Escaping from the zoo you set forth with your trusty bow to wreck a

little havoc. The landscape is constructed with a series of platforms inhabited with some very strange characters. In the early stages the common foes are the hermit crab who pops in and out of its shell and throws huge spiked balls and rodents along the platforms.

Next comes the booming being spiders and something small and furry with pointed ears. While these creatures guard the landward approach to your captured friends the skies are filled with some even stranger sights. These range from bomb dropping bats to owls mounted on ducks, very strange indeed.

With a well placed shot our fearless



• Wally Walrus is a gradee hog.

hero can steal these airborne transporters to take the battle to the skies. And if all this was not enough Kiwi can don a snorkel and enter the briny depths.

The strength of this program lies in its speed—it can take as little as 15 seconds to complete a level—in its variety, the sheer weirdness of the monsters and its mixture of cuteness and violence. The bow may not sound very violent but it can be upgraded to more deadliest weapons—and they certainly will be needed when you meet some of the walrus' larger friends.



F A X B O X

Program: *Alien Legion*
Version: Amiga
Price: £24.99
Supplier: Gaimstar
Reviewer: Adrian Pumphey

RELEASE DATES

Amiga: Out Now

Once more the plot is minimal. The Earth has been enslaved and as the lone surviving hero it is your task to introduce the aliens to the finer points of burning laser beams. Before you start this guided tour of war-torn Earth ensure you have an auto-fire on your joystick. A constant stream of laser beams is not only desired but essential.

Your character, Captain Cosmos, can catch a few bullets in his teeth before expiring but nothing grinds down the energy more than turning into an alien you should have destroyed.

Occasionally when you terminate an alien a flask is seen floating upwards. If the flask is green, contact with it replenishes lost energy; conversely a red flask removes energy. That can be a little tricky if you kill an alien when it is alive on top of you, as the resulting flask passes through your character before you see its colour. It is bad news

if it is a red flask. The aliens may be small but they get up to all kinds of tricks. Most attack on foot, cannon-fodder style but other more wily bug-eyed monsters ride anything from contraptions better suited to a farmer's field to the latest in fighter technology.

Apart from the creatures which move on two legs, commonly known as bipeds, there are beetles like the fly, hover and creep. They include everything from abstract ships to blinking eyes.

Although the shooting element is crucial the main emphasis is on platforms. Leaping from level to level vertically is satisfactory, as long as you turn off your auto-fire first but leaping across gaps can be a real pain. You have two lengths of jump. Selection between



• Easter egg in space.



• Be careful—this green eye and a bit of lead piping doesn't fool me.

the two depends on how long you hold the joystick in the jumping position. Unfortunately in heated moments you tend to go for the short jump when you need a long jump, thus ending up in the dirt. This is nothing outstandingly good or bad about this game.



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F A X B O X

Galvadius: 73%
 Price: £24.95
Altered Beast: 42%
 Price: £24.95
Time Soldiers: 89%
 Price: £24.95
 Reviewer: Duncan Evans

C O N T A C T S

Virgin Mastertronic
 Telephone: 01-727 8076.

Good news for Sega fans is that Virgin Mastertronic, the company responsible for UK marketing, has unveiled a plethora of games on to the market. In this first article we look at *Galvadius*, *Altered Beast* and *Time Soldiers*.

I have no idea why the first game is called *Galvadius*, since it is all about the kingdom of Alst, a drought, a princess who goes missing, the king retiring to his deathbed and the adventures of a youth called something or other. You play that youth, on the quest for the herb to save the king, to find the princess and save the kingdom from the water shortage.

To kick off you have smooth sideways scrolling, with little furry animals gently wandering up to you. You chop them to little furry bits with your sword. That is easy enough and before you know it you are out and on to the second section. Trapped in a valley of your own making, or something like that, we go to command-style perspective, with four-way scrolling and four-way sword play, which is irritating since there are eight-



• *Time Soldiers* - stalking through the undergrowth excising those commando beetles.



• *Galvadius* - a search for the life giving herb.

way monsters. Pop into the little holes scattered around, suffer some cute graphics of something small and furry and

you have had one drink too many. You are lying dead drunk and some old mystic says rise from the grave and rescue my daughter and you follow the blobs. These guys attacking you look as if they have just got out of the ground; and that tiger? Surely that is Mrs Jones' Nibbles from down the road. Dear me, even all the characters are flashing and everything seems to be happening in slow motion.

Alternatively you could play *Altered Beast* because exactly the same thing happens, except that you do not have a hangover in the morning - only the black despair at having wasted money on this poor effort.

Time Soldiers was much more to our liking. It is all about shooting your way through the various ages of time while hunting for your trapped comrades in the war against someone unpleasant. It is Commando time, with vertically-scrolling shooting action, loads of enemies, all tailored to the particular age, throwing all sorts at you.

You half disappear in the bushes and slide down; you are armed with a pseudoing bazooka and can pick up extra weapons along the way.

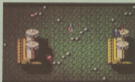
Just well that alligator or prehistoric man and a rocket launcher appears; or a three-way gun or plasma weapon. It just shows those primitives were more advanced than you think.

There are plenty of time zones and on some of them the action switches so that you are scrolling horizontally.

At the end of each level there is a particularly nasty guardian - particularly large as well.

Great graphics, plenty of inventive touches, tough gameplay and satisfying amounts of violence.

Time Soldiers was certainly my pick of this bunch.



• *Altered Beast* - or the cat's been at the durbin again.

usually helpful, then cut hacking again, until you have collected seven crystals, whence the gate to the valley of Galvadius opens and you are off again. It has average gameplay but pleasant graphics and reasonable sound.

You may know what it is like when

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CD Connection

You have seen the games and now Duncan Evans meets the interface to revolutionise your CD system and C64.

There is no denying that CD technology is all the rage at the moment but with machines like the PC Engine, and computers like Microsoft producing *Demolition of the Crown* on CD for PCs leading the way, what Rainbow Arts is about to launch on to the computing public is rather surprising.

There is a telephone socket on the circuit board and it is used to connect the interface to the LINE-outs on the back of the CD player - or the left or right channel if there is not a specific LINE-out socket.

A word of caution. I tried using my portable Sony Discman but, even with full volume, not even the music would load. If you have a portable try it check in the shop that it will work before you buy.

The full-size Sanyo had no trouble about interfacing with the C64, though, and after typing LOAD, the music loaded from the spinning disc in about 40 seconds.

The menu offers 10 games and after selecting one with the cursor keys - joystick use should have been an option - you are given a track number to jump to on the CD-player. Once that is accomplished, press the speaker and the game

talks around six-and-a-half minutes, with less than one minute for the original menu, so we are talking 10 minutes of program. That is not exactly equating the new technology, is it?

As an added treat there are seven tracks of the fabulous musical talent of Chris Bullock, a kind of German David Whitaker, which can be played through your speakers like a regular CD. The computer tunes, to which you listen once only, take another 30 minutes. It says there are 10 of them - in the manual and on the box - but there are not.

So for what you have is a moderately quick - compared to tape - alternative method of loading programs. Except that you can only read from the CD - you cannot save anything on to it, so it has to be treated as nothing except a novel way to load programs.

Then you look at the games. You get Janiff's *Mighty Magic* (jinxed), *Leatherhead*, *Minion*, *Elephant*, *Impossible Mission*, *Dragon*, *Andromeda*, *Invincible Man*, *Jinks*, *M.U.L.E* and *POW* II. Apart from *Elephant*, which was a Rainbow Arts game anyway, the rest of the collection is preferable, the worst dating from 1988.

It is at this juncture that you realize that Rainbow Arts has not every corner and every road imaginable. What you are paying for is a novel way to load 10 old games - and not particularly fun - then a piece of 10-5 which may need to be changed round the room before you can connect it. Only if you had a CD player, did not have a disc drive or any of those games and wanted a collection of semi-classics could this strange concept be worth paying for. □



• Above: Paul (at Rainbow), the interface releases one C64/PC.

• Right: Four CD-roms of 10, but the games are all Rainbow Arts.

the CD interface is a package which offers 10 games on a standard CD, a fairly clear instruction manual and a 25-pin, 17 pin, interface, all for the Commodore-64. All you have to supply is a very standard lead and a reasonably expensive compact disc player.

The concept behind the package from the West German company more than fits the Demarcus than any hardware addition is that, if you have a C64 but not a disc drive and are looking for faster data access, or faster-loading games in this case, all you have to do is plug the interface into the cassette port of the computer and connect it to an ordinary compact disc player.

It is a strange thing really. I know of very few people who have a C64 and no disc drive but can afford a CD player. Perhaps this package is aimed at someone (living at home who can borrow their parents' player).

You can get to grips with this bizarre concept by plugging in the very fast-loading interface. It is not listed, so dropping the C64 on the floor with it inserted is likely to lead to a healthy

of your disc drive tracks in 30-60 seconds.

If there are loading difficulties, try the other channel as the programs are recorded on both. If that does not work you can add 30 to the track number - all 10 programs are recorded twice.

If you are thinking I have a disc drive anyway but I have a CD player and this sounds like a cool idea, let me tell you why it is not.

For one thing you are not exactly getting a CD check a block with code. Both blocks of program

CONTACTS

1st CD Edition
Rainbow Arts
Contact: Barrington Harvey
Price: circa £29; to be confirmed
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Sir Clive speaks

Sir Clive Sinclair, latter-day computer genius, speaks in a rare interview to *Popular Computing Weekly*. Undeterred by the C5 flop, we find he has plans for two-wheels in his empire. Words by Leslie Bunder, pictures by Steve Coward.



Since forming his first company, Sinclair Radionics, in 1961, Sir Clive Sinclair has probably invented more ground-breaking electronics goods than any other individual. From radios to wristwatches and computers to cars, it can be said that Sir Clive is a man who has been there, seen it and done it. His quest for introducing something new and different often can reach the obscurity stage, like his 20-year quest for perfection in producing a pocket television set.

Even now, despite the financial failure of the C5 vehicle and the butt of many jokes, Sir Clive is still working on C10 and C15 vehicles which some day will make it on to the production lines and hopefully on to the roads.

It seems probable that it is this obsession which makes Sir Clive tick. He is a man concerned that his products should reach as many people as possible and be of benefit

"I have a hell of a lot I want to do and I see myself at the beginning rather than the end"

to the whole of society. One has only to look at what Sir Clive has produced and you can see clearly that his products are non-elitist. The calculator, computers and car were all much cheaper than anything else on the market and had mass appeal.

Sir Clive is not a man who copies, he took on the Japanese and Americans at their own game and won. It was because of that and his contribution to society that in 1983, at 51, Clive Martin Sinclair was knighted, due recognition for a man who created a multi-million pound industry and that does not even refer to the hardware.

Without the name Sinclair, the software games giants of Games, Mastertronic, Elite would not have enjoyed their massive success. Even the computer publishing industry owes its due to Sir Clive, with three magazines bearing his name as their title.

With Sir Clive's no-hills approach to competing, he also allowed companies to make such added extras as joystick,



◆ SWEET keyboards and many other items for his range of machines. In short, he allowed others to create businesses via the products he produced.

Sir Clive is not generally known as a man who seeks publicity. It is several years since he spoke to *Popular Computing Weekly* or anyone else at length, as the following interview will show.

Pop: It is now almost 10 years since the ZX-80 appeared, did you think home computing would be as big as it has become?

Sinclair: Not quite as popular. I certainly hoped it would be a big thing and hoped it

"I am developing this bicycle . . . The purpose is that when you arrive at your flat, office or underground station, you can fold it instantly so that you can take it in — rather like an umbrella"

would be something which captured public imagination. We set out to try to sell to the general public, as opposed to just the enthusiasts around at the time. It grew much bigger than we hoped.

Pop: Of all the computers you have released, which is your favourite?

Sinclair: I think, in a way, the ZX-81 was a good little machine. I am very pleased with the ZX-80. I tend always to look forward to the next machine rather than look back.

Pop: How is progress on walk and fold integration?

Sinclair: It is coming along well. It will still be a large memory drive and the initial sales will be to the large computer manufacturers. It is still going to plan.

Pop: Can you outline plans for a powerful processing device we gather you are designing?

Sinclair: That work is broadly secret so we cannot say much about it, but it would be foolish to deny it.

Pop: With Amib, Pds and Pcpnet releasing very lightweight pocket PCs, is this an area into which you have plans to move?

Sinclair: Very much so. I do not see the logic behind these machines. The concept, or suggestion, is that they are PC-compatible. Well, they are simply not, because it is very important to realise what PC compatibility really means. It means for



Clive Sinclair has revolutionised the world of electronics, from calculators to video games.

computing. I do not even play games myself.

Pop: What is happening with the portable telephones?

Sinclair: Sinclair Research formed a company called Shay Communications and the work is now completed. The product is now in production and will soon be on the market and Shay has since teamed with Motorola and Honey to be one of the licensors for the telepoint system. The telephone should be a personal object like the calculator and will be priced at £150.

Pop: You once had plans for a Stock Market Station. Do you have plans to pursue this idea again?

Sinclair: We have no plans at the moment. I do not rate it too but it is much more complicated because Sinclair Research has moved its technology out to several companies it funded — Anamarta, Shay, Cambridge Computers — and they might or might not go public and Sinclair Research might or might not go public on its own.



The ZX-80 — brought top-edge to the masses, but Sinclair remains the visionary.

the customer total compatibility, that is to say, it must have a proper keyboard, a proper display and, in my opinion, it must have a drive. If you remove any of those or compromise on any of those the thing ceases to be compatible and you might as well go the whole hog. I cannot see the point of these products. I may be missing something, I do not say they will not sell, no doubt they will in some degree.

Pop: Do you use a 246 when you do business?

Sinclair: I do not, but then I do not use computers much anyway. I do not type and do not have a computer at home. I use a pen and calculator.

Pop: With so many games appearing on the Spectrum, do you play any?

Sinclair: No, not at all. We realised people would play games with them; the principal aim behind the machines was to introduce people to the art and science of

Pop: Will 1991 benefit British computer companies and yourself?

Sinclair: Broadly anything which opens the barriers helps but whether the barriers will come down in that area we will have to wait and see. Clearly we still have to do special keyboards for different countries. I do not see that changing. I think it is a

"I think the next generation will have computers in the home which are highly intelligent and start to give advice to people"

"I do not think it is a question of curbing the power of the computer, it is a question of how it uses its power"

psychological benefit but in practice I am not sure there will be a big change. I am concerned about the protectionism that seems to be creeping into Europe. I am worried about Europe setting up tariffs against chips coming into Europe. What I foresee is that companies in Europe might be at a greater commercial disadvantage than companies outside Europe because the Common Market might have insisted on very high prices for memory chips, the example to try and protect the internal



And it's only just begun. Hans member insists will have a few things up his sleeve.

industry which will mess up the computer manufacturers.

Page: Do you have plans to move into the development of CD-ROM?

Stclair: No, I think the application is very limited and they have been over-hyped. It has much to offer games if it is cleverly used.

Page: Would you ever consider releasing a hand-held games machine?

Stclair: I am not really so interested in games. I see the appeal but that is not the

field we are in. If we could see a way of doing something dramatic, and we have looked at that in the past, we would do it. We are interested only if we can do something radical in the engineering side. We are interested in technical frontiers and breaking new ground and if that happens to be in the games area, we will do it. The games area does not offer us that opportunity at the moment.

Page: How your views on competing changed through the years?

Stclair: No, I think it is going the way I see it going. I think we are getting close to the days when students will all be carrying computers because the I-88 is being used a great deal by students for that purpose. That will change computer literacy greatly. From that will emerge a nation of people who are completely familiar with computers and I think the next generation will have computers in the home which are highly intelligent and start to give advice to people.

Page: Is it safe for computers to start forming intelligence?

Stclair: Nothing is without its risks and I think that has plenty of risks but it is a question of getting it right. I do not think it is a question of curbing the power of the computer; it is a question of how it uses its power.

Page: Do you still have ambitions?

Stclair: Absolutely. I have a hell of a lot I want to do and I see myself at the beginning rather than the end. There are two areas which concern me most and they are very long term products - artificial intelligence, for which I mean machines which really do rival human beings and electrical vehicles.

Page: Regarding artificial intelligence, can you put morals into machines?

Stclair: Whether you call them morals or not, I do not know. I think you need to put constraints into them. It is something necessary that I will do.

Page: Have you made any decisions not to release any products through fear or worry they are too intelligent?

Stclair: I have not developed products of that kind but the day may dawn when one will have to look carefully at the consequences of products as they become more powerful. I can certainly see the day when one might regret games machines - when they become so realistic that they seem just as real as life and that people can become addicted to them as they get addicted to drugs; one would be very cautious about introducing such products.

Page: What motivates you to achieve what you have achieved?

Stclair: Well, entirely the desire to change the world in a small way, to bring out products which will make people's lives more interesting or more useful. The pocket calculator was just a tremendous thing for

people to have; so too the personal computer and I feel passionate about the portable computer. I want to produce new kinds of products which will change people's lives for the better. The home computer is a clear example of how it could enrich people's lives and now I am developing this bicycle.

Page: Bicycle. It does not sound very electronic, can you further expand?

Stclair: The idea is very simple. It is the best way to get around town but a very inconvenient object when you arrive. If you can solve the inconvenience when you arrive, you have a very exciting product, so I'm working on that. It will be a portable bicycle. It will not be electronic and it will be two years before it appears because it is a very big job. To do it you have to use radical materials and have a radical design. The purpose is that when you arrive at your flat, office or underground station you can then fold it instantly so that you can take it in - rather like an umbrella. It must be dramatically lighter than a normal bike - and the lightest bikes have been the same weight for 100 years.

Page: How do you feel on reflection about your portable TV?

Stclair: Perfectly sound product. We thought there would be a large market for such a product and so did the Japanese but the world market is still very small.

Page: Can you give any sneak peeks of products you have in mind?

Stclair: The main thing on which we are working is a PC-compatible portable. It is

"I can certainly see the day when one might regret games machines - when they become so realistic that they seem just as real as life and that people can become addicted to them as they are addicted to drugs"

some way off and not in the same category as the I-88 and also the very advanced computer chip about which we cannot talk now.

Page: Aside from Honda, do you have any other hobbies or interests?

Stclair: Yes, I am very interested in music, reading, poetry and mathematics. □

LANCASTER

A black and white photograph of a Lancaster bomber in flight, viewed from a low angle. The aircraft is silhouetted against a bright, hazy sky. The ground below is a flat, open landscape, possibly a field or tundra, with some faint tracks or paths visible. The overall tone is historical and dramatic.

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Stopwatch

Steve Carter

WHEN developing a program, in most cases speed of operation is a very important factor in its success or otherwise. How do you establish the fastest way of writing a routine you think may be running too slow?

I developed this routine *Stopwatch* to use the internal clock so that I could make

alterations to a program and see the effect on the time it took to run. It is a sub-program so that none of the variables in the routine will clash with the main program when it is turned on to the end. The two variables which must be placed in the main program have long names so that it is most unlikely that they will clash with any others. To use it, add it to the end of your program and put:

```
FirstTime%=TIMER:FirstDate%=DATE%
at the start of the section you want to time
```

and

```
SecondTime%=TIMER:SecondDate%=DATE%
at the end, followed by the call to the sub-program.
```

The program will cope with timing a program over several weeks but if the internal clock should go into the next month your results will be incorrect, so if the timing is to go into the next month, re-set the internal clock to, say, the first of the month. □

```
REM -----
REM          DEMONSTRATION OF 'STOPWATCH' TIMING SUB-PROGRAM
REM -----
REM by STEVE CARTER December 1988
CLS
PRINT "DEMONSTRATION OF USING 'STOPWATCH' SUB-PROGRAM"
PRINT " Time of starting = %TIMER"
PRINT " PRESS a KEY TO END THE PROGRAM"
Start:
FirstTime%=TIMER: FirstDate%=DATE% 'Get the time of start
WHILE INKEY$="" :GOTO 'PUT YOUR PROGRAM HERE
SecondTime%=TIMER:SecondDate%=DATE% 'Get the time of finish
REM *** call sub-program with arguments of ***
REM *** start time & date and finish time & date ***
CALL stopwatch:FirstTime%,FirstDate%,SecondTime%,SecondDate%:
END

REM -----
SUB stopwatch(First$,Day$,Last$,Day2$) STATIC
REM ***** CONVERT FIRST-TIME TO SECONDS *****
hrs=VAL/MID$(First$,1,2)
mins=VAL/MID$(First$,4,2)
secs=VAL/MID$(First$,7,2)
firstval=(hrs*3600) + (mins*60) + secs
REM ***** CONVERT SECOND-TIME TO SECONDS *****
hrs=VAL/MID$(Last$,1,2)
mins=VAL/MID$(Last$,4,2)
secs=VAL/MID$(Last$,7,2)
secondval=(hrs*3600) + (mins*60) + secs
REM IF-TIMING PASSES MIDNIGHT ADD 24hrs TO SECOND-TIME
Weekdays=VAL(MID$(Day2$,4,2))-VAL(MID$(Day$,4,2))
IF Weekdays>0 THEN secondval=secondval+Weekdays*86400
REM DEDUCT FIRST FROM SECOND AND CONVERT BACK
elapsedtime=secondval-firstval
hrs = INT(elapsedtime/3600)
hour$ = STR$(INT(elapsedtime/3600))
mins = INT(elapsedtime/60)-hrs*60
minute$ = STR$(mins)
secs = elapsedtime-(INT(elapsedtime/60)*60)
Second$ = STR$(secs)
REM          ***** PRINT RESULTS *****
PRINT " Start time = %:First$
PRINT " Finish time = %:Last$
PRINT " Elapsed TIME = %hour%; " hours;"
PRINT minute%; " mins. %:Second%; " seconds."
END SUB
```


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A day at the Beeb

Duncan Evans joins the resilient species of micro owners at Ally Pally for the BBC Show.

If owners start to look like their dogs there is a good case for computer users adopting the traits of their machines. At the BBC Show at Alexandra Palace that was very evident. One-leaving fathers and confused mothers led several-type BBC Micro/aster-wearing teenagers round the thirty-attended stalls, packs of Archimedes owners, looking for a spreadsheet package to work out when they would pay off the loan they took to buy the machine were everywhere.

The BBC may be exhibited and dead as far as mainstream computing goes but that never seems to worry Mum and Dad as they avoid admitting that the machine they bought to educate Johnny was used only for playing *Ballistic* by Imagination and the *Claris Micro* stand.

So far as the show was concerned the BBC was not dead but with only *Standard Computer Concepts* and *Superior* showed any real commitment. There were not many stalls left to hang into the coffee. It was the day of Archimedes but not in a manner likely to launch it into the computing mainstream.

First bit in our what was an office for the BBC, Wight-Silverdale - 01-255 8899 - was getting excited about *Signature* and its very impressive

range of fonts for producing display lettering for £29.95 - and £49.95 on the Archimedes. *Topologica*, based on released and new adventures, has gone green with a range of booklets, tapes, records and, of course, computer programs dedicated to whales, with assistance from a member of Friends of the Earth, you should telephone *Topologica* on 0732 244992 for details if you want your children to know about the greatest of mammals.

Substantial

New labelling software, *Box* (from Newsoft - 01-267 2642) - costed The Fancy Labeller and retails at £19.95 for the BBC B and *Waster* £28 and £17.99 on the Archimedes. If you fancy something a little more substantial you could try the Permanent Memory Systems - 02042 22798 - The Publisher which claims to be a no nonsense DTP package for the entire BBC range at £39

plus VAT and £3 carriage. Compatible with *Flow*, *John-Moreland* *Workfile*. It offers 30 fonts, 748 was also selling its last few *Genie* and *Genie Junior* Personal Organiser £298.

Topical

Perhaps the biggest splash for BBC owners was made by *Impact Software* - 0899 044334. *Impact* showed extra courses for its *Leadership* class, *Boled Our* - topical, because *Black Cat* was the Open Championship in the same week - and also a new football game.

Image resolution being 2048x11. Availability is late 1990 and pricing is expected to be less than £200.

Something of a challenge was offered by the *Archie Videographics* *Expansive Card 6524x2* which offers real-time colour digitising, grabbing frames at 1700x of a screen and using its own display system to produce 1,500-colours for the finished image which can be used with most art packages. Contact *Vision Electronics Ltd* on 0942 882222 for details.

To suggest the power of the Archimedes you could always buy most of the things in the *Mail Computer* - 0622

20245 - catalogue. Internal hard drives from £299 (20MB) to £465 (40MB, 20MB) and external drives from £349 (20MB) to £799 (40MB). If you want to see these Micro models you need a multi-user monitor - £1,495 for a 20in. screen, then you can play *Where Beasts*, in other words *Beastzone*, for only £14.95.

For word processing with extra activities like database search, data entry and spreadsheet generation, *Premier* from *Circle Software* sounds a good choice. The price is £99 plus VAT. Contact 0793 770811. Or you might like to try *Impressio*



Established as an educational show, BBC was an off-say some impressive software.

Archie Soccer is a *Microprose SoccerKick* off derivative featuring overhead action and a World Cup in which to compete.

Superior Software has the *Screen* in the *Program* *Ballistic* and is showcasing its own version of *Kick Off*, which should be available as soon as programming is finished.

Back to the real world with *Click*, a *Master* cartridge from *Hyper-Computers* - 0777 110380 - enabling the user to see names, occupations, sizes, abilities and various functions.

Probably the most striking aspect of the show were the graphics and real-time digitisers for the Archimedes. *Wild Vision* - 061 282491 - had a large section of hardware items for the Archimedes, including the *Chrom 200* series of video overlay and graphics cards. One of the most impressive things at the show was the *Rank 70* real-time colour digitiser. Images are displayed in any Archimedes 24-bit colour mode, with the

from *Computer Concepts*. It is powerful yet easy to use, drawing on *Concepts* experience of producing word processors for the BBC.

Average

Archimedes games are a little light relief - a joke some might say - but there seem to be a few of them around, mostly average imitations of classic arcade games. Considering that the Archimedes can emulate current arcade games *Phantasmagor*, *Street*, *Drive* - *Defender* - *Music Control* and *the the* *Wing* are not exactly slimmers. They are reasonably priced, though, at £24.95 for all except *DA*, which is £29.95.

Claris Micro, beside the usual educational products, was touting at an *Interactive* style game called *Intenditor* (£24.95) and selling some just ones like *Overlord*, *Money Man* (*Parsons*) and *Source's Ball* (*Breakout*).

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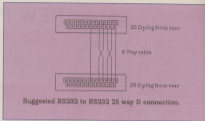
R. Oliver of Hampton, London writes:

Q I have an Amiga 6500 and access to a dumb terminal and I wonder whether it would be possible to use the two together. I know that the Amiga multi-user kit is a multi-user? The terminal has a standard 25-way D connector and is RS232-compatible. If connection is possible, could you show me a wiring diagram to connect the two?

A It is possible to use a terminal with the Amiga and to get it to handle each in a multi-user kind of way. You will need ProDOS 1.3 and the A.L.S. device.

This is like the RS232 device but does not buffer any data being transferred. To set up the link, make sure both machines are off before connecting them; the Amiga serial chips have a habit of going kaput if you connect things to them while the machine is powered up.

Next, boot the Amiga and enter on the terminal. Set them both to the same RS232 speed, e.g., 14080 bps and eight bits, 1 stop bit, no parity. Then enter `SHUNT A.L.S.` on the Amiga to set up the new serial device. Follow this with `SET`



`SETUP A.L.S.` which sets up a new CLI window but directs all input and output via the RS232. You should see a prompt - say `2: -` appear on the terminal. If so, you are in business. If not, check the speeds, word length and so on, and then the wiring of the connecting cable. The suggested wiring shows works for my Amiga connected to an OS, i.e., both serial ports are the same pin out, all that needs to

be done is to reverse TX and RX, and RTS and CTS.

Unfortunately, the terminal has a number of limitations and obviously cannot run graphics-based applications. It can really operate only the CLI commands as other applications will not operate through the serial port.

If the Amiga had more than one RS232 it would be possible to attach a few terminals to the

system but the machine would show a good deal, especially when performing file transfers.

Incidentally, if you do not have Workbench 1.3, it is well worth spending the extra £10 or so for the upgrade. It is available from most Amiga dealers and extends most Amiga commands and provides a number of new devices, plus an improved CLI called `SHELL`.

BBC buffers

T. Fisher of Chel, Kent writes:

Q I am writing to you because you seem to be one of the few people who still support the old BBC micro-model B. I would like

help with the RS232 buffers and how to get characters into and out of them.

A There are two `DSBYTE` commands which make this reasonably easy. There are also made buffers in the BBC:

- 0 = Keyboard buffer
- 1 = RS232 input
- 2 = RS232 output
- 3 = Printer buffer (Centronics output)
- 4 = Serial channel 0
- 5 = Serial channel 1
- 6 = Serial channel 2
- 7 = Serial channel 3
- 8 = Speech

`DSBYTE` sets pins a character from the specified buffer and `DSBYTE` 150 inserts a character. They can be accessed in two ways, e.g., `*TX 100 0,00` puts an A into the keyboard buffer. A more flexible way is to use the fact that the `CALL` command uses the contents of A5, X5, and T5 for the 6502 registers A, X, and T. So, to perform `*TX 100,0,01`, the following subject of program would be used:

```
A5 = 100,05 = 0,05 = 01
CALL&FFP4
```

A procedure to do this is shown. Getting characters from the RS232 receive buffer requires a little more fiddling. The operating system does not return values in A5, X5 and so on. Instead the `USER` function must be used to get the contents of the registers.

Basic

Fred Hills of Milton Keynes, Leicestershire, writes:

Q I know you have been asked this previously but I cannot find the back issue with the answer. Could you tell me what basic stands for?

A Beginners All-purpose Symbolic Instruction Code.

New ST mouse

N. Perry of Telford, Shropshire writes:

Q Recently I had an accident whereby I broke up my ST mouse. Can you tell me where I can get another and how much it would cost?

A A few Atari dealers supply new mice. The average price seems to be about £25. Try Micromap, 844 800 2000, £25; Ideal Electronics, 0750 764700, £25; Apollon Software, 01708 5430, £25.

Ludlow Computing supplies a tracker ball alternative, £25, 0775 281160.

```
DEFPROCTX(C#)
A% = 136:X% = 2
Y% = ASC(C#)
CALL&FFP4
ENDPROC
```

BBC RS432 transmit procedure.

```
DEFFNRX
REPEAT
A% = 145:Y% = 1
T% =USR(&FFP4) AND &FF0000
UNTIL T% = 0
=CHR%(T%/10000)
```

BBC RS432 receive function.

PC emulator - Amiga

Jon Ingram of Shady, Co Durham writes:

Q I have heard of programs known as PC emulators, enabling PC software to be used on other machines. I am interested in such a program for the Commodore Amiga but it will be useful to

me. Could you recommend one reasonably affordable which can run on wide range of PC software as possible?

A Also, to use one, will I need a 1.2Mn. disc drive? If so, again, can you recommend a fairly cheap but reliable one? Can you recommend a suitable card which would allow me to record sound from my Amiga on either a cassette recorder or hi-fi

system, preferably the former?

A I know of no software PC emulators for the Amiga. There may be one available, perhaps one window known? There is certainly one available for the XT and it cannot be particularly difficult. Normally, PC emulation on the Amiga is performed by means of the bridge board, an add-on which includes an XT or AT-compatible

microprocessor, depending on the board, and enables the Amiga to operate exactly like a PC. Unfortunately this works only on the AT286, so far as I know. Some manufacturers of a bridge board for the AT287.

As regards the disc size used, many PC compatibles these days use 5.25in. discs which can certainly be read by the Amiga internal drive, so I should think a 1.2Mn. drive would be fairly redundant.

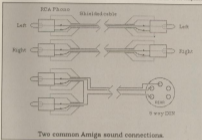
Connecting your Amiga to a tape recorder or a hi-fi is easy. It is probably the easiest machine for doing it. The Amiga sound output is via two RCA phono sockets at the back. It is stereo, so one must go to the left channel and one to the right.

The hi-fi connection is easiest, since all you need is a dual phono-to-dual phono lead, it is available from almost all hi-fi shops.

This pre-supposes that your hi-fi has the standard RCA phono connectors, which it should have if it is less than 10 years old.

If your connections are different you will have to figure the pin-outs and ask the hi-fi dealer if such a lead exists; it almost certainly will.

There shows the two common connections in the accompanying diagram.



Two common Amiga sound connections.

Spectrum Cheap Joy

M. Hobbs of Brentford, Kent writes:

Q I read with interest your Spectrum joystick interface article - June 28 - but note that you feel it may not work with some software. I thought you might like to see a diagram for an interface which uses a 261, i.e. Kempston Standard, but may be converted for use that had the rest of your design. I built the rest in a XTmouse keyboard along with a Sinclair 10 keypad interface and three stick sockets. It operated successfully with old and new software for more than two years; the Sinclair standard interface uses 74LS295, 180138 and 18 resistors. It is not very pretty so I have not included details, but it works.

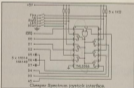
I use a Ferguson 8031 television set for my display which also has an RGB input. RGB sound and earth are satisfactory but what are signal and sync? Is the input analogue or TTL compatible? Do you or any readers have a circuit suitable for an RGB interface to the M08? Finally, would an RGB display be

better than the composite video signal I use at the moment from TFF video input?

I prefer Ferguson used to make an interface to suit the Spectrum but I would like to save some money and leave the edge connector free by building it inside the keyboard.

A I suspect my mistake was in using the 8212 chip as this is a window register compared to the 74LS295. If you want to interface other gadgets to the Spectrum, the 8212 is a versatile device for just a joystick interface your solution is better and cheaper. Thank you for sending it. With respect to your questions, I admit that I am no expert on the Ferguson M08. I think you are right and I should say - but what is not just? - for the horizontal and vertical sync. Presently they could be used with, say, the 10 which produces separate sync signals.

Whether the RGB in the Ferguson is analogue or digital I do not know but I suspect that it is digital as I have seen wiring diagrams for using it with the Spectrum 128 - and the like which use digital RGB so far as I know.



Chempen Spectrum joystick interface.

Unfortunately I do not have a circuit to convert the Spectrum composite video signals to RGB, so you see, adapters rule, so if anyone knows the details send them to me and I will let everyone in on the secret. I may be wrong but most video systems start with RGB signals at some point in their circuitry. They are then converted to composite video and pushed through a UHF modulator for use with a TV. I can only presume that the Spectrum does this as well, what you need is a circuit diagram for it.

The normal method of producing a video image is to get values for the RGB levels from the computer memory image.

These three signals are combined to form composite video and then a UHF signal. All this playing around introduces distortion, so an RGB signal, straight from the source, should produce the best image. I suspect that the adapters which produce RGB for the Spectrum split the composite signal and so introduce yet more distortion.

Keeping up with the Clives'

When I bought my 25-44 with its rickety RAM pack and spaggy keyboard I definitely felt that I had entered a new stage of my career. Hadn't I had become part of the computer revolution instead of being an outsider? Many of the programs being published these were fairly elementary and written in Basic. Always were graphics characters which staggered across the screen and which were shot down by painfully slow missiles.

You could understand the programs, change them, improve them or write better ones. You felt like a pioneer and the letters and articles in the magazines reinforced that we were all working towards an understanding of this marvelous equipment on which we had laid our hands and looking for problems to solve on it. The lure of obtaining a second income or even becoming fully independent to work in the comfort of your own home beckoned.

The limitations of the 25-44 quickly became obvious and I graduated to the Commodore 64 to get my hands on a real home computer with reasonably high-resolution graphics, colour, sound and a proper keyboard. The horizon had expanded. Nothing seemed impossible and I made some money out of it by using the computer for word processing and getting a few small programs published. From then it appeared that it was possible to reach the level of the professionals with some applications.

I did some business programming and learned at first hand what the computer books do not

tell you—professional-level programming is three hard work calling for a high degree of concentration and attention to detail. They do not mention the need to acquire the ability to second-guess what an inexperienced user will make of your on-screen text messages and the need to make the program bug-free and error-trapped.

Writing programs is not easy as it looks and I expect that there are many computers collecting dust in cupboards where owners abandoned the dream of becoming a programmer.



Undaunted, I struggled to master machine code and improve my Basic to try to learn how to write high-quality programs. Even as I was doing so a new generation of computers was appearing on the market. They had very high-resolution graphics, a superb range of colours, full quality sound and a compilation to match. Games programs became a pleasure to watch because of the quality of the graphics, even though they were the same old plots

refreshed time and again.

Always had gone from titles to detailed figures which associated with much other, the background music was now a recognizable tune and the scenery rolled smoothly across the picture. Competitors appeared to encourage graphics programmers to display their best work.

The quality of some of the winning pictures was so good that you had to look twice to see if they were not really photographs. There were those sequences of weaving, shiny balls complete with accurate and changing reflections. Real art, beautiful things which must have taken hundreds of hours of work to create. Some of the finest sequences appear on television where it is becoming increasingly difficult to distinguish the computer generated from the real.

I was only stand back and admire such industry. I know I cannot compete if I do not have the equipment, the experience or time. Not am I likely to acquire it, the technology has advanced out of my reach and I cannot keep up with it. I have moved a step back to become a user rather than a creator. It is not that I have lost interest — the truth is the frustration fingers has I spend more time writing about it than doing it.

Fortunately, no program has yet been written which can generate even simple articles. I do not resent being one of the maintainers of computing but the advances in technology have taken away my dreams. Where has the magic of those early days gone?

Peter Conway

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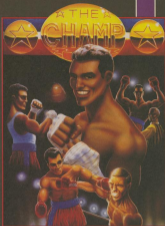
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