

Burton

NOVEMBER 1989
£1.25

AMSTRAD COMPUTER USER

THE OFFICIAL AMSTRAD CPC MAGAZINE

TEST DRIVE II THE DUEL

THE RACE IS ON

COMPETITION

WIN A PORSCHE

FEATURES

SEVEN CPC BOOKS REVIEWED,
DOMARK PROFILED AND A
FRACTALS FRENZY

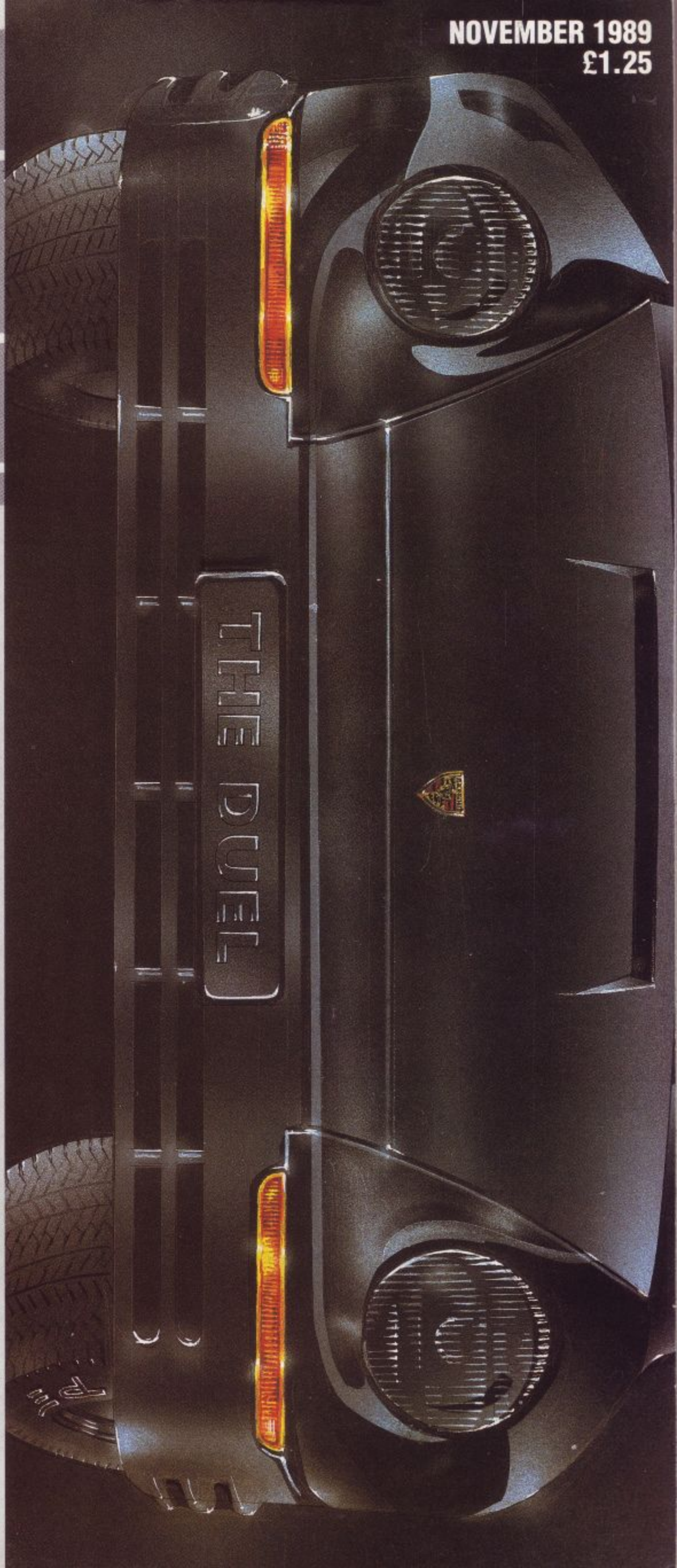
THE REGULARS

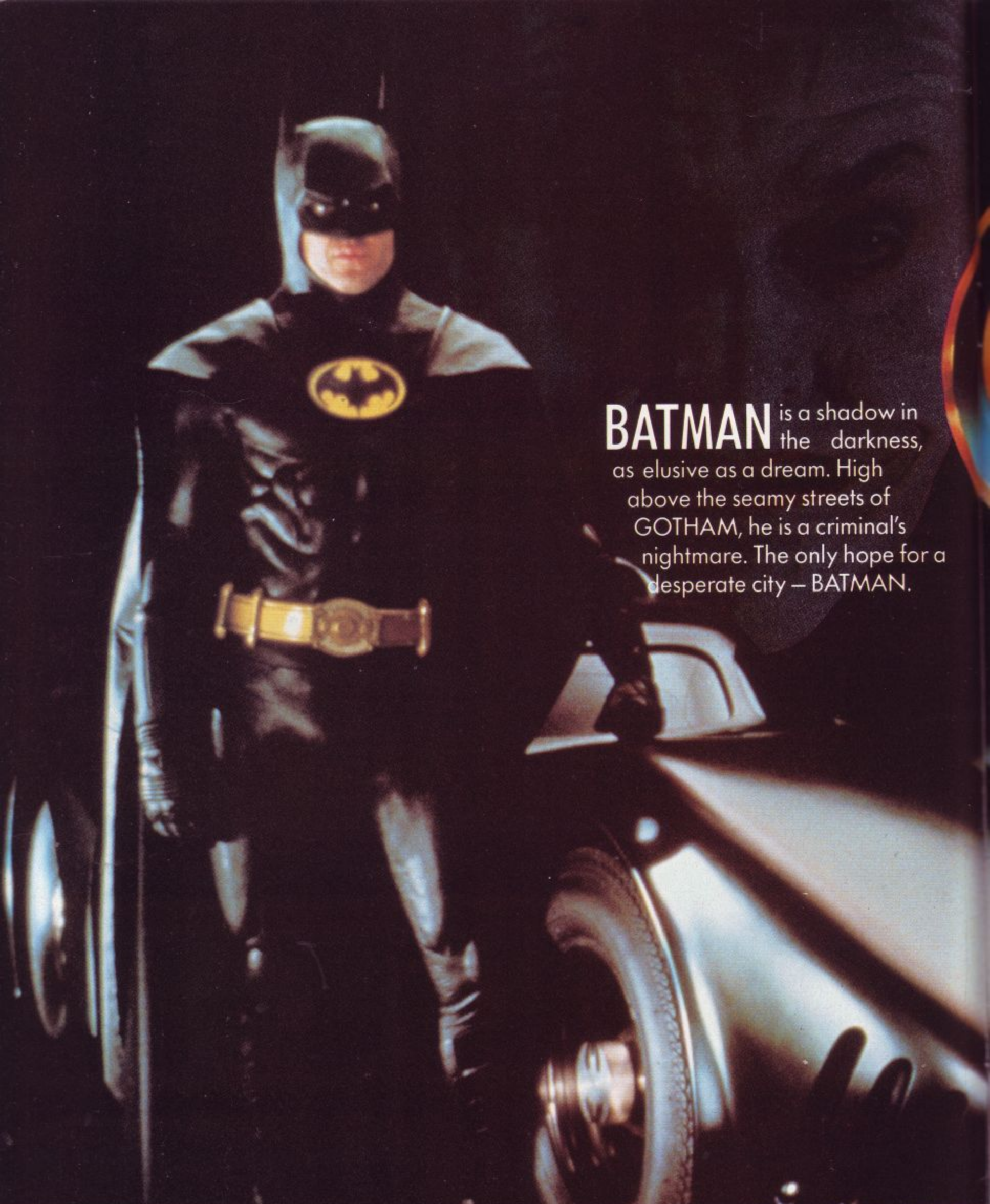
ALL YOUR FAVOURITES PLUS
A NEW COMMS SECTION

ISSN 0952-3049



9 770952 304006





BATMAN is a shadow in the darkness, as elusive as a dream. High above the seamy streets of GOTHAM, he is a criminal's nightmare. The only hope for a desperate city – BATMAN.



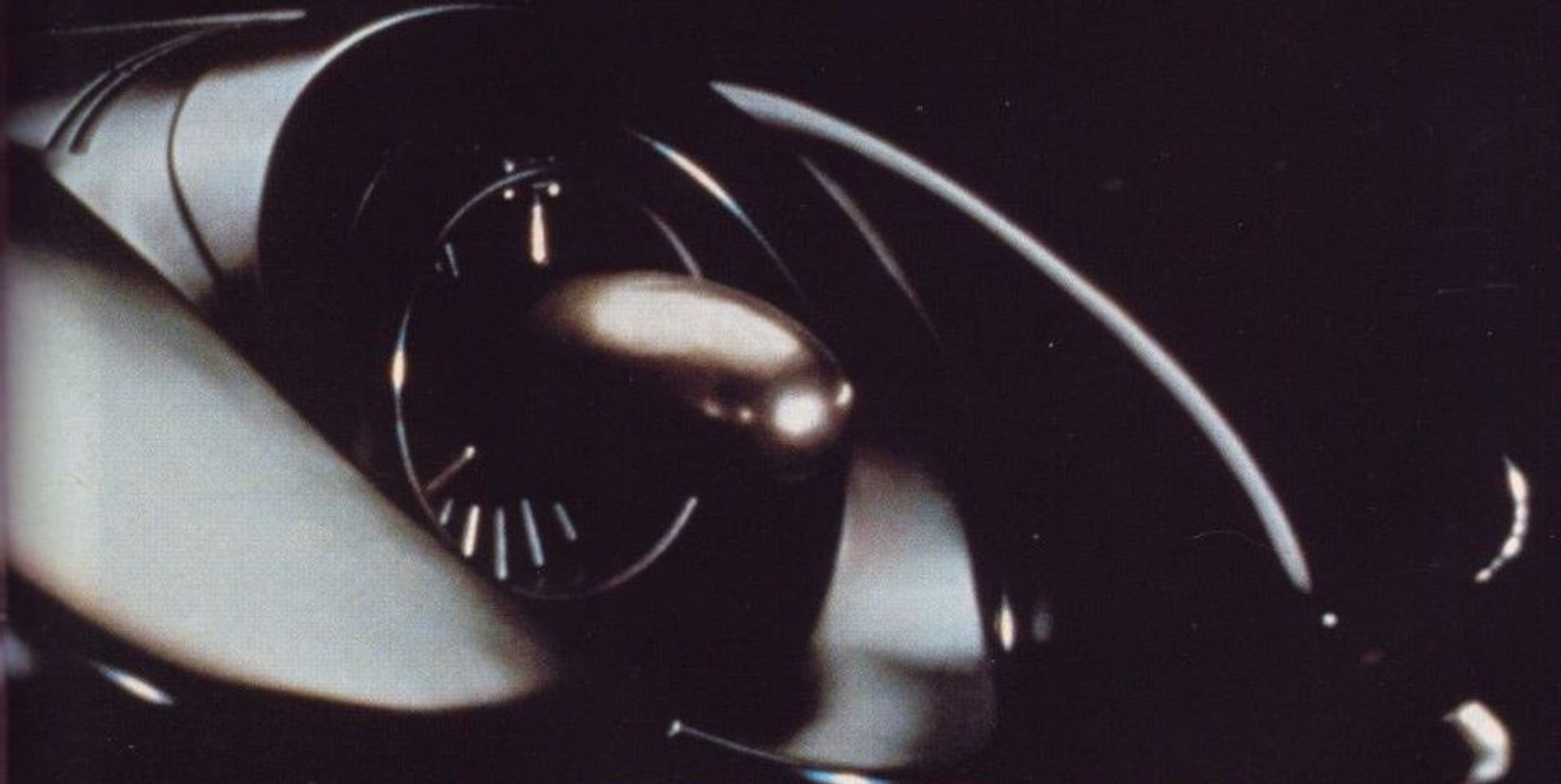
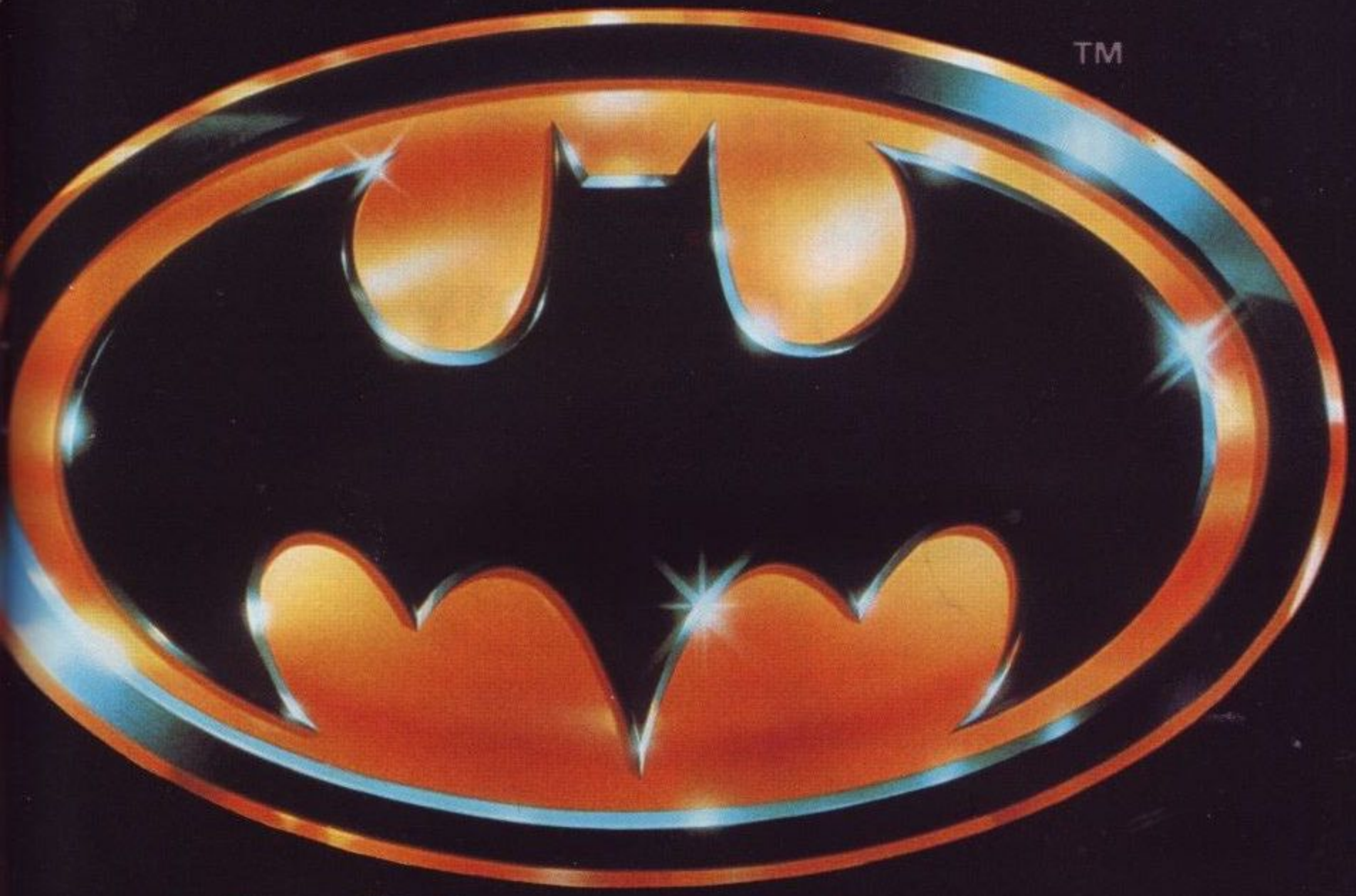
AMSTRAD
£9.99

SPECTRUM
£9.99

ATARI ST
£19.99

AMIGA
£24.99

TM



ocean

TM & © 1989 DC Comics Inc.
All Rights Reserved.

Ocean Software Limited - 6 Central Street - Manchester - M2 5NS
Telephone: 061 832 6633 - Telex: 669977 OCEANS G - Fax: 061 834 0650

We've just added



to our low cost Business Series



Well, it had to happen! Following the tremendous success of the award winning low cost Business Series which features the widely acclaimed LC-10 and LC24-10, Star are pleased to announce the arrival of their wide carriage versions, the LC-15 and LC24-15. Capable of printing A3 landscape in either NLQ or LQ mode respectively and draft at speeds of up to 200cps, these new printers are able to offer much more.



For users that need to link into networks or position the printer more remotely, you can now easily switch to a RS232C interface by just unplugging the parallel and clipping in the serial cartridge interface.

LC-15

- ✦ Superb Bottom and Rear Feed 9-Pin Printer.
- ✦ Offering high quality printing at a speedy 180cps in draft elite and 45cps in NLQ.
- ✦ A wide variety of styles can be used via the 8 Resident Fonts (including italics).
- ✦ First and Last line printing is also available on every page.
- ✦ Paper Parking is available on both LC-15 and LC24-15.

LC24-15

- ✦ Exceptional value 24-Pin printer offering speeds of up to 67cps in LQ mode and 200cps in draft elite.
- ✦ 8 LQ fonts available from the front panel plus a choice of 3 optional font cartridges and a 32Kb RAM cartridge for creating your own fonts or expanding the buffer memory from 11Kb to 43Kb.

The Business Series

THE
Star
COMPUTER PRINTERS

Star Micronics U.K. Ltd., Star House, Peregrine Business Park,
Gomm Road, High Wycombe HP13 7DL. Telephone: 0494 471111.
A division of Star Micronics Co., Ltd. Japan.

Please send me details of the new Business Series printers (alternatively, just call the Sales Information Line on 0494 471111).

Name _____

Company _____

Address _____

Postcode _____ Telephone _____



Public sector customers may purchase at preferential terms from HMSO. Contact 0603 695256.

L15 ACUII

Avralite Publications Ltd
Greencoat House
Francis Street
London
SW1P 1DG
Tel: 01-834 1717
Fax: 01-828 0270

Editor

Guy Matthews

Deputy Editor

Adrian Pumphrey

Chief Sub Editor

Sarah Sears

Reviewers

Andrew Banner

Mark Luckham

Columnists

John Cook

David Foster

Vic Olliver

Phil Craven

John Kennedy

Designers

Paul Ellis

Adrian Hulf

Cartoonist

Julian Sharp

Advertising Manager

Clare Baxter

Advertising Sales

Sharon Green

Production Manager

Nick Fry

Production

Tanya Al-Rais

Group Editor

Carlo Jolly

Publisher

Perry Trevers

Managing Director

Peter Welham

Financial Director

Brendan McGrath

Chief Executive

Richard Hease

Subscriptions

TIL

PO Box 74

Kent

TN12 6DW

Yearly rates:

UK £16.20

Europe £23.00

Middle East £23.30

Far East £25.90

Rest of the world £23.80

USA £41.65

Distribution

SM Distribution

Tel: 01-677 8111

Typesetters

Hamilton Press

Preston

Lancashire

Tel: (0772) 733333

Published on 1st Wednesday
of month preceeding cover
date

Amstrad is a registered trade mark and, with the title Amstrad Computer User, is used with the permission of Amstrad plc. No part of this publication may be produced without permission. While every effort is made to ensure the accuracy of all features and listings we cannot accept any liability for any mistakes or misprints. The views and opinions expressed are not necessarily those of Amstrad or Amsoft but represent the views of our many readers, users, and contributors. Material for publication is accepted only on an all rights basis. We regret that Amstrad Computer User cannot enter into personal correspondence.

REGULARS

LETTERS 6

These are the pages you write. We want to hear all your views and ideas – even the complaints!

NEWS 10

All the latest from the wacky world of the CPC.

COMPETITION 17

Win a remote controlled Porsche or a fab poster.

COMBAT ZONE 16

John Cook wastes all his hard earned cash to bring you reviews of the latest coin-op creations.

MICROSCOPE 18

Get technical with the help of kind Mr Cummings.

10 LINERS 26

Get typing with our marvellous mini programs.

GAMEPLAN 33

The best CPC games reviews going are in your ACU – APB, Dragon Spirit and Strider to name but three.

HAIRY HACKER 46

The most hirsute hacker in town gives you his best shot.

AUNTIE JOHN 52

John Kennedy slips into something comfortable for the latest instalment in his Space Invaders bonanza.

APPLICATIONS ADVICE 60

David Dorn, he of little hair but great brain, answers your questions.

DIRECT LINES 68

How we do it, I'll never know. Another great selection of bargains from our merchandising team.

COMMS 70

A brand spanking new regular column where we guide you through the murky world of computer communications, starting from the beginning. Are you sitting comfortably?



FEATURES

FRACTALS 22

Make your own Norwegian fjords with our three-part fractals feature.

PROFILE 30

Domark is going places in the computer games world. Adrian Pumphrey swallows his Northern pride and grudgingly admits that it's all happening in Putney, London.

PLOT SPOT 44

We review the Arnold Plot package for drawing graphs.

BOOKS UNLIMITED 64

Read your way to CPC nirvana with the aid of our book round-up. All books from the Computer Bookshop. Telephone: 021-706 1250.

LETTERS



Any books out there?

I am writing to ask if there are any books I can buy to help me on my Amstrad CPC 6128 computer? If there are, I would be most grateful if you could send me a list of them. Very many thanks.

*Iain A. Mumford,
Ayrshire,
Scotland.*

ACU: See the reviews in this issue.

Baffled

I have an Amstrad CPC464 and I am trying to teach myself BASIC in order to be able to write simple programs to amuse my grandchildren.

I understand a little of BASIC, but I am baffled by the CALL commands. I know two of them: "CALL &BC02" and "CALL &BD19", but do not know any more.

Would it be possible, please, to print a list of the CALLS and their meanings in your magazine.

I am a subscriber to ACU.

*C. Spencer,
Barnsley,
S. Yorks.*

ACU: There are far too many CALL commands to print here, but you can find the information you seek in the *Advanced User's Guide* from Glentop. For further details see this month's book round-up.

German gratitude

I am writing to tell R. Conway (who wrote in the August issue about Amstrad's lack of response) that I found the company very helpful when I needed them.

As you can see from my address, I live in Germany. Almost a year ago we returned to the UK for a visit. While I was there I purchased my Amstrad from Comet and tested it there.

It was fine. But when I returned to Germany, it wasn't so fine.

The disc drive wouldn't read from the disc. So, I wrote off to Amstrad (the registered office in Brentwood); just over a week later I received their reply, telling me where the nearest office was. They seemed very concerned.

By the way, I didn't actually need to take it in to this office. I put a disc in the drive. As usual it wouldn't read, but this time I leaned on the drive - perfect again. And I haven't had any trouble since!

David Hinsley,
Area Office Dusseldorf,
PSA BFPO 34.

10 trouble

I think a lot of people will have had trouble with the ten-liners in the August 1989 issue. I have listed the errors below.

1) PUZZLE - Line two should read $b(x,y)=p(L*16+t)$ at the end. This means that the shape shown is the same shape that you have to reconstruct.

2) EYE - The CPC464 does not have a GRAPHICS PEN command. Instead use PLOT 1000, 1000, colour. Of course in the listing an 'i'(!) would be substituted for colour.

3) KILL 'EM ALL - A white spot covers part of the data in line ten, making entering impossible.

4) SNAKE (SNAKX?) - Control characters were used in line twenty which makes entering difficult. The characters are CTRL T, CTRL I, CTRL J, CTRL K and CTRL L.

I also would recommend that you cut down on the huge cartoon figures as they take up a lot of space; Combat Zone could have easily been cut down to three pages in the August issue, for

example. Incidentally, what is an arcade feature doing in an Amstrad magazine? Perhaps there should be a separate magazine published for 'Arcade Gamers'.

Lastly, if anyone has a spare Firmware specification manual (SOFT 158), either after upgrading to a SOFT 958 or one that they don't need, I shall pay full price and postage if they could contact me on (0224) 869503.

A. D. Brown,
Cults,
Aberdeen.

Dungeon Master fan

I am a *Dungeon Master* fan, having played it on a friend's Amiga, but I did not think it was available for the Amstrad.

But the first sentence of a review in your September issue, of *Bloodwych* to be precise, reads "For many people the 16-bit program of 1988 was *Dungeon Master*. So, please, please, please, where can I find *Dungeon Master*?"

J. Dunstenville,
Clifton,
Bristol.

ACU: I regret to inform you that *Dungeon Master* is not available on the CPC. The reviewer compared *Bloodwych* and *Dungeon Master* because they are both released by Mirrorsoft and because both games are based upon a similar idea - dungeon exploration and monster bashing.

Any copies?

Please could you tell me if you still have any copies of *Utilities Unlimited* with its documentation for £14.90, as I think it is excellent value. The last time I saw it was in the April issue. And are you going to bring back the offer pages with new products? The last thing I would like to know is if you are going to have an adventure column? Will you please go and find out. Here is a joke that I made up to pass the time: "Why did the fly, who could not fly, fly away when he was put on a

book?"... Because the book was called 'How to Fly'."

Adrian Seale,
Ropley,
Hants.

ACU: The Utilities Unlimited have ceased to be, but, as you can see from the last issue, the offers are back with a vengeance. There are no immediate plans for an adventure column, but if the survey results indicate that this is what the readership wants, then this is what the readership will get.

Changes

Over the past few months I have noticed a few changes in *Amstrad Computer User*. Most of the changes are improvements but I would like to see a few more serious articles.

Dani Lopez,
Charlton,
London.

ACU: We try to get the balance right and to help us achieve perfection we always welcome feedback.

Progress

I am writing to ask someone to explain something to me. I have not been in computing very long but I am making steady progress; I have though, a problem. I have read in the Amstrad CPC464 manual that the keywords POKE, PEEK, FRI, MEMORY and BYTE are not for beginners to use. I have then read these keywords in your 'hairy hacker' column. Could someone explain to me how this computer memory works, and how I can use it so that I don't mess up my machine.

Bindi Goucher,
Mansfield,
Notts.

ACU: You need not worry about damaging your machine by using these commands. You may cause the machine to crash, but simply turning the machine off and then switching it on again will restore the memory to its natural state.

DATTEL ELECTRONICS

**MIDI
COMPATIBLE**

music machine

THE RAM MUSIC MACHINE IS PROBABLY THE MOST EXCITING MUSIC ADD-ON AVAILABLE FOR ANY COMPUTER.

- ▼ It's a full sound sampling system allowing any sound to be recorded digitally into computer RAM. Once stored the sound can be replayed at different pitches with many varying effects.
- ▼ It's an echo chamber & digital delay line. Create very interesting effects.
- ▼ Various sampled sounds are provided to get you going.
- ▼ The Music Machine can be used as a drum machine - eight drum sounds are provided, but you can easily produce more of your own.
- ▼ The powerful software allows you to compose tunes from individual bars of music. You can edit on screen & Save/Load sounds, instruments & rhythms.
- ▼ It's a two voice music/sound synth.
- ▼ Fully MIDI compatible. The Ram Music Machine supports full MIDI In, MIDI Out & MIDI Thru.
- ▼ Output through your Hi-Fi or Headphones. Comes complete with Microphone.
- ▼ Use a full size MIDI keyboard to play the Music Machine.
- ▼ Sounds produced by the Music Machine can be mixed with a MIDI Synthesiser's own sounds.
- ▼ On screen Sound Editor can produce MIDI data from your own compositions.
- ▼ No other product can offer so much in one unit - it's the total solution!!

ONLY £49.99 (Cassette)
ADD £5 IF DISK REQUIRED

**FREE
MICROPHONE AND
HEADPHONES!**



MEMORY EXPANSION

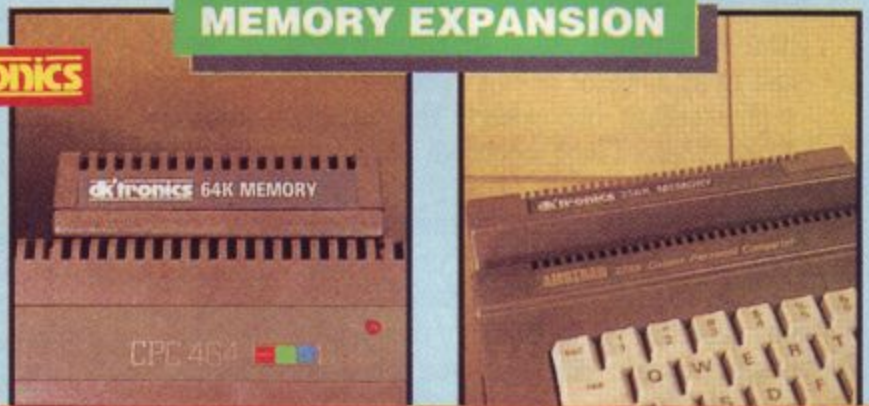


LIGHTPEN/GRAPHICS SYSTEM

- ▼ Complete Lightpen and graphics system lets you create a whole range of effects on screen.
- ▼ It can magnify, shrink, colour fill and create circles, rectangles, lines and curves.
- ▼ Pictures can be edited at pixel level using a scratch pad which is magnified to full screen.
- ▼ Picture storage and retrieval, and a pen calibration feature.
- ▼ Printer dump utilities for Epson/Amstrad printers supplied (on cassette).

**ONLY £14.99
CASSETTE**

**OR £24.99
WITH SOFTWARE ON ROM -
NOTHING TO LOAD**
464 or 6128 (Please state which)



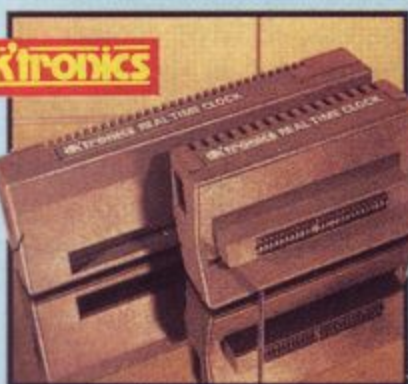
64K AND 256K MEMORY EXPANSION

- ▼ Simple plug in memory expansion gives instant extra memory.
- ▼ Features bank switching software for easy use by the programmer or for use as a data storage area.
- ▼ Ideal for use with the CPM 2.2 etc.
- ▼ The software also features some extra BASIC commands.
- ▼ 64K unit brings 464 up to CPC 6128 memory configuration making a much larger software base available. Will work straight off with many programs designed for this unit (including OCP Art Studio - see Ad.).
- ▼ 64K unit expands 464 to 128K.
- ▼ The 256K unit takes your 6128 to a massive 320K!!
- ▼ All bank switching done automatically by supplied software (cassette 464 - disk 6128).

ONLY £49.99

**64K for 464
ONLY £99.99
256K for 464 or 6128 (Please State)**

REALTIME CLOCK



- ▼ A simple but highly useful device.
- ▼ Easy to use realtime clock - battery backed to give the correct time and date always.
- ▼ Also features extra 8bit I/O port for external control applications - very useful.
- ▼ Comes complete with full instructions and set-up software.

ONLY £19.99
464 or 6128 (Please state which)

SPEECH SYNTHESISER & STEREO SOUND BOOSTER

- ▼ This easy to use Speech Synthesiser includes a powerful Stereo Amplifier and two Pod Speakers which is a great improvement on the sound of the internal mono speaker.
- ▼ Using the SPO/256 Speech Chip the unit has an almost infinite vocabulary.
- ▼ Text to speech software is provided in ROM to make speech output simplicity itself.
- ▼ Voicing is transparent to the user and the computer can carry on with other program tasks.
- ▼ Speech output is mono directed to both speakers. Booster gives stereo to internal sound output.



ONLY £29.99
464 or 6128 (Please state which)

SILICON DISK 464/6128

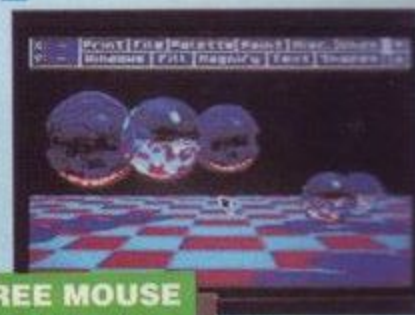
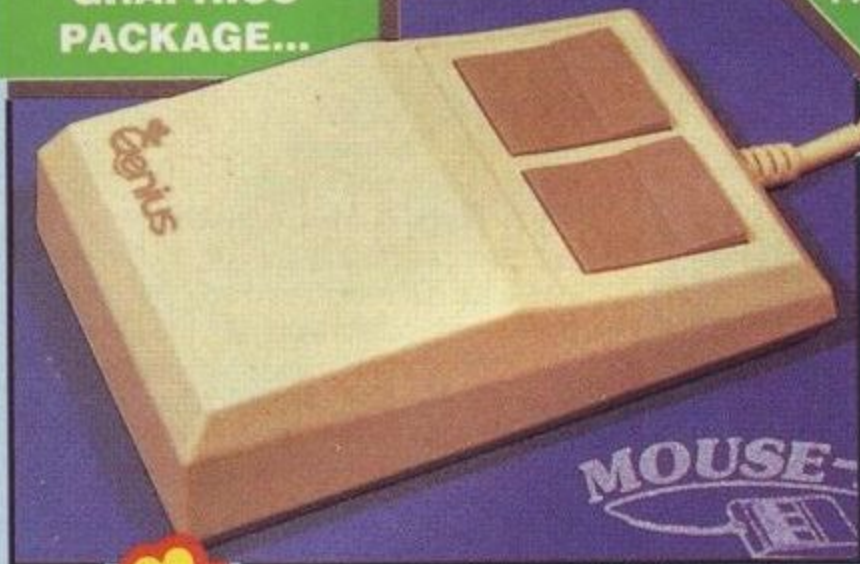
- ▼ This is the fastest storage system available for the Amstrad CPC computers and is compatible with CPM 2.2, CPM+ and all DK'TRONICS peripherals.
- ▼ The 2516K Silicon Disk is designed to be used in conjunction with at least one normal Disk Drive attached to the system.
- ▼ When the 2516K Silicon Disk is fitted only 2K is used for the Silicon Disk directory, leaving 254K for storage - that's 70K more than a normal Disk Drive.
- ▼ Data and programs can be exchanged between Silicon Disk and normal Disk, application programs can then work on their data at vastly increased speeds.
- ▼ Software is on ROM (nothing to load) and can be used in two modes - Basic under AMDOS with normal LOAD, SAVE CAT MERGE commands etc. and within CPM 2.2 CPM+ where commercial programs are designed to run on multi-drive systems.

ONLY £129.99
464 or 6128 (Please state which)

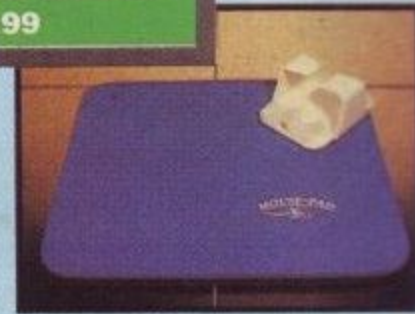
DATTEL ELECTRONICS

THE ULTIMATE GRAPHICS PACKAGE...

SPECIAL OFFER PACK!



INCLUDES FREE MOUSE MAT/HOLDER WORTH £12.99



Genius Mouse

COMPLETE WITH

OCP ART STUDIO™

- ▼ Genius Mouse is a high resolution two button mouse featuring optical counting, teflon guides, microswitches, rubber coated ball and high quality interface.
- ▼ When combined with OCP Art Studio this graphics package is quite simply the best system available. The features are unmatched...
- ▼ Create an image - shrink it, expand it, move it, rotate it, copy it, colour it etc., etc.
- ▼ Spray patterns or shades, make elastic lines - stretch and manipulate shapes.
- ▼ Zoom in to add detail in fine mode.
- ▼ Pulldown/Icon driven menus for ease of use.
- ▼ Mouse operation, plus joystick and keyboard control.
- ▼ 16 pens, 8 sprays, 16 brushes - so flexible anyone can create superb graphics easily.
- ▼ Full cut and paste facilities plus excellent printer support.
- ▼ Pixel edit, font editor, flip, invert, rotate, solid or textured fill and professional manual make Art Studio simply the best graphics package for the Amstrad CPC.

ONLY £49.99
TOTAL PACKAGE INCLUDING GENIUS MOUSE/INTERFACE MOUSE MAT/HOLDER AND OCP ART STUDIO

TAPE OR DISK FOR 464 OR 6128 (PLEASE STATE WHICH REQUIRED) N.B. 464 NEEDS DK' 64K RAM PACK

NEW SLIMLINE DRIVE



800k 3.5" DISK DRIVE

- ▼ Now you can add a superb top quality 3.5" drive to your CPC Amstrad.
- ▼ 800K of data storage on disks that cost less than £1.00.
- ▼ No need to flip disks.
- ▼ 3.5" disks are fast becoming industry standard.
- ▼ Comes complete with power supply and cables.
- ▼ We supply our drive with the RODOS operating system, giving
- ▼ not only this vast disk capacity but also over 50 new bar commands plus a printer buffer, etc.
- ▼ Easily fitted - full instructions.

464 owners must already have at least one Amstrad drive.

Only £119.99 for Drive and RODOS including PSU/Cables

- ▼ Turn your Amstrad Monitor into a full feature TV set with our TV Tuner System.
- ▼ Latest chip technology gives crystal clear reception on all channels.
- ▼ Built-in speaker.
- ▼ On/Off volume controls.
- ▼ Brightness and colour controls.
- ▼ Channel selector.
- ▼ Attractively styled to match your computer.
- ▼ Why not realise the full potential of your monitor?

ONLY £69.99

TV TUNER SYSTEM



PCW 8256/8512



PCW 8256/8512 COMMUNICATOR

- ▼ Complete RS232 and Centronics/Parallel interface for the PCW Amstrad.
- ▼ Simply plugs into rear expansion slot.
- ▼ Attractively styled in computer colours.
- ▼ Full instructions supplied.

Only £49.99 complete

ALL ORDERS NORMALLY DESPATCHED WITHIN 48 HRS

HOW TO ORDER ...

<p>BY PHONE</p> <p>0782 744707 24hr Credit Card Line</p>	<p>BY POST</p> <p>Send cheques/POs made payable to "Datel Electronics"</p>	<p>FAX</p> <p>0782 744292</p> <p>UK ORDERS POST FREE EUROPE ADD £1 OVERSEAS ADD £3</p>
--	---	--

PRICES AND SPECIFICATIONS CORRECT AT TIME OF PRESS AND SUBJECT TO CHANGE WITHOUT NOTICE

CALLERS WELCOME - Please reserve goods by telephone prior to visit.

DATTEL ELECTRONICS

DATEL ELECTRONICS LTD., FENTON INDUSTRIAL ESTATE
GOVAN ROAD, FENTON, STOKE-ON-TRENT, ENGLAND.

SALES ONLY
0782 744707

TECHNICAL ONLY
0782 744324



Paul Gascoigne.

Gazza's game

Topical Tottenham and England mid-field star Paul Gascoigne is to feature in his very own computer game.

Empire, a new Entertainment International label, will launch Gazza's Super Soccer later this month. The game includes the best features found in previous football games such as full ball control and a boot-o-meter showing the strength of the shot but it also includes a few enhancements including a new approach to perspective. The pitch is split into three sections, each roughly a third of the pitch.

When in the centre third your view of the pitch is side on from the stands but when you approach one of the goals the view switches through ninety degrees to look down the pitch. This perspective gives a better view of the goal and players near it thus allowing a greater degree of accuracy in shot and goal keeping.

For players wishing to control other league teams besides Spurs most of the 4 English Divisions and the Scottish Premier Division will be included along with their strip. Team members vary in skill and ability and not so surprisingly Gazza is the best of the lot.

The game certainly promises a lot and CPC owners will be able to test it out for themselves later this month. The game will retail at £9.99 on cassette and £14.99 on disc.

The X-Men cometh

Fans of the X-Men are in for a treat with the upcoming launch of an X-Men computer game from The Edge. Three X-Men games are planned each featuring one of the team members. One of the characters targeted for conversion is the steel clawed Wolverine.

The conversion of comic characters follows closely on the heels of two previous paper to pixel conversions, Garfield and Peanuts.

The action should hit your screens some time around Christmas.

Video news

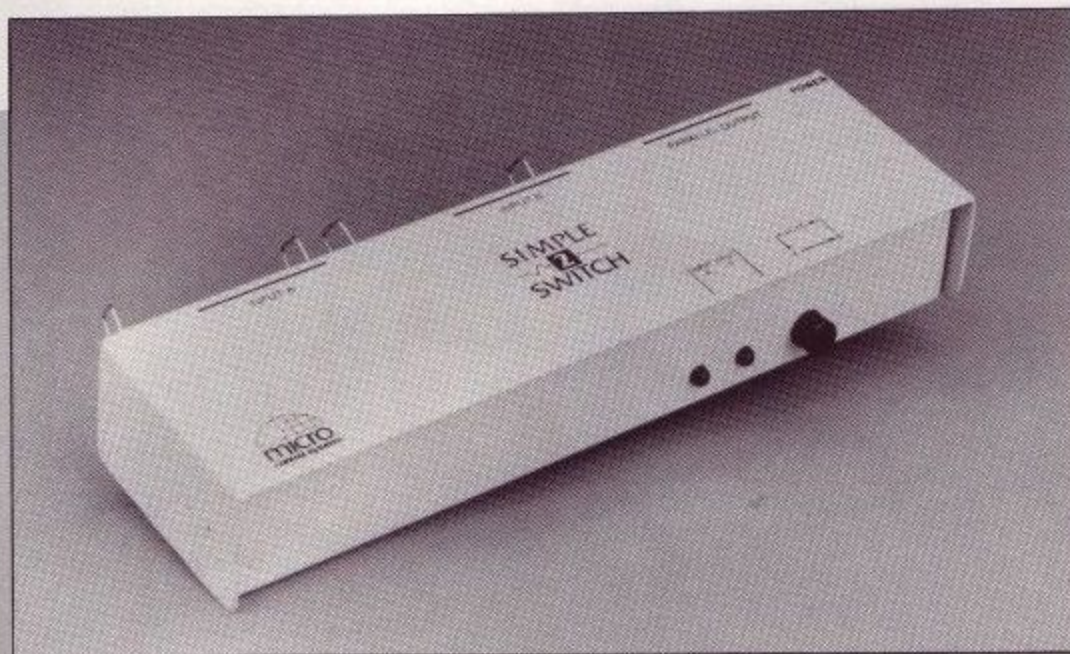
Action Screenplay, the video magazine for computer users, is making itself available for rental in a bid to increase its readership.

The publication is now rentable from computer stores and video rental shops throughout Europe at a cost of around £1.50. It has also been expanded to include chart gossip and a new section called Playback which looks back over past games successes.

Producer Jon Beales commented "Our sales are currently excellent but we feel that bringing the price below £2 will increase demand. We hope the majority of computer magazine buyers will also want Action Screenplay. By renting rather than selling we should increase our audience to hundreds of thousands. The product lasts over 90 minutes and in the programme we give a brief review of how the industry stands at present. We can give an idea of what animation and sound is like in computer games and what industry personalities are really like. By using the dynamic TV medium we are able to bring many aspects of the industry alive."



John Beales.



The Simple 2-Switch from Micro-Control Systems.

Two's company

Nottingham based Micro Control Systems has launched simple-2-Switch, a dual mode device that allows two users to share the same printer. The device allows manual or automatic switching between users.

Star quality

Star Micronics U.K. Ltd has announced drastic price cuts on its Business Series printers. The LC24-10 has taken the brunt of these price reductions with a massive £100 price cut. This multi-font, 24-pin dot matrix printer with paper park now retails for £299. Further reductions in the range include a £30 price cut on the LC-10

bringing it down to £199 and a £40 price reduction on the LC-10 colour printer bringing the price down to £259.

Star has consolidated its place in the competitive printer marketplace



Star's new LC-15 (left) and LC24-15 printers.

by appointing National Computer Supplies as a dealer.

Derbyshire based NCS supplies data switch boxes, boosters and converters, buffers, printer sharers and cables, computers, discs, and many other accessories.

General ledger

SD Microsystems has released an upgraded version of its best selling program, General Ledger 6128. The enhanced program can now hold up to 300 transactions per title as opposed to the previous 150-200 files per file. A trial balance report function has been included along with automatic handling of up to 10 standing orders. Further improvements including 10 extra expense accounts, faster date sort and a colour change option.

General Ledger 6128 (2.0) retails for £29.95 plus £1.00 p/p. Owners of version 1.0 can upgrade for £10.00 with extra manuals costing a further £2.00.

CPC 646 owners can now run General Ledger as SD Microsystems is now supplying the program on cassette. The 464 version retails for £19.95.

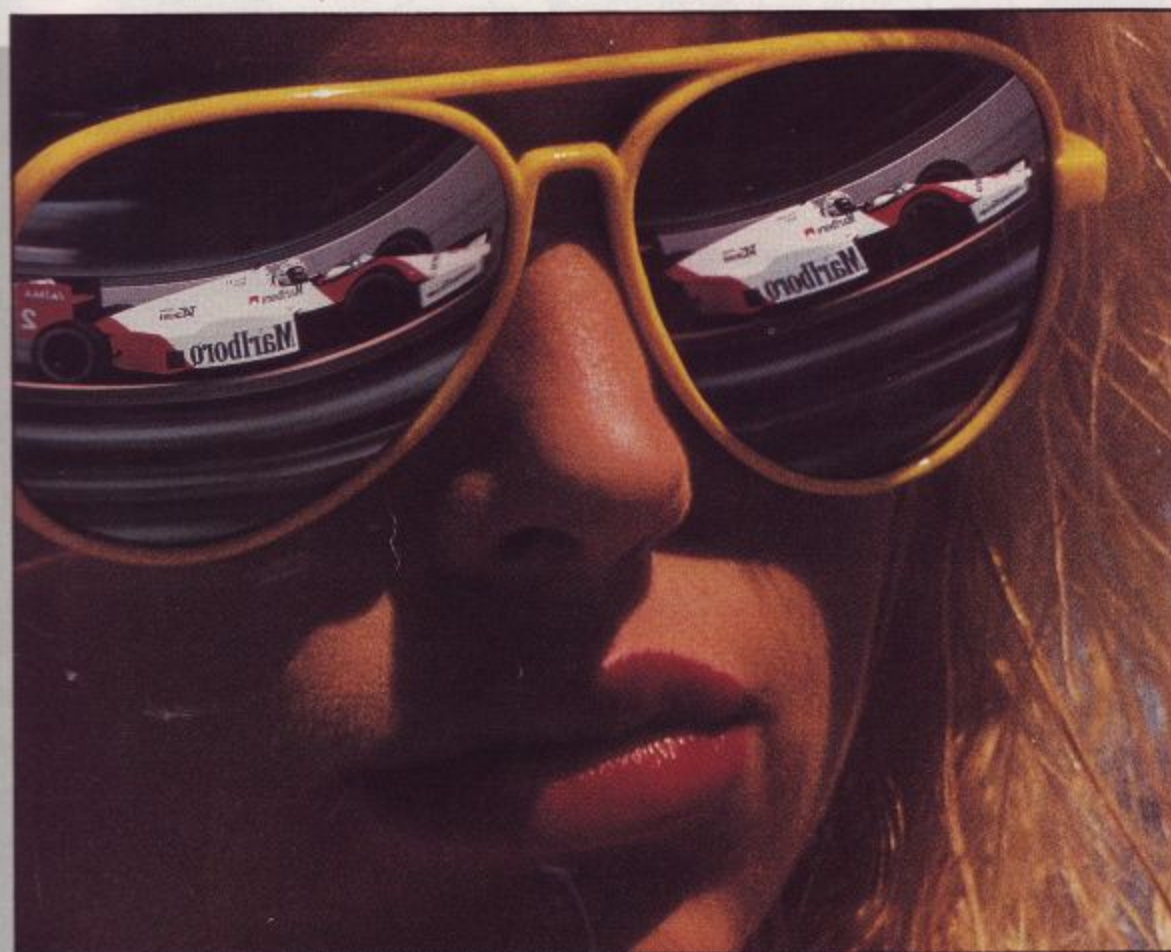
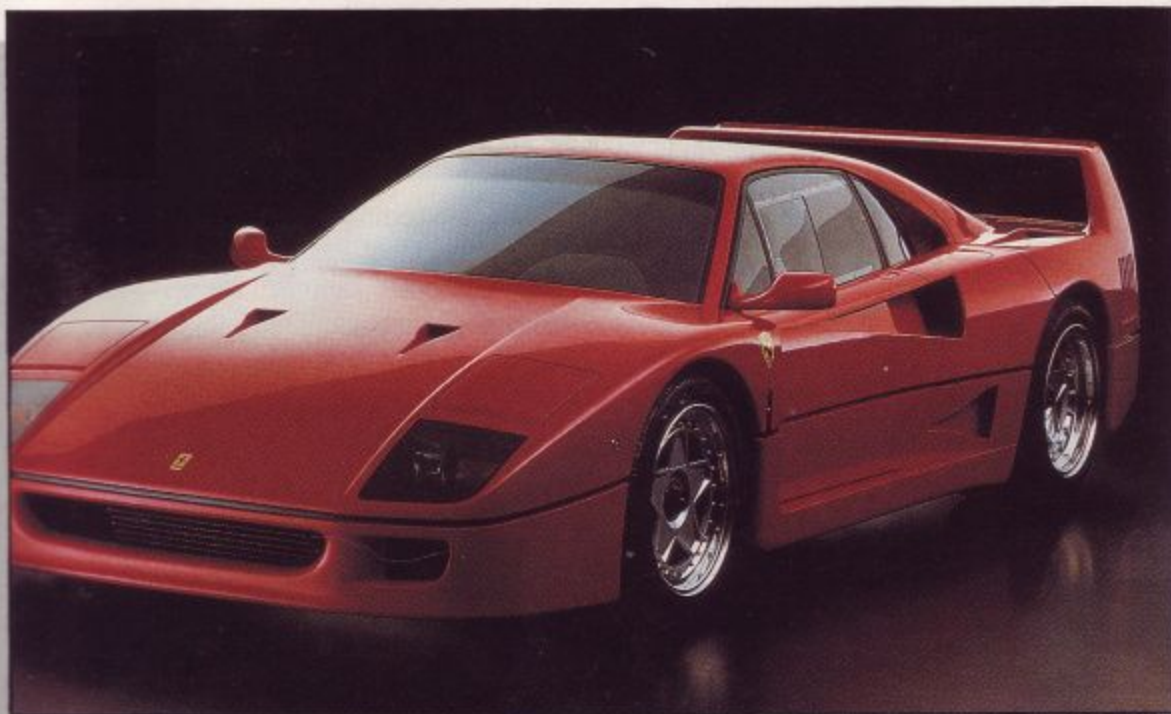
COMPETITION WINNER

The lucky winner of the original signed *Time Scanner* artwork is non other than J. Halliday from Rossendale.

SCREEN HEROES

by Jules





The cover game this month is Test Drive II and to allow you to get in on the action we are giving away (in conjunction with Accolade) two remote controlled Porsches and twenty extra super Grand Prix posters. All you have to do to win one of these fantastic prizes is answer the three simple questions below. The first two correct entries drawn from the sack win the Porsches and the next twenty a poster each.

- 1.** How many engines does the Porsche 959 have?
- 2.** Name one driver who drives for Porsche?
- 3.** Which car did Prince sing about and what was its colour?

**The editor's decision is final.
Send your entries to:
ACU, Avralite Publications,
Greencoat House,
Francis Street,
London SW1P 1DG.**

KNIGHT FORCE



TITUS™

UNIT 4 STANNETS LAINDON NORTH TRADE CENTRE BASILDON ESSEX SS15 6 DJ - PHONE : (0268) 541 126

© 1988 TITUS. KNIGHT FORCE, TITUS AND THE TITUS LOGO ARE REGISTERED TRADEMARKS OF TITUS

BrunWord

BrunWord 6128 £30

BrunWord 6128 is specially written for the Amstrad CPC6128. Months were spent just optimising the routines into their smallest, most efficient form. The result is the fastest, most convenient word processor for this computer, complete with the fastest spelling checker and a card filing programme for mail merging. Whether you are writing a few letters or a complete novel, you will find no better assistant than BrunWord.

The word processor, spelling checker and 30,000 word dictionary, are all loaded into memory by typing RUN "BRUNWORD". The disc drive is then completely free for your data disc.

All other word processors, even the ROM versions, need to access the programme disc to test the spelling. (ROM versions have the dictionary on disc). This is slow and can involve many disc changes. For example, Protex needed the disc to be changed eight times to check the spelling of our test file, whereas BrunWord needed no disc in the drive.

The 40 page BrunWord manual has several detailed examples, starting with step by step instructions to produce and print a simple letter. But your very first step is to load the TUTOR file into BrunWord. This takes even the complete novice straight into word processing and demonstrates the powerful editing and formatting features of BrunWord. There are also examples of printer control, showing how to create headings, to underline or to emphasis, and five deliberate spelling errors for you to correct. The tutor takes about 20 minutes to run through and after that you will feel confident to type in your own text.

BrunWord Features

*40, 80 or 128 column display *Touch typing speed over 200 words/min *True insert or overwrite *Justify or unjustify paragraph or whole text *Justified text has balanced appearance *Instant word wrap *Block save, move, copy, insert and delete *Local editing with word delete/undelete *Adjustable margins and TABs *Column/Line/Page display with file name *True word count *Find and replace *Help menus *Memory filing system *Single character embedded printer commands (18 with 3 printer codes and 21 with 10 printer codes) *Page throw markers *Multiple copies *Odd/even page headers/footers with page numbers *Multi file printing (new page or continuous) *Print specified pages *Works with any printer *True display superscript and subscript numbers *User defined print characters *Load ASCII files from other word processors *Save ASCII files for other word processors *Files can be encrypted *Maximum file size about 9 pages of text.

BrunSpell Features

*Memory resident with word processor *Checks 4,000 words/min *30,000 word dictionary *No American spellings *Add up to 5,000 of your own words *Instant lookup *Helps to find correct spelling *Automatic correction.

DataFile Features

*Alphabetical, numerical, date sorting on any field *User defined headings *Search routine *Data merging into BrunWord *Label printing.

BrunWord Junior

Low cost version of BrunWord 6128 on 3 inch disc, including the spelling checker, 30,000 word dictionary, TUTOR file and manual. Holds just one page of text and cannot save words to the dictionary. Otherwise as BrunWord 6128. Cost £18. Up grade later to BrunWord 6128 for £14.

Tasword Upgrade

Send your original Tasword 6128 disc (not the packing or manual), and £23.00. We will return your programme together with the full version of BrunWord 6128 with BrunSpell and DataFile.

Info-Script £50

The great power of any database is only realised when the data can be put to use. A database system is centred around saving, sorting, finding and displaying the data. Obviously, very essential features but only if there is a purpose to storing the data. That purpose might be names and addresses for mail merging, a stock list of items being sold that generates a buying list, a catalogue of your compact disc recordings so that you can take a printout with you to the shop, a catalogue of recipes so that you can have a print out in the kitchen of the in-season treats, a catalogue of garden activities that gives you a reminder list to hang in the garden shed.....

The common element being the need to take the data away from the computer, in a form that suits your immediate requirement.

We gave considerable thought to this and concluded that the only solution was a proper text handling system within the database itself. In other words, a word processor. We looked into designing a special word processor but quickly realised that BrunWord, with its memory filing system, is ideal.

This is the exciting concept of Info-Script. A comprehensive relational database integrated with a powerful word processor, giving total flexibility to the way that the data is printed. A fast, user friendly combination that has the depth of power to keep up with your needs. A mail shot, a restaurant wine list, a summary of expenses.....

BrunWord Upgrade

Send your BrunWord 6128 disc, BrunWord manual (not the packing) and a cheque for £22.00. We will record Info-Script, test the disc and return with a new manual.

BrunWord Elite £90

A superb programme which has printed this advertisement but the release date has been put back while we resolve problems with certain 24 pin printers. Meanwhile don't despair, buy Info-Script.

Our booklet BrunWord & Printer will need a few changes to the conclusions, so is also delayed.

Comparisons

We have tested BrunWord 6128, Protex (disc) and Tasword 6128 with the same file of 3366 words.

BrunWord scrolled 40% faster than Protex which in turn scrolled 19% faster than Tasword.

Protex was the fastest to justify but needed a separate operation to see the result. BrunWord produced the best appearance of all three and was 30 times faster than Tasword.

Our simulated typing test reached 218 words per minute. Both BrunWord and Protex had no trouble at this speed but Tasword was very slow inserting text into the start of a paragraph and could only handle 16 words per minute.

The spelling test checked all 3366 words. BrunSpell took 52 seconds and needed no disc changes. Prospell took 6 min 24 sec and needed 8 disc changes. Taspell took 18 min 46 sec and needed 3 disc changes.

100 Letters £15

This is a utility for use with Info-Script. It is supplied with over 50 pre-written letters and has a special format that will allow you to add hundreds of your own letters.

For example, you want to place a 'Wanted' advertisement to buy another CPC6128. Insert the Info-Script disc. Type RUN "INFO". Insert your data disc and load your name and address file. Insert the 100 Letters disc. FIND the 'Yellow Advertiser' record from your own file (now in memory). Type LET072 into the ACTION field and CPC6128 into field 17. Press T for Transfer. Info-Script will load letter 072, personalise it with the address of the paper and insert the 'Wanted' item. The letter is then in the word processor and can be edited in the normal way to be exactly what you want, and then printed out. When that is done press <ESC> * and you are back in Info-Script, with the 'Yellow Advertiser' record still selected, ready to address the envelope. You can write as many letters as you like without changing the disc and you will never wait more than a few seconds.

100 Letters is supplied with an operating manual which takes you easily into writing letters and explains, in simple terms, how to create your own letter patterns. An average CPC6128 owner, using easy patterns, can expand the library to about 100 letters but there is no limit.

Letters

I am extremely interested in the sound of your Info-Script. However, as the cost is £50 I am somewhat hesitant in purchasing and would therefore be grateful for any further literature. I am presently using Protex on ROM with Promerge and Pro-filer, but accessing Pro-filer is incredibly slow and long winded. Your advert would indicate that access time to stored data is much superior. Mr G (Nottingham).

Thank you for my recent copy of Info-Script. My euphoria has nearly died down now - it is superb. It is a big improvement on my Protex and Pro-filer in that it combines the two with vastly superior speed and is exactly what I need. Mr G (Nottingham).

May I take this opportunity to express my appreciation of BrunWord. My son has been the main user. After years of torture in school with pen in hand, the use of the word processor enabled him for the first time to concentrate upon the substance of what he wanted to write, and return later to correct and organise. The net result is that a young man who formally struggled at school and hated it, now accomplishes the written components of his course with ease and satisfaction. Mr G (Sutton Coldfield).

I have found it (BrunWord) a very easy word processor to use, and the more I use it the more I like it. The same goes for Info-Script, the more I use it the easier and more flexible it becomes. Mr L (Australia).

Please supply BrunWord 6128. I have both Tasword (used for his letter) and Protex. Why do you think I deserve the discount offered..... my age 76. Mr S (Glasgow). (see ACU Aug 89)

Send cheque/PO/Access number/Visa number to:

Brunning Software

34 Helston Road,
Chelmsford, Essex, CM1 5JF
Telephone (0245) 252854 (24 Hours)



BrunWord 6128 with BrunSpell & DataFile. . . £30.00
BrunWord 464 with BrunSpell & DataFile. . . £25.00
BrunWord Junior 6128 with BrunSpell. £18.00
Info-Script 6128 with BrunWord & BrunSpell. . £50.00
100 Letters (needs Info-Script). £15.00
BrunWord Elite and Info-Script include backup disc.
(All supplied on 3in Disc - state which computer)

All prices are inclusive for UK. Overseas orders sent insured air mail - Europe add £2.50 : Rest add £7.50

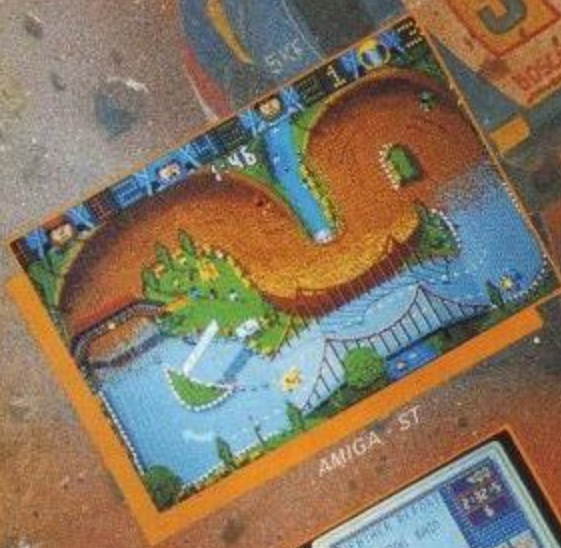
RALLY CROSS

A FUN TO
PLAY
SIMULATION

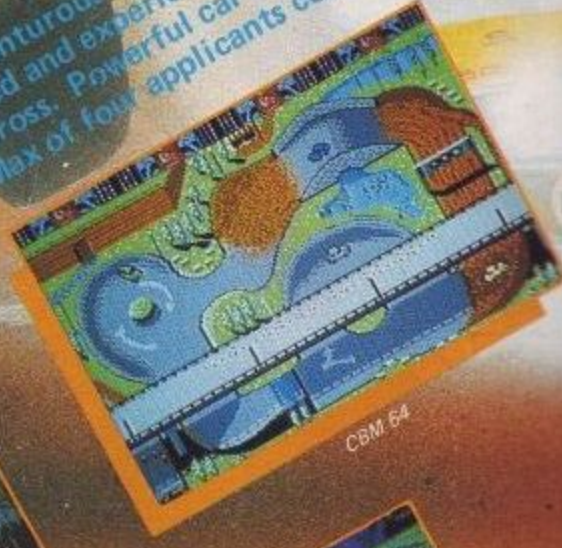
Challenge



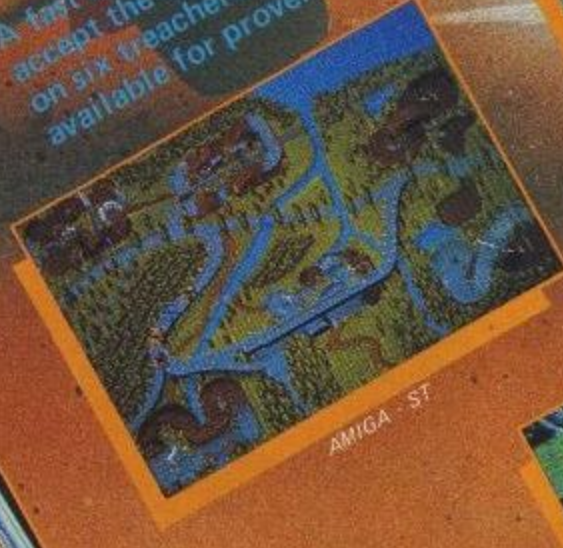
A fast and powerful car seeks an adventurous driver of easy courage to accept the challenge of highly talented and experienced computer drivers on six treacherous tracks of Rally Cross. Powerful car enhancements available for proven track record. Max of four applicants considered.



AMIGA - ST



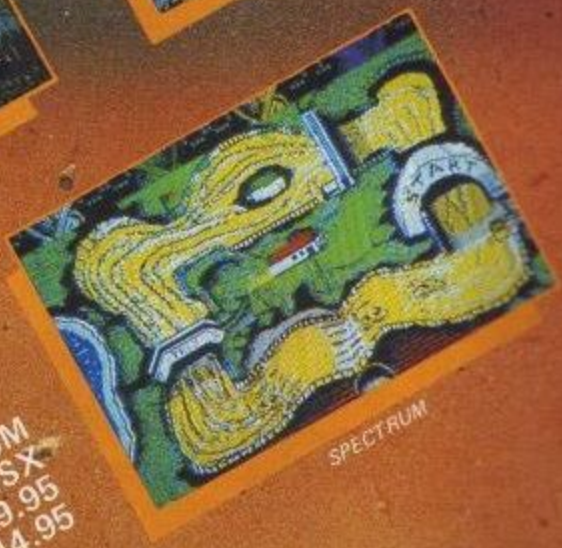
CBM 64



AMIGA - ST



AMIGA - ST



SPECTRUM

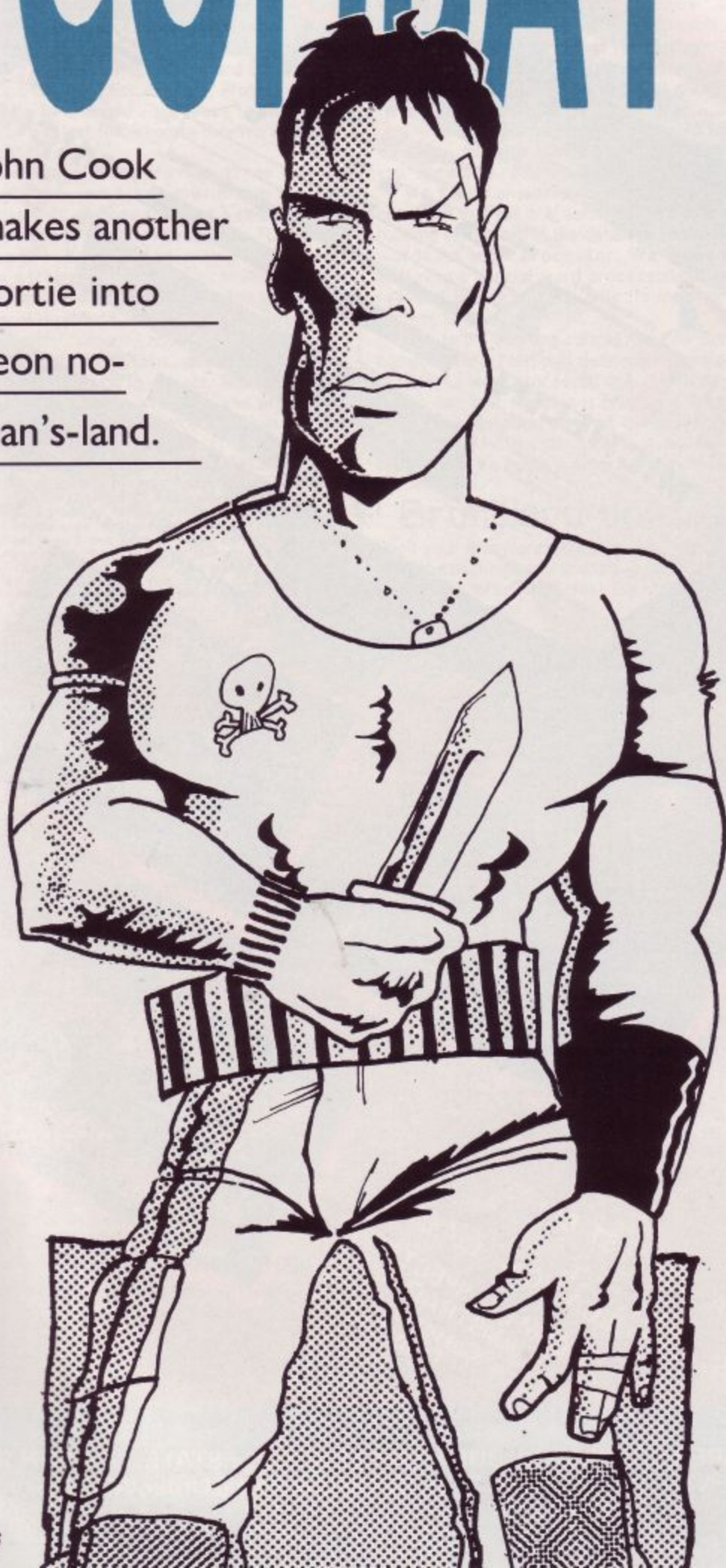
- AMIGA - ATARI ST £19.95
- IBM AT/XT (CGA/EGA/VGA) £24.95
- CBM 64 - SPECTRUM
- AMSTRAD - MSX
- Cassette £9.95
- Disc £14.95



ANCO SOFTWARE LTD., UNIT 10, BURNHAM TRADING ESTATE, LAWSON ROAD, DARTFORD, KENT.
 Telephone No.: 0322 92513/92518. Mail Order by Cheque, Postal Order, ACCESS or VISA. FAX No.: 0322 93422.

COMBAT ZONE

John Cook
makes another
sortie into
neon no-
man's-land.



Here we are, back in the combat zone, ducking and diving, dodging and weaving to avoid those stray photons as they ricochet off the screen and scream out into infinity. I mean, if they can transform aliens into clouds of sub-atomic particles, heaven knows what they might do to hair gel.

It has been another great month down in the arcades, I can tell you, with the usual number of new and spectacular titles to whack the spare shrapnel into.

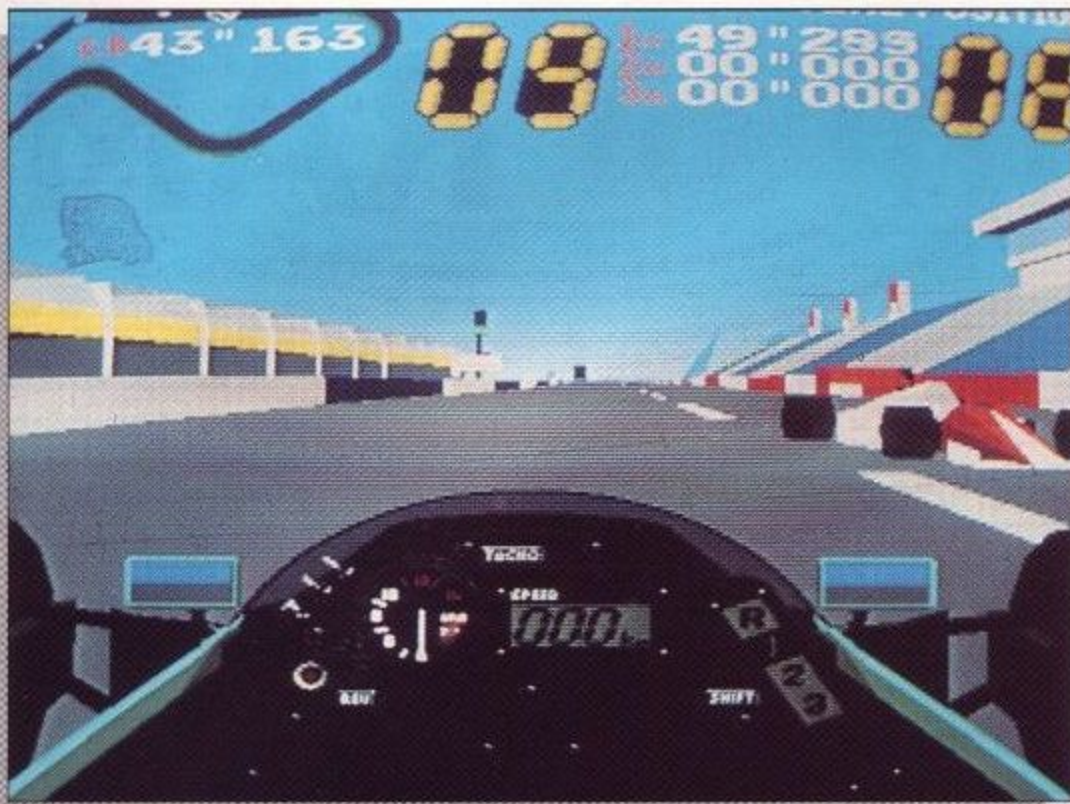
With so many new titles coming in every month, it is not that often that one game holds you for more than a few weeks. One that has got me hooked this summer, however, is a title from Toaplan called *Hellfire*. You might remember me mentioning it in passing a few months ago. It is a

Nemesis clone with the variation that you can alter the direction of fire of your spaceship, cycling through forward, back, up/down and diagonal fire.

All this time afterwards I still play the machine – almost to destruction – and so, by the looks of it, do several others. Check it out yourself if you can, assuming you have not already and expect an ‘artistically inspired’ CPC version from someone or other in the near future.

Most impressive this month has to be another game I mentioned way back at the start of the year – *Winning Run* from Namco. *Winning Run* was previewed in January at Europe’s premier arcade show, the ATEI. Strangely enough, however, it is only relatively recently that the units have made it into this country in any quantity. Rush cut and search for one immediately!

It has to be the best racing game on a coin-op to date. Best? How about *Super Monaco Grand Prix* from Sega,



Winning Run

with those astonishingly fast sprite routines, mega sound and wobbly seat? Mm, well, SMGP is completely wonderful in its own way – believe me, I love it – but what does Winning Run have that it does not? The Polygoniser, that is what.

This is a software 3-D-filled polygon graphics system that has been specifically developed for the game. Yes! A three-dimensional racing game! Seen *Carrier Command* on the CPC? Astonishing though that is, you cannot help but hope for a little more colour and a little more speed. Well, throw in two 68000 chips, half a ton of custom chips and a steering wheel and you have Winning Run.

Fast, loud, realistic, (particularly on the 'technical' 5 speed level); this is the works. This is the race game of the moment. And try to play on the sit-in unit if you can as well, because the servo movements are perfectly coordinated, and violent enough to make you wish you had not just swallowed that large portion of chips! Catch this one, if you can!

Meanwhile, there have been more shooting games slipping on to the scene. The phenomenal success of *Operation Wolf* last year was not maintained by Taito's two player follow-up, *Operation Thunderbolt*. Yet games like *Mechanised Attack* and *Cabal* (soon to be on home format from Ocean) have amply catered for and been well received by the mob of rather strange individuals that are into this kind of thing.

Two more this month: firstly, how about *Rambo III*? This licence (not to be confused with any home format



Rambo III



Dynamite Duke



Spy

game of the same name) draws heavily on both the *Cabal* style of game play and the *Op Wolf* genre, yet turns out to be okay in its own way. The original touch is the use of digitised graphics in the attract modes and between levels – never (to my recollection) seen before. It does

seem as though anything to do with Rambo sells like mad, so it will be interesting to see if the phlegmatic coin-op industry cedes to Stallone Fever!

Secondly there is a cute number called *Dynamite Duke*. This is more similar to *Dead Angle*, in that you have a view from behind your man, out into the world. Unlike *Op Wolf* this has the advantage that you can see the area you have to defend – your body – so you can dodge bullets much more easily.

Duke is set the impossible task of saving the world from clones, or something, being himself half-man, half-machine. Poor chap – that must explain all that latent aggression which comes out as he sprays the surroundings with hot lead. A good game. My forays around the country suggest that it is out there in numbers, so why not give it a try.



Secret Agent

Finally this month, the world of espionage has infiltrated the world of the coin-op in the shape of two games: *Secret Agent* from Data East and *Spy* from Konami. I must admit, I like *Secret Agent* best.

Data East has developed a nice graphic style for its last few games – *Dragon Ninja* and *Robocop*, for instance. This has been maintained in *Secret Agent*. Here you are trying to rescue the President of the United States, who has been kidnapped by terrorists. And a varied job it is too – skydiving, driving, motorcycling, scuba diving, the lot. A simple enough game, but good fun nevertheless.

Spy, in contrast – well, I just could not get into it. It does have the advantage of a two-player mode in which both of you put the boot in for some 'truth and justice' cause, but it did not seem to have the flair of its rival. Maybe it is one that grows on you, so I will try reporting back on it later. In any case, after *Thundercross* I could forgive Konami anything this year.

That is all for now. Hang loose until next month, give those aliens hell and if you happen to be playing pinball at any time, do not press both flippers at once, will you?

A fistful of RAM



In this month's
 Microscope, our
 resident boffin
 'Clever' Trevor
 Cummings comes up
 with the goods once
 more as he tells you
 how to cram an extra
 16K of RAM into your
 Amstrad CPC.
 Here's one
 he prepared
 before the
 show.

If you have a suitable romboard and you fancy writing your own ROM program then this project is for you. For a few pounds you will have 16k of RAM, called a RAM/ROM, which plugs into a spare slot in your ROM-board.

Because it is RAM you can write your program to it and then it will behave just like a ROM until you either re-write it or switch the computer off.

From the outset you will be able to test your developing ROM step by step, fix the bugs and test it again, without ever having to set up a programmer or erase an eprom.

Without it you have to write your program, blow it onto an eprom and test it to see if it works correctly. If it does not then you are back at the drawing board and your eprom needs

erasing. In fact, the only time you will need an eprom programmer is when the program is finally finished, and even then, if you do not have one, Goldmark Systems (07072-71529) will do the job for you.

I am particularly pleased to write this project because of its usefulness. Two years ago the cost of memory chips soared to three or four times their previous level because of business practices in Japan and the USA. One effect was a rise in the price of the

DK'tronics RAM packs. Another was that this project had to be shelved. Recently memory prices have fallen quite dramatically. The last to fall were the chips we need, and the project is now viable again.

The concept is not new. RAM/ROMs were an option for the Britannia and Amram boards. The only one still available is specially designed to plug into the small connector of the Rombo board. Normally costing £20, Rombo Productions are offering it at just £14.95 to accompany this project. (6 Fairbairn Road, Kirkton North, Livingstone, EH54 6TS. Tel 0506-414631.) I am indebted to them for permitting the use of their software for this project.

How it works

Two 8k static RAM chips are piggy-backed with all the pins except pin 26 (CE - active high) soldered together. They are mounted in a 28-pin socket and the whole unit is plugged into a ROM socket. A13 is fed from the romboard to pin 26 of the bottom chip, and a lead is taken from it to both inputs of a 2-input nand gate. This inverts A13 so that its output is fed to pin 26 of the top chip. ROMs are accessed at the 16k of addresses between C000 to FFFF: one 8k chip will therefore occupy the bottom half, C000 to DFFF, and the other E000 to FFFF. If you look at these numbers in binary you will see that A13 is low for the bottom half and high for the top. When A13 is low, pin 26 on the bottom chip is low, and the chip is disabled. But A13 is inverted and fed to the top chip as a high signal, thus enabling it. When A13 is high, the

bottom chip is enabled and the top one disabled. So the top chip occupies C000 to DFFF and the bottom one E000 to FFFF. Using address lines like this to select specific chips is common.

Both pins 27 write enable are soldered together and connected - via a 2k2 resistor - to 5v but they are not allowed to reach down to the ROM-board. Instead they go to a push button and on to the Z80's WR line. When the button is pushed all writing to the screen area - C000 - FFFF, which is parallel to the ROM area - will go to both the screen and the RAM/ROM. When the button is released, nothing can be written to the RAM/

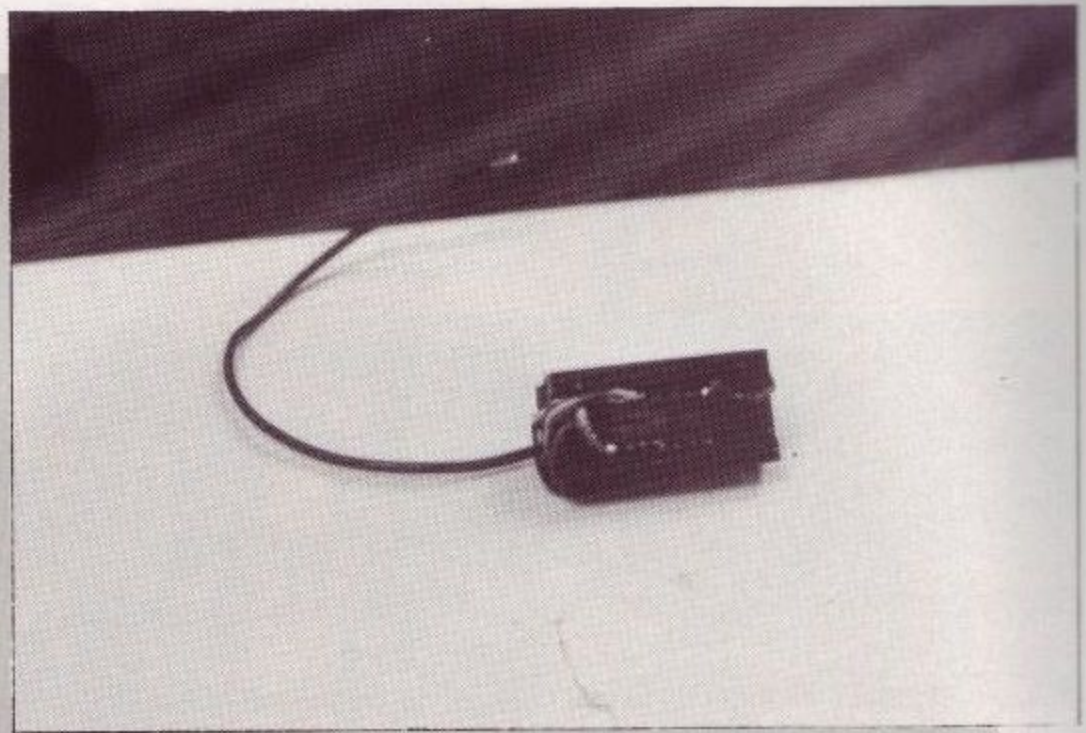
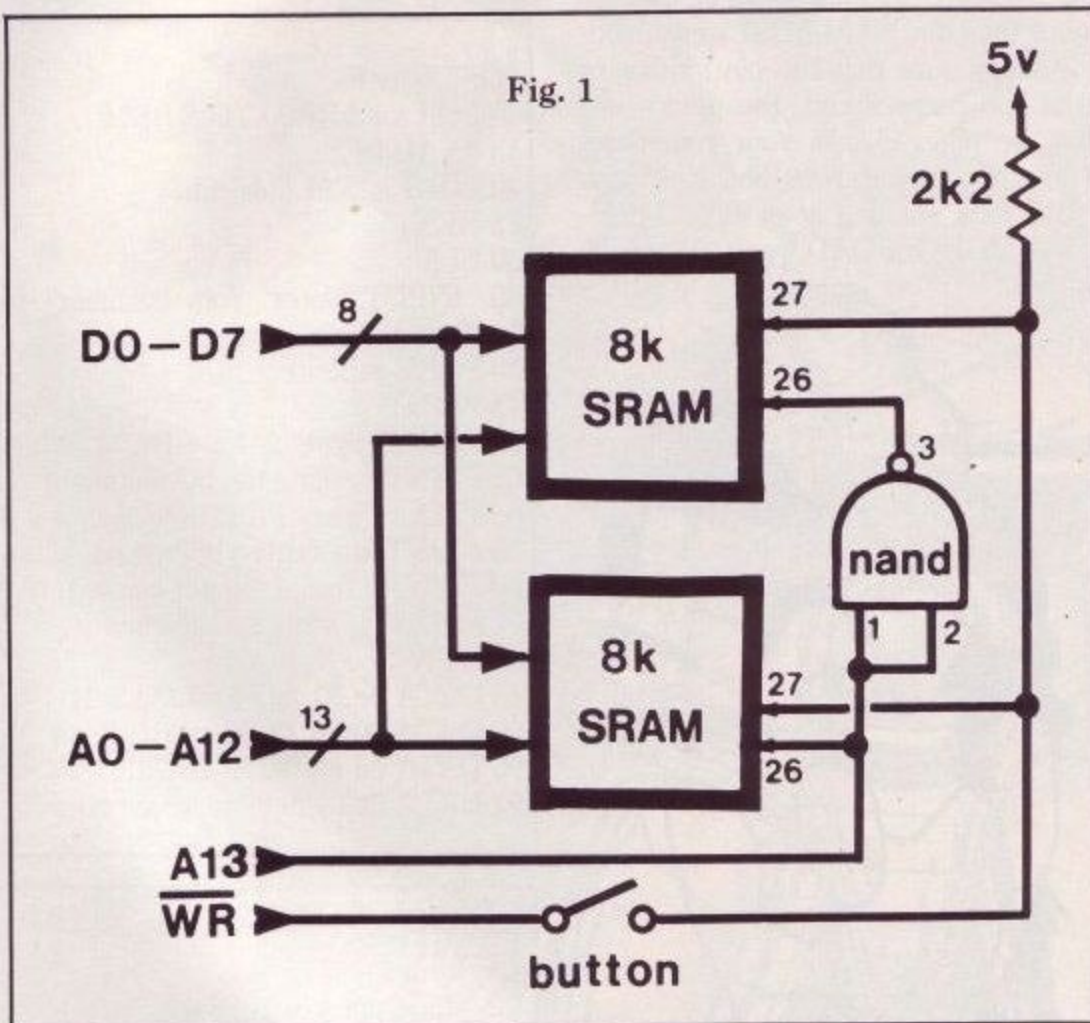


Fig. 1



ROM. The rest of the pins are fed down to the ROMboard so that whenever the ROM, of the slot you have used, is addressed, it is the RAM/ROM which is accessed.

There are various ways of decoding ROM slots and enabling ROM chips. A signal produced by the CPC for the purpose is called ROMEN (ROM enable); it is used by the system to indicate a ROM access, and is made available on the expansion connector. Some boards are designed using ROMEN to enable ROM chips; others enable them without it but use it later in the circuit instead. We need to

enable the RAM/ROM, for the write operation, when the system is not producing ROMEN and only those boards which use the signal later in the circuit are suitable. The following boards are known to be suitable for the RAM/ROM: Rombo, Amram, Britania and Cirkit.

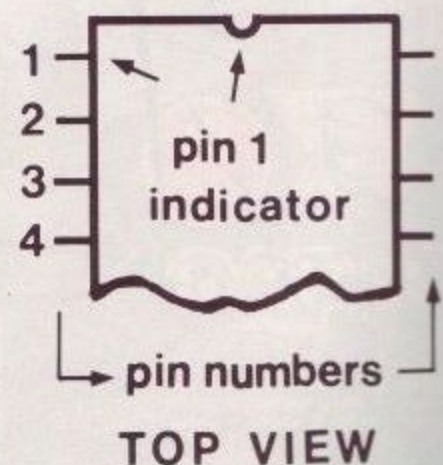
Construction

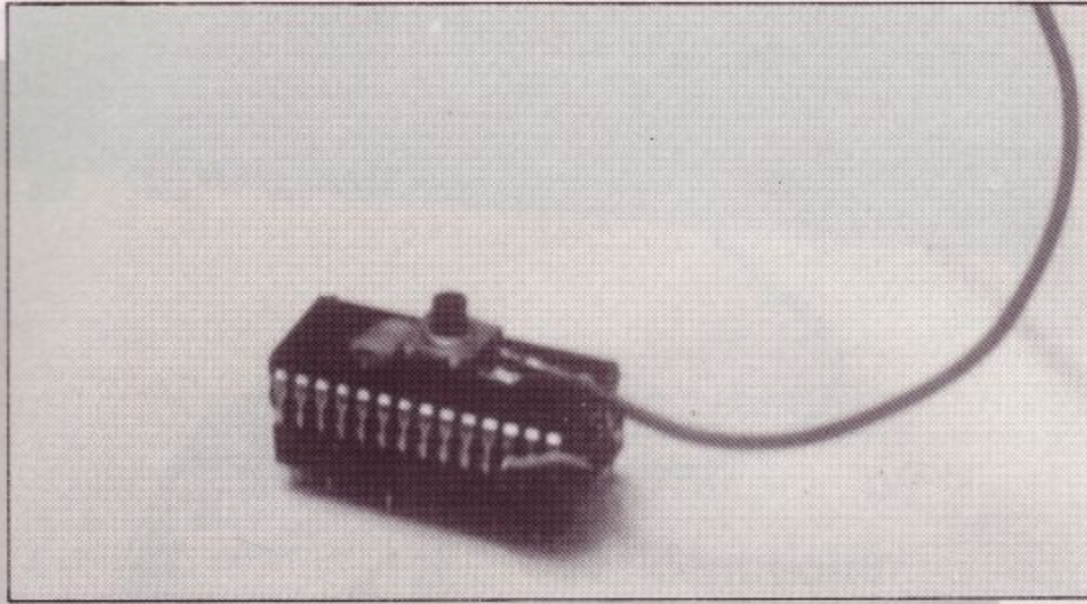
Piggy-back the two RAM chips by pushing one on top of the other, making sure that the pin 1 indicators are at the same end (Fig.2). Solder all pins of the top chip to the same pins of the bottom chip except pins 26, but do

not allow the solder to run down the bottom pins; they need to fit well in the socket. Cut pin 26 of the top chip so that it cannot reach the bottom chip but leave enough of it to solder a wire to. Either cut pin 27 of the socket off or, better still, remove it, so that it cannot contact the romboard's socket. The space inside the socket is needed for the nand gate and resistor so if your socket has a cross-member in the middle, cut that out too. Solder a wire, a few inches long, to the top of each of the following: pin 28 (5v), pin 14 (0v), pin 27, pin 26 top chip and pin 26 bottom chip. Insert the chips into the socket.

To keep it all neat, the object now is to fit everything inside the socket with nothing sticking down to prevent a full insertion into the romboard's socket. To do this, cut all the nand gate's pins back so they are level with its bottom, turn the RAM assembly over and place the gate chip feet-up in the socket space. You can now see what you have to do. Pin 14 of the RAMS has to be soldered to pin 7 of the nand gate, pin

Fig. 2





28 to pin 14, pin 26 bottom chip to pins 1 and 2 and pin 26 top chip to pin 3. The resistor can be fitted in there as well, one end being connected to the gate's pin 14 and the other to one terminal of the push button. Pin 27 of the RAMs connects to the same terminal, but it may be convenient to solder it to the resistor wire. The wires need to be cut to length and soldered into place so that nothing sticks down. You can now solder a wire of several inches to the button's other terminal.

The button itself can be mounted on top of the assembly either by glueing it or by enclosing the whole unit in masking tape, with the flying lead sticking out. This lead must be connected to the computer's WR line (pin 33 of the expansion connector). Consult your computer's manual to find the right pin, and follow it on your romboard until a suitable connecting spot is found. How you connect it is up to you: it could be soldered straight onto the board or a post could be fitted to the board and the lead clipped to it. You could even have the lead

fixed to the board with a clip on the other end attached to a short lead on the RAM/ROM. This would be useful if more than one RAM/ROM were used.

Making sure that the pin 1 indicator is at the correct end, the device can now be plugged into your romboard. Turn the computer on and load your ROM data starting at &4000. MEMORY &3FFF:LOAD"your ROM",&

4000 will do it. Run the Basic program. You will be asked which ROM slot you wish to write to. You must enter the one where your RAM/ROM is installed but you cannot use slot 0 (used by Basic) or slot 7 if you have a disc drive. Instructions will then appear on the screen. As the RAM/ROM is loading the screen will fill up. When it is full, release the button and reset the computer. The loader program will remain intact for further RAM/ROM loading and your ROM will be ready for use. One word of caution. Many static RAMs are CMOS devices and can be damaged by static electricity: to be on the safe side, avoid handling the pins whenever possible. This does not mean one touch and they are dead. It does mean, however, that they should be handled with caution.

SOFTWARE

```

10 FOR x=&BE00 TO &BE1F
15 READ b$
20 POKE x,VAL("&" + b$)
25 NEXT
30 CLS
35 INPUT"Enter rom number to
load";a
40 POKE &BE01 ,a
45 PRINT
50 PRINT"Type CALL &BE00. While
55 PRINT"holding the button down
60 PRINT"press RETURN. Release
65 PRINT"the button before READY
70 PRINT"prompt. Reset computer
75 PRINT"to initialise the rom.
80 NEW
85 DATA 0e,01,cd,0f,b9,f3,c5,21
90 DATA 00,40,11,00,c0,01,00,40
95 DATA ed,b0,06,10,1b,7a,b3,20
97 DATA fb,10,f9,cl,cd,18,b9,c9
    
```

PARTS LIST

Qty	Item
2	static rams 8k (6264)
1	i/c socket 28 pin
1	push button
1	resistor 2k2
1	quad 2 input nand gate (74LS00)
	wire

At the time of writing the retail prices of ram chips have not caught up with the new reductions. I suggest one or two enquiries to people like Maplins and Tandy for their latest prices. To make things a little simpler we have arranged for a full kit of parts, costing £9.50, to be available from Microstyle, 212 Dudley Hill Road, Bradford, BD2 3DF. Tel 0274-636652.



A TITANIUM BLADE

A HEART OF STEEL

STRIDER



86% **THE ONE**



CLASSIC



CAPCOM

U.S. GOLD

Available on:
 CBM 64/128 & AMSTRAD
 Cassette & Disk
 SPECTRUM 48/128K Cassette
 ATARI ST, CBM AMIGA &
 IBM PC & COMPATIBLES

© 1989. CAPCOM CO., LTD. Manufactured under license from CAPCOM CO., LTD. JAPAN. STRIDER™ and Capcom™ are trademarks of Capcom Co., Ltd. Manufactured and distributed under license by U.S. Gold Ltd., Units 2/3 Holford Way, Holford, Birmingham. B6 7AX. Tel 021 625 3388.

ONE MAN – ONE SWORD – ONE FREE WORLD!



Pining for the fjords

Make your own
Norwegian landscape
with our three-part
fractals feature.

The next time you are passing through Norway on your way to the shops, take a good close look at the fjords because they are well worth the visit. Amazingly, no matter how closely you look at them, they still have crinkly edges, and these all look like smaller fjords.

If you were of a mind to create fjords of your own, there are two ways of going about it. The first involves rubbing large amounts of rock, sea and ice together for a few million years (but more often than not, you will only end up with cold, muddy seawater). The second approach is to take a computer, like a CPC, apply fractal transformations to some random numbers and within minutes: fjords.

The magic word here of course is "fractal". This is a very simple animal which produces very complex patterns and which has become synonymous with computer graphics. You may have already seen the Mandel-

brot set and Dragon curve programs and may have played games like *Koronis Rift*, *Sentinel*, or more recently, *Captain Blood*, which all feature fractal landscapes.

Fractals are shapes that are produced by repeatedly applying a series of rules to a simple shape; the more often you apply the rules, the more complex the shape becomes, revealing more detail and allowing you to look more closely at the shape.

If small errors creep into the calculations, the pattern will quickly deviate from the original shape, producing a new, but still related shape. Take two points (A and B), for example, and give each a random height (height A and height B).

Next we need to invent a rule for creating a new height for the point midway between them. "At the midpoint the new height is the average of the two original heights", for instance. This will now give us three points; the second application makes five points;

the third, nine, and so on. Thus each time the rule is applied new points are created, this could carry on until there are an infinite number of points and the distance between them is so small as to be unmeasurable.

Program 1 illustrates this technique, because as we are plotting the results to the screen, the program will stop when the distance between two points is "1". The WHILE...WEND loop steps through the array, halving the STEP size for the FOR...NEXT loop, halving the distance between the points. Type in this listing and save it as "progl.bas".

When this program has been entered, saved and run, enter a number for the random number seed which will be used to generate two random points (5 has been used in the example). As you will see, the effect is to draw a straight line between the two points. (Incidentally, this is a faster method than those traditionally used by line-drawing routines, but it is

never used because each point on the line has to be held in an array – which is generally impractical.) This does not look like a landscape, however, so a small random error is added to the calculation each time and the effect is somewhat different. To see this, change line 1150 to read:

```
1150 height[midx]=( height[midx-half] + height[midx+half] )/2 + (1-2*RND)*10
```

Save the modified program and run it. The line now changes into one that randomly weaves around the original. Unfortunately, this line is very erratic and still does not resemble any natural geological occurrence. So now we make smaller the amount of error that we add for points that are closer together. We do this by changing line 1150 again, so that it now reads:

```
1150 height[midx]= (height[midx-half] + height[midx+half] )/2 + (1-2*RND)*maxh
```

and by changing line 1180 as well to read:

```
1180 midpoint=half: maxh=maxh / 2
```

Finally we have a smooth random curve that could easily be used to represent the horizon of an imaginary landscape. The results of all three versions of the program are shown in Fig. 1. Now we can state our refined rule: "At the midpoint the new height is the average of the two original heights, plus some error, which is proportional to the distance between them." This looks like:

$$\text{height } M = \frac{\text{height } A + \text{height } B}{2} + \text{RAND (distance } B - \text{distance } A)$$

All that is needed now is to use this



Fig 1

simple rule to create a landscape in three dimensions, which involves adding a second axis (Y).

In the three-dimensional program, Program 2, for each pair of points that make up the line in Program 1, we are now considering four points that make up a square, and calculating the midpoints of each edge and of the centre (a,b,c,d and m of Fig. 2). The subroutine "sub 1" calculates these midpoints, and the WHILE...WEND loop and the pair of FOR...NEXT loops ensure that these are calculated for all points in the array – in much the same way as in Program 1.

```
1000 ' 2-D Fractal Landscapes
1010 ' Program 1
1020 '
1030 '
1040 DEFINT a-z: INPUT "Enter Seed:";iseed
1050 MODE 0: xscale=4: RANDOMIZE (PI+iseed\PI): PRINT "Seed = ";iseed
1060 size=128: DIM height[size]: maxheight = 400/4
1070 height[0]=maxheight+RND*maxheight
1080 MOVE 0,0: DRAWR 0,height[0],1
1090 height[size]=maxheight+RND*maxheight
1100 MOVE size*xscale,0: DRAWR 0,height[size]
1110 midpoint=size: maxh = maxheight
1120 WHILE midpoint>1
1130 half=midpoint/2
1140 FOR midx=half TO size-(half) STEP midpoint
1150 height[midx]=( height[midx-half] + height[midx+half] )/2 + (1-2*RND)*half
1160 PLOT midx*xscale,height[midx],4
1170 NEXT
1180 midpoint=half
1190 WEND
1200 END
```

```
1000 ' 3-D Fractal Landscapes
1010 ' Program 2
1020 '
1030 '
1040 DEFINT a-z: INPUT "Enter Seed:";iseed
1050 GOSUB 1380: MODE 0: xscale=4: yscale=2: RANDOMIZE (PI+iseed\PI):
PRINT "Seed = ";iseed
1060 size=64: DIM height[size,size]: maxheight=400/2
1070 GOSUB 1300 ' prime corners
1080 midx=0: midy=0: midpoint=size: maxh=maxheight/4
1090 WHILE midpoint>1
1100 half=midpoint/2
1110 FOR midy=size-half TO half STEP -midpoint
1120 FOR midx=half TO size-(half) STEP midpoint
1130 GOSUB 1440 ' calculate fractals
1140 NEXT
1150 NEXT
1160 midpoint=half: maxh=maxh / 2
1170 WEND
1180 GOSUB 1500
1190 END
1200 ' sub 1
1210 ' put number into array and plot value
1220 '
```

```

1230 IF height[dx,dy]<>0 THEN GOTO 1260
1240 height[dx,dy]=r: ik=r \ (maxheight/15)+1
1250 PLOT dx*xscale,dy*yscale,ik
1260 RETURN
1270 ' sub 2
1280 ' prime corners
1290 '
1300 dx=0: dy=0: r=RND*maxheight/2: GOSUB 1230
1310 dx=0: dy=size: r=RND*maxheight/2: GOSUB 1230
1320 dx=size: dy=0: r=RND*maxheight/2: GOSUB 1230
1330 dx=size: dy=size: r=RND*maxheight/2: GOSUB 1230
1340 RETURN
1350 ' sub 3
1360 ' set inks
1370 '
1380 FOR i=0 TO 15: READ j: INK i,j: NEXT
1390 DATA 13,0,1,2,5,11,3,9,10,18,21,19,20,23,24,26
1400 RETURN
1410 ' sub 4
1420 ' calculate midpoint fractals
1430 '
1440 dx=midx: dy=midy-half: r=(height[dx-
    half,dy]+height[half+dx,dy])/2+2*(RND-0.5)*maxh: GOSUB 1230
1450 dx=midx: dy=midy+half: r=(height[dx-
    half,dy]+height[half+dx,dy])/2+2*(RND-0.5)*maxh: GOSUB 1230
1460 dx=midx-half: dy=midy: r=(height[dx,dy+half]+height[dx,dy-
    half])/2+2*(RND-0.5)*maxh: GOSUB 1230
1470 dx=midx+half: dy=midy: r=(height[dx,dy+half]+height[dx,dy-
    half])/2+2*(RND-0.5)*maxh: GOSUB 1230
1480 dx=midx: dy=midy: r=(height[dx-
    half,dy]+height[dx+half,dy]+height[dx,dy+half]+height[dx,dy-
    half])/4+2*(RND-0.5)*maxh: GOSUB 1230
1490 RETURN

1500 ' sub 5
1510 ' isometric projection
1520 '
1530 FOR j= size TO 0 STEP -1
1540 FOR i=0 TO size
1550 r=height[i,j]: ik=r \ (maxheight/15)+1
1560 MOVE 300+(i-j)*xscale/2,128+(i+j)*yscale/2,ik
1570 DRAW 0,height[i,j]
1580 NEXT i
1590 NEXT j
1600 RETURN

```

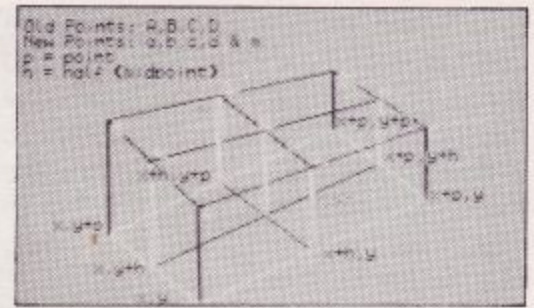


Fig 2

On running this program, a pattern will build up; long before it is complete, you will be able to determine the general shape; and as the program progresses, more detail will be added. If you increase the 'size' of the landscape, even more detail will be revealed. If we imagine that all the black and blue areas here are seas and the green and brown regions are land



Fig 3

masses, the final image looks convincingly like a contour map, the coastline having the characteristic crinkliness of a Norwegian fjord. (Change the variable 'size' to 128 to produce Fig. 3. This will take some time to plot.)

To view this map in a three-dimensional isometric form like those used to illustrate geography text books, add Subroutine 5 to the end of the program.

The result of this additional routine is shown in Fig. 4; although lacking in



Fig 4

perspective, it does resemble a section of a landscape.

The slow Basic routine for calculating the fractal will be replaced next month by a faster machine code version, and the beginnings of the *Landscape Generator Program* will start to emerge. The following month will see the isometric projection routine of Subroutine 5 converted into a true perspective image. Experiment with the routines in the meanwhile, and see what can be achieved by modifying the program.

DISCOUNT SOFTWARE

HAS ANYBODY SEEN SWIFT?

from M.J.C. SUPPLIES

DISC GAMES

MJC SPECIAL
New Zealand Story
RRP £14.99. Our price £9.95
Offer ends 30/10/89

Indiana Jones and the	
Last Crusade	11.95
APB	11.95
Gemeni Wing	11.95
3D Pool	11.95
Dominator	12.95
Obliterator	11.95
Time + Magik	11.95
Lancelot	14.95
Forgotten Worlds	12.95
Silkworm	12.95
Skweek	12.95
Emlyn Hughes Soccer	11.95
Time Scanners	12.95
Renegade III	11.95
Chuck Yeager Aft	11.95
Running Man	11.95
Licence to Kill	11.95
Rick Dangerous	11.95
Supreme Soccer Challenge	12.95
Thunderbirds	11.95

CORNIX SOFTWARE

CARD INDEX: Easy to use filing system
CASS: 19.95
DISC: 24.95

SIMPLE ACCOUNTS: easy to use
accounts ideal for small business
(includes VAT). CASS: 34.95
DISC: 39.95

JOB ESTIMATOR: useful tool for con-
tractors. DISC: 39.95

PRODUCT COSTING: Disc: 39.95. Full
specifications on all of the above pro-
grams on request.

EDUCATION

Animal Veg. Mineral	11.95
Answerback Junior Quiz	11.95
Factfile Arithmetic	7.95
Factfile Spelling	7.95
Factfile Sports	7.95
Fun School for 2-5 years	7.95
Fun School for 5-8 years	7.95
Fun School for 8-12 years	7.95
Fun School 2 for under 6 yrs	9.95
Fun School 2 for 6-8 yrs	9.95
Fun School 2 for over 8 yrs	9.95
World Wise	11.95

Note: Factfiles are question packs only and
require the Answerback Junior Quiz.

DISC SERIOUS

Protext	17.95
Prospell	16.95
Promerge	16.95
Arnor Filer	18.95
Arnor Office Suite	26.95
Tasword 6128	23.95
Taspell	12.95
Tasprint	10.95
Tascopy	10.95
Tasdiary	10.95
Tassign 6128	23.95
Qualitas Plus V.2	14.95
Qualitas Font Library	11.95
Qualitas CPM + Utilities Disk	8.95
French Mistress	16.95
German Master	16.95
Spanish Tutor	16.95
Masterfile III Database	29.95
Mastercalc 128	25.95
Matrix Spreadsheet Plus	29.95
Stockmarket	25.95
Stop Press Desktop Publishing	29.95
Extra Extra	19.95
Maxam (Assembler/Diss)	18.95
Poke Easy Plus	14.95
Mini Office II	13.95
Rodos Extra Disk	8.95
Advanced Art Studio	19.95

CPM BASED

At Last Plus	29.95
Supercalc 2	44.95
Arnor C Compiler	39.95
Maxam II	39.95
Fortran	39.95
Nevada Cobol	39.95
Hisoft Devpac 80	39.95
Hisoft Pascal 80	39.95
Hisoft C Compiler	39.95
Iankey 2 Finger Typing	19.95
Iankey Crash Course	19.95

MJC SPECIAL

Protext CPM: including
Spellchecker & Mailmerge
RRP £59.95 OURS £39.95

CASSETTE BASED

Mini Office 2	9.95
Maxam 464	15.95
Protext 464	15.95
Tasword 464	15.95
German Master 464	14.95
French Mistress 464	14.95
Answerback JNR Quiz	8.95
Italian Tutor	14.95
Spanish Tutor	14.95

ALL ABOVE PRICES INCLUDE VAT, POSTAGE & PACKING IN THE UK.
THE ABOVE SOFTWARE IS ONLY FOR THE AMSTRAD CPC RANGE

ACCESSORIES

DKT 64K Memory Exp	45.95
AMX Mouse + Interface	39.95
Multiface II Plus	42.95
Printer Lead 1M	8.95
Printer Lead 1.5M	9.95
Printer Lead 2.0M	10.95
3" Disc Cleaner	6.95
Amstrad RS232 Interface	55.95
Mono Screen Filter	12.95
Colour Screen Filter	14.95
Comp Pro 5000 Joystick	13.95
Quickshot Turbo Joystick	9.95
Cruiser Joystick	9.95
464 Monitor Ext Leads	6.95
6128 Monitor Ext Leads	7.95
1000 Fanfold Labels	6.95
Second Drive Lead	7.95
AMX Mouse + Art Software	49.95
AMX Mouse + Stop Press	59.95
464 Dust cover (Mono/Col)	7.95
6128 Dust Cover (Mono/Col)	7.95
KDS 5 1/4" 800K, Disc Drive (state 464/6128)	149.95
KDS 8 bit Printer Port	18.95

BOOKS MANUALS

Adv Amstrad Graphics	7.95
Mastering Machine Code	8.95
Programming the Z80	19.95

RIBBONS

Printer	1	2	5
DMP 2000/2160	3.50	6.00	14.00
Panasonic 1080/1081	3.95	7.00	16.00
Citizen 120D	3.95	7.00	15.00
Star LC10 (Black)	3.95	7.00	15.00
Micro-P165/200	4.95	8.00	18.00
Star LC10 Colour	5.95	11.00	—

Genuine Amsoft CF2 Disc
10 for £25.95

PLEASE CALL FOR AVAILABILITY

ROM BASED

Protext	27.95
Prospell	22.95
Promerge +	22.95
Maxam	27.95
Maxam 1.5	20.95
Utopia	20.95
BCPL	21.95
Rodos	28.95
Cage Rom (state which I/Face)	31.95
Rombo (if purchased with ROM)	28.95
KDS Rom Board (holds 6)	24.95

Quali Pack V.2

The Print Enhancement Package
Qualitas Plus V.2
KDS 8-bit printer port
RRP £36.90
Package Price £34.95
Quali Pack Extra V.2
Qualitas Plus V.2
KDS 8-bit printer port
Qualitas font library
RRP £51.85 Our Price £44.50

PRINT COLOUR GRAPHICS!

At last it is possible to get colour screen
dumps from a 6128!
Colourdump two is available exclusively
from MJC Supplies. Will take a standard
screen file from the Advanced Art Studio
or created with Amx Art and Prints out in
full colour on a Star LC10 colour printer.
You choose which colours on paper
represent which on screen, for total
control and variation.
Also works on Epson Compatible
(inc Dmp 2000/2160).

Colourdump 2 12.95 with coloured
ribbons.

Advanced Art Studio £19.95
Star LC10 colour printer 214.95

(Printer price applies to orders
received before 30/9/89)

PRINTERS

All printers listed have a ten inch
(A4) carriage, are Epson
compatible, and feature friction
and tractor feed mechanisms for
continuous or single sheet paper.
All prices include the necessary
cable.

CITIZEN 120D

Cheap, Epson compatible, giving a range of text sizes
and effects in draft mode.
Limited sizes and effects in NLQ.
£139.95

PANASONIC KXP - 1081

Offers all the draft model text sizes of the DMP 2160, but
is better built, more reliable, and offers NLQ in all sizes
and effects, for the same price.
Highly recommended.
£159.95

STAR LC-10

As well built and reliable as the Panasonic. Has four NLQ
fonts (typefaces), in combination with all sizes and
effects. New low prices makes it well worth considering.
£179.95

STAR LC-10 COLOUR

All the features of the LC-10, but with a seven colour
option for colourful text. If you want colour graphics
please call first for advice.
£234.95

STAR LC 24-10

24 pin version of the LC-10. Has 5 excellent letter quality
fonts available with all sizes and effects. Two extra
effects, outline and shadow are also featured.
Good value.
£269.95

Overseas Orders Welcome - Please write for details

WE ARE NOW IN OUR FIFTH YEAR OF SPECIALISING IN AMSTRAD MAIL ORDER. OUR POLICY IS TO PROVIDE THE WIDEST RANGE AT
DISCOUNT PRICES WITH A FAST TURN AROUND TIME - TRY OUR SERVICES WITH CONFIDENCE

CALLERS WELCOME: Mon-Fri, 9 to 5, Sat 10 to 4

PLEASE SEND CHEQUES/POs TO:



M.J.C. SUPPLIES, (ACU)

40a Queen Street, Hitchin, Herts SG4 9TS

Tel: (0462) 32897/420847 or 421415 for enquiries/Credit Card orders

PROPRIETOR M.J. COOPER

FOOTBALL & TAG

BY ROBERT FIFIELD

This may not look like a 10-liner but it is in fact two games in one. Both games use the same

main code for the unusual character movements. Each of these games requires two players.

In the football game you must guide the ball into the opponent's net. This is not as simple as it sounds because the players move as though they are on ice. The second game is 'tag'. The player who is flashing is *it* and must touch the other player to pass *it* on.

Controls for both games are as follows. Player one A = up, Z = down, X = left and C = right. Player two uses the cursor keys.

```

100 WHILE INKEY$("<>")="" :WEND:MODE 1:INK 1,24:INK 2,13:INK 15,26,14:SPEED INK 40,40:
BORDER 16:DEFINT a-z:o=2:m=1:n=15:j=m:k=n:e=100:f=200:g=500:h=f:u=300:v=h:ENV 1,
3,5,1,9,-1,2:ENT 1,4,5,1,8,-3,2:LOCATE 5,10:INPUT "PLAY TAG:(1) OR FOOTBALL:(2)"
:p [8D]

110 PRINT CHR$(23)+CHR$(1):MODE 0:IF P=1 THEN O=2:S=79:t=64:TAG ELSE WINDOW #2,2
,19,2,24:PAPER #3,2:PAPER #2,0:CLS #3:CLS #2:o=5:S=248:t=s:FOR AA=19 TO 32:LOCAT
E (aa MOD 2)*19+1,AA/2:PRINT CHR$(127):NEXT:TAG [DC]

120 IF INKEY(69)=0 AND b<12 THEN b=b+o ELSE IF INKEY(71)=0 AND b>-12 THEN b=b-o
[13]

130 IF INKEY(63)=0 AND a>-12 THEN a=a-o ELSE IF INKEY(62)=0 AND a<12 THEN a=a+o
[F7]

140 IF INKEY(0)=0 AND d<12 THEN d=d+o ELSE IF INKEY(2)=0 AND d>-12 THEN d=d-o [8
1]

150 IF INKEY(1)=0 AND c<12 THEN c=c+o ELSE IF INKEY(8)=0 AND c>-12 THEN c=c-o [A
2]

160 IF f<12 THEN b=-b:f=14 ELSE IF e<0 THEN a=-a:e=2 ELSE IF f>398 THEN b=-b:f=3
96 ELSE IF e>614 THEN a=-a:e=612 [87]

170 IF h<12 THEN d=-d:h=14 ELSE IF g<0 THEN c=-c:g=2 ELSE IF h>398 THEN d=-d:h=3
96 ELSE IF g>614 THEN c=-c:g=612 [EF]

180 oi=og:oj=oh:ox=oe:oy=of:x=e:y=f:x2=g:y2=h:xv=a:yv=b:x2v=c:y2v=d:GOSUB 230:g=
x2:h=y2:c=x2v:d=y2v:og=oi:oh=oj:r=m:z=t:GOSUB 240:e=x:f=y:oe=ox:of=oy:x=g [EB]

190 y=h:a=xv:b=yv:ox=og:oy=oh:r=n:xv=c:yv=d:z=s:GOSUB 240:g=x:h=y:og=ox:oh=oy:c=
xv:d=yv:IF p=1 THEN 120 ELSE IF (u<32 OR u>580) AND (v>154 AND v<261) THEN MOVE
434-(u/1.5),350:PRINT"WINNER";:FOR a=1 TO 3000:NEXT:RUN [B4]

200 IF vv>8 OR vv<-8 THEN vv=vv*.8 ELSE IF uv>8 OR uv<-8 THEN uv=uv*.8 ELSE IF
u<32 THEN uv=-uv:u=32 ELSE IF v<32 THEN vv=-vv:v=32 ELSE IF u>580 THEN uv=-uv:u
=580 ELSE IF v>384 THEN vv=-vv:v=384 [4F]

210 x=u:y=v:x2=e:y2=f:x2v=a:y2v=b:xv=uv:yv=vv:GOSUB 230:E=x2:F=y2:a=x2v:b=y2v:x2
v=c:y2v=d:x2=G:y2=H:GOSUB 230:G=x2:H=y2:C=x2v:D=y2v:oy=ov:ox=ou:z=111:r=3:GOSUB
240:ov=oy [38]

220 ou=ox:u=x:v=y:uv=xv:vv=yv:GOTO 120 [4E]

230 IF x-34>x2 OR x+34<x2 OR y-16>y2 OR y+16<y2 THEN RETURN ELSE SOUND 1,100,20,
0,1,1:i=yv:yv=y2v:y2v=i:i=x2v:x2v=xv:xv=i:x=x+8*SGN(x-x2):y=y+8*SGN(y-y2):IF p=1
THEN i=j:j=k:k=i:INK j,24:INK k,26,14:RETURN ELSE RETURN [22]

240 y=y+yv:x=x+xv:PLOT ox,oy,R:PRINT CHR$(z);:PLOT x,y,r:PRINT CHR$(z);:ox=x:oy=
y:RETURN [16]

```

TRIANGLES

BY DANIEL JANKOWSKI

Run this program and watch the dots appear. After a while you begin to see that this is more than a simple triangle.

```

1 REM NB:It takes time!! [36]
10 MODE 2:BORDER 0:INK 0,0:INK 1,26:DIM x(5):CLS:LOCATE 45,8:PRINT "Triangles (D
J 1989)" [0D]
20 LOCATE 45,9:FOR n=1 TO 19:PRINT CHR$(154);:NEXT [4D]
30 PLOT 200,150:PLOT 50,350:PLOT 300,350 [02]
40 n=300:m=250:x(1)=175:y(1)=35:x(2)=50:y(2)=350:x(3)=300:y(3)=350 [8E]
50 k=INT(RND*3)+1 [B4]
60 IF x(k)>n THEN a=(x(k)-n)/2 ELSE a=(n-x(k))/2 [15]
70 IF y(k)>m THEN b=(y(k)-m)/2 ELSE b=(m-y(k))/2 [46]
80 IF x(k)<n THEN LET a=a+x(k) ELSE LET a=a+n [E7]
90 IF y(k)<m THEN LET b=b+y(k) ELSE LET b=b+m [55]
100 PLOT a,b:n=a:m=b:GOTO 50 [B7]

```

RALLY

BY ROBERT FIFIELD

Put the pedal to the metal and tear down this computer generated track avoiding the boul-

ders and close encounters with the walls. Move your car left and right as the track scrolls up the screen by using Z for left and / for right movements.

```

10 RESTORE 10:INK 0,0:MODE 1:DEFINT A-Z:FOR O=&8000 TO &8005:READ P:POKE O,P:NEX
T:X=300:OX=X:A=260:SC=0:d=4:TAG:SYMBOL 250,90,126,90,24,90,126,90,24:DATA 62,215
,205,77,188,201 [43]
20 WHILE TEST(ox+8,284)=0:PLOT OX,300,1:PRINT " ";:CALL &8000:PLOT X,300:PRINT CH
R$(250);:OX=X [03]
30 IF NOT INKEY(71) THEN X=X-7 ELSE IF NOT INKEY(22) THEN X=X+7 [22]
40 SOUND 1,2000,11,11:C=RND*10:IF C<2 THEN B=10-RND*20 [78]
50 IF D<>B*.8 THEN D=D+SGN(ABS(B)-D):IF D<2 THEN D=2 [EB]
60 IF B+A<80 OR B+A>500 THEN B=-B [17]
70 MOVE A-(ABS(d)-3)*8,16:PRINT STRING$(d," ");:a=a+b:IF sc MOD 10=0 AND d>2 THE
N PLOT A+CINT(RND*(d-3))*16,20,RND*2+1:PRINT CHR$(231); [26]
80 sc=sc+1:IF sc MOD 10=0 THEN MOVE 10,32:PRINT SC/10;:IF sc MOD 100=0 THEN POKE
&8001,15*CINT(RND*16) [94]
90 WEND:sc=sc/10-1.7:HSC=MAX(SC,HSC):MOVE 60,50:PRINT"DISTANCE";SC;"KM FARTHEST
";HSC;"KM"; [47]
100 FOR O=1 TO 50:PLOT OX+18-20*RND,302-20*RND,RND*3+1:SOUND 1,100+O*20,3,15-o\7
,0,0,26-O/5:NEXT:WHILE INKEY$<>"":WEND:CALL &BB18:GOTO 10 [FB]

```

Only
£24.95

Including VAT and p&p.

Save £5 on RRP of £29.95 when you order direct from Connect Software

MONEY MANAGER

Amstrad CPC 464, 664 and 6128
(disc only)

Over 25,000 sold in UK alone

Financial management software for personal and/or small business use

Money Manager provides individuals, businesses and professional people with a simple yet powerful way of managing their financial activities. All transactions can be entered easily and then presented in a wide variety of reports, ranging from a detailed listing of expenditure for tax purposes to summaries showing, for example, how much money has been spent over the past twelve months on petrol or electricity. Reports can also be presented in graphical form as pie and bar charts.

The Money Manager package has over 25,000 users in the UK alone. It is the ideal program for people who find that traditional accountancy programs are too complicated, unwieldy and time-consuming for their requirements.

- Any number of data files: Personal, Business, Accounts etc.
- 12 months per file, up to 100 entries (transactions) per month
- Move a file forward by a month at a time when required
- All options selected from the main menu
- Up to 9 user-defined accounts: Bank, Cash, Visa, Access etc.
- Up to 50 user-defined classes of income and expenditure
- A reference of up to 6 characters for each entry
- Your own descriptive text of 18 characters for each entry
- All the codes are displayed on screen whilst entering data
- Add, modify and delete existing entries at any time
- Quick insertion of standard entries and standing orders
- Entries can be sorted into date order automatically
- Single character 'mark' for even more selective reporting
- Reports showing each entry in a month or for whole year
- Reports may show classes merged into groups

- Spreadsheet type table showing class totals in each month
- Report showing class totals for each account
- Bar charts for up to 4 selected categories
- Pie charts of up to 10 selected 'slices'
- Report of monthly income, expenditure and cash-flow etc.
- Account statistics - monthly max, min, average, balance etc.
- Detailed Input and Output VAT reports
- Automatic calculation of VAT
- Simply ignore VAT features if they are not required
- Budget and cash-flow forecasts - may be updated
- Data search facility to find 'lost' items
- User-defined screen colours
- Comprehensive manual
- Two sets of sample data for practice and familiarisation
- Free telephone support for as long as you need it

**Connect
Software Ltd.**

To receive your copy of Money Manager by return post phone us now with your credit card number, or write to us at the address below enclosing your cheque for £24.95

01 743 9792 8am-10pm, 7 days a week

Connect Software Ltd., 3 Flanchford Rd., London W12 9ND



**WE'VE GOT
1,000!!**

**3" HEAD DRIVE
CLEANERS**

**SUITABLE FOR -
ALL AMSTRAD
3" DISK DRIVES**

**KIT COMPRISES:
3" CLEANING CASSETTE
TUBE HEAD CLEANING FLUID
INSTRUCTIONS**

~~£9.95~~

**OUR PRICE
ONLY £5.95**

PRINTER RIBBONS

(Nylon Fabric)

AMSTRAD	CITIZEN
DMP 2000/3000/3160 £3.80	120D £4.50
DMP 4000 £6.95	EPSON
PCW 8256/8512/LQ3500 £3.60	MX/FX/RX80/FX800 £3.20
PCW 9512 £3.70	LX80/86/GX80 £3.20
STAR	MX/FX/RX100/FX1000 £3.50
NL10 £4.85	MANNESMANTALLY
LC10 £4.95	MT80 £4.30

AMSTRAD

NEW JOYSTICK SPLITTER
Play with a friend! Splitter enables 2 joysticks to be used independently ONLY £6.95

PRINTER CABLE	
664/464/6128 1m £8.95	
2m £9.95	
Extension Printer Cable	
1m plus power. (PCW) £9.95	
Monitor Extension Lead	
664/6128 1m £8.50	
PPC to Philips 8524/8533/	
8833/1081 £5.95	
PC to Philips 8501 £5.95	

**...FOR PEOPLE ON THE MOVE
COMPUTER
E-X-T-E-N-S-I-O-N
LEADS**

(Hard Disk type)	
9512 £11.50	
1512 £18.95	
1640 £19.95	
(Floppy Disk type)	
1512 £17.75	
1640 £18.75	

DUST COVERS

PC1512/1640 £9.50
PCW8256/8512 sets 3 £9.50
PC9512 sets 3 £9.75
DMP 4000 £5.25 C120D £4.95
DMP 2000/3000/3160 £4.95

All covers clear with grey piping

RS232 GENDER CHANGERS
Avoid incompatible cables ONLY £6.50

**CABLES MADE FOR ALL RS232 AND
PARALLEL TYPES OF COMPUTER,
MODEMS & PRINTERS RING NOW
FOR QUOTE**

PPC to PC data transfer cable. Enables transfer of data simply
ONLY £10.50

DATA SWITCHBOXES
Enables you to quickly & easily switch between micros & printers
RS232 (Serial) Metal Cased
25-way 'D1' to 2-way £30.00
25-way 'D1' to 3-way £40.00
25-way 'D1' to 4-way £50.00
Centronics (Parallel) Metal Cased
36-way Centronics to 2-way Para £30.00
36-way Centronics to 3-way Para £40.00
36-way Centronics to 4-way Para £50.00
PARALLEL CROSSOVER 36-way Centronics
2 to 2 changeover Crossover £50.00

UNIVERSAL PRINTER STAND
£12.95
The adjustable Printer Stand - 2 piece construction, fits all standard and wide carriage printers. Also provides convenient space for paper and storage. Rubber feet, vibration absorbing pads.

TILT & SWIVEL BASE
Suitable for 12" & 14" TV or monitor £14.75

JUST ARRIVED
Professional Mouse Pads . £4.75

REMEMBER, our business is Cables for Computers, Printers, Monitors, Cassettes etc, etc. The above is a very small selection! Write or phone NOW for a quote. Trade EDUCATIONAL & EXPORT ENQUIRIES WELCOME

AUTO SWITCHES PARALLEL/SERIAL
MP401 4-way Parallel .. £105
MP801 8-way Parallel .. £135
MS401 4-way Serial £105
MS801 8-way Serial £135



BUFFERS
PB 64K Ram £95
PB256K Ram .. £165

COPY HOLDERS
Clamps onto any table Angle & position your copy for easy typing on the computer. Sliding Rule also fitted
CH1. ONLY £16.95

DISKETTE STORAGE BOXES
Anti Static with removable lids Lock and 2 keys. Cream with see-through lid & custom dividers

To hold 40, 3.5" disks £8.95
To hold 80, 3.5" disks £10.50
To hold 50, 5.25" disks £8.95
To hold 100, 5.25" disks .. £9.95
To hold 120, 5.25" disks £10.95
PLUS COMBO BOX 40, 3.5" or 20 3" £8.25

ANTI REFLECTION & ANTI STATIC SCREEN FILTERS
COLOUR 12" £16.95
COLOUR 14" £17.95
MONO 12" £16.95
MONO 14" £17.95

£1 P&P IN UK, Access & Visa accepted. Please add 15% VAT to all orders. Cheques made payable to:

R.S.D. CONNECTIONS LTD, Dept AU11, Mead Business Centre, Mead Lane, Hertford SG13 7AG.

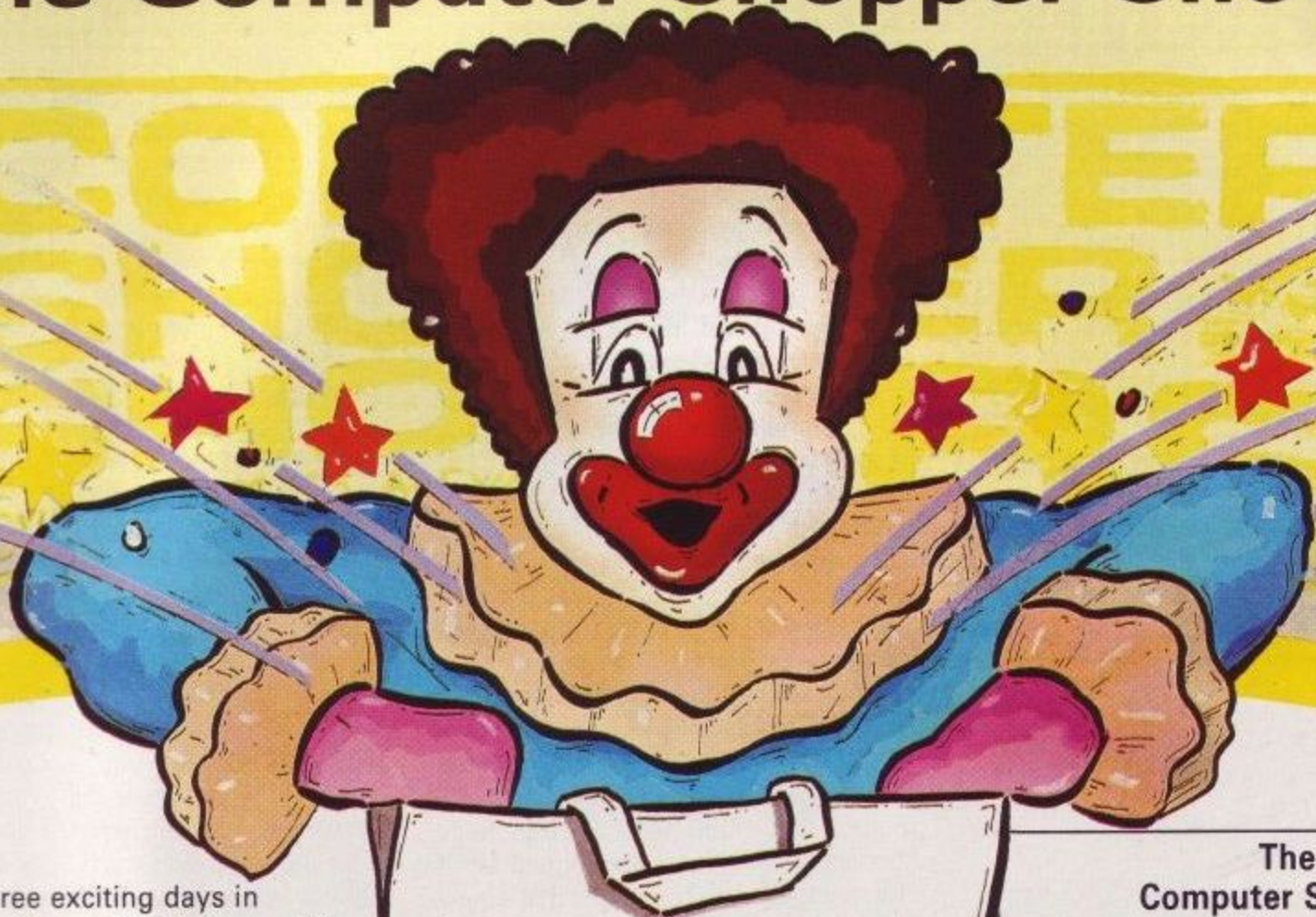
Tel. (0992) 584205/584207.



Trade, Educational & Export enquiries welcome



★ Computer shopping is fun at the Computer Shopper Show! ★



Yes, for three exciting days in November, Computer Shopper will turn Alexandra Palace into the world's greatest computer show. Everything you need for business and leisure computing will be available under one roof – with experts to help you make the right choice!

The Computer Shopper Show is your chance to meet the dealers with the bargains, the manufacturers with the latest machines – and to take away the things you buy on the day!

Auctions, demonstrations, competitions . . . everything that you've ever wanted from an exhibition will be happening at the Computer Shopper Show – the only show for the direct buyer and the ultimate computer shopping experience!

And, with Computer Shopper you know you'll save money!

Why not start right here! By ordering your tickets in advance you will save £££s! Simply complete and return the coupon with your payment or telephone the Credit Card Hotline on 051-357 2961 to place your order.

Prestel or Microlink

To place your order by Prestel, Key +89, then 614568383. Microlink users should key 72MAG 001. Please quote your credit card numbers and your full name and address when you place your order.

The Computer Shopper Show

Alexandra Palace, London

10am-6pm Friday, November 24

10am-6pm Saturday, November 25

10am-4pm Sunday, November 26

COMPUTER SHOPPER SHOW '89
NOVEMBER 24-26, ALEXANDRA PALACE

SAVE £££s WHEN YOU BUY OUR TICKETS IN ADVANCE!

Yes! Please send me my tickets for the Computer Shopper Show! £

- Adult tickets at £3 (Save £1!) _____
- Under 16s tickets at £2 (Save £1!) _____
- Family tickets - admits up to 2 adults and 2 children - £9 (Save £5!) _____

TOTAL _____

I would like to pay by -

- Cheque made payable to Database Exhibitions Ltd
- Credit card Access Visa Expiry Date _____

No. _____

Signed _____

Name _____

Address _____

Postcode _____

Please return your completed order form to -

The Computer Shopper Show Ticket Office, Database Exhibitions

Ltd, PO Box 2, Ellesmere Port, South Wirral L65 3EA. A756

- ★ Over 250 stands serving every major make and model – the ultimate computer hypermarket, packed with pre-Christmas bargains and offers.
- ★ Incorporates the Amstrad Computer Show, the Atari Computer Show, the Electron & BBC Micro User Show and much, much more!
- ★ On-site car parking for hundreds of cars – ideal for taking away your computer bargains on the day!
- ★ Excellent public transport network with courtesy coach link to the local British Rail station.
- ★ Special show features and entertainment to make your shopping experience fun!
- ★ Special discount tickets for under 16s and family groups.

Sponsored by **COMPUTER SHOPPER**

Organised by **DATABASE EXHIBITIONS**

TELEPHONE HOTLINE
Place your orders for tickets by calling
051-357 2961

Making a mark

Adrian Pumphrey

took a trip to Putney

to meet those rather

strange chaps from

Domark.

Every company has to start somewhere and since its creation in 1984 Domark has been growing steadily. Although not one of the industry giants, it is getting there. The company is run by two men of diverse talents: Dominic Wheatley and Mark Strachan. The unusual company name is an amalgamation of their two first names.

Both partners started from non-computer related industries with little or no real knowledge of computers. Dominic was in the Irish Guards and did his stint outside the Palace and Mark worked his way through several management positions in a brewery. Later both moved into the advertising industry where they met for the first time.

It was while thinking up a promotional exercise to promote computer hardware that they hit upon the idea that launched Domark. The idea turned out to be Eureka, a huge game with a £25,000 completion prize. Although this game was not the huge success that Domark had hoped for it still made enough to ensure that a new software house was born.

They then hit it lucky with the licence to the James Bond film *A View to a Kill*. Unfortunately this game ran into trouble from the word go. They listened to the programmers and took everything at face value. Programmers do tend to stretch the truth a little and as a result the planned game became unfeasible and very late.

When the game was finally launched it failed miserably but Domark learnt from their mistakes and now use a ball and chain on programmers. The next big licence, and the game that made Domark, was *Trivial Pursuit*. Following close on the heels

of this success came *Star Wars*. Although an old arcade game it converted so well it was an instant success. Plus a few assorted television licences such as *Krypton Factor*, *Block Busters* and *Treasure Hunt*.

Over the years Domark acquired more Bond licences (and produced better versions), as well as the licence for a Spitting Image game. The acquisition of licences hit an all-time high recently as Domark acquired the licence for the Tengen arcade games for a three year period. Domark's Tengen releases so far include *APB*,

Dragon Spirit, and *Vindicators* with a hopeful Christmas number one in prospect with *Hard Driving*, and next year *Toobin*.

Judging by their past record it seems that Domark only do licences but as Mark Strachan says, "All the associated publicity and hype helps to sell the games." Although Domark is looking at a few areas to branch into, it intends to stick with publishing because as Mark says, "publishing is fun." The grandfather of Dominic is none other than the master of horror, Dennis Wheatley. Dominic and his father own the company that owns the licenses to the Dennis Wheatley books. So in future don't be surprised if you see a few horror titles with the Domark name on the cover and a few arcade and adventure games based upon the books.

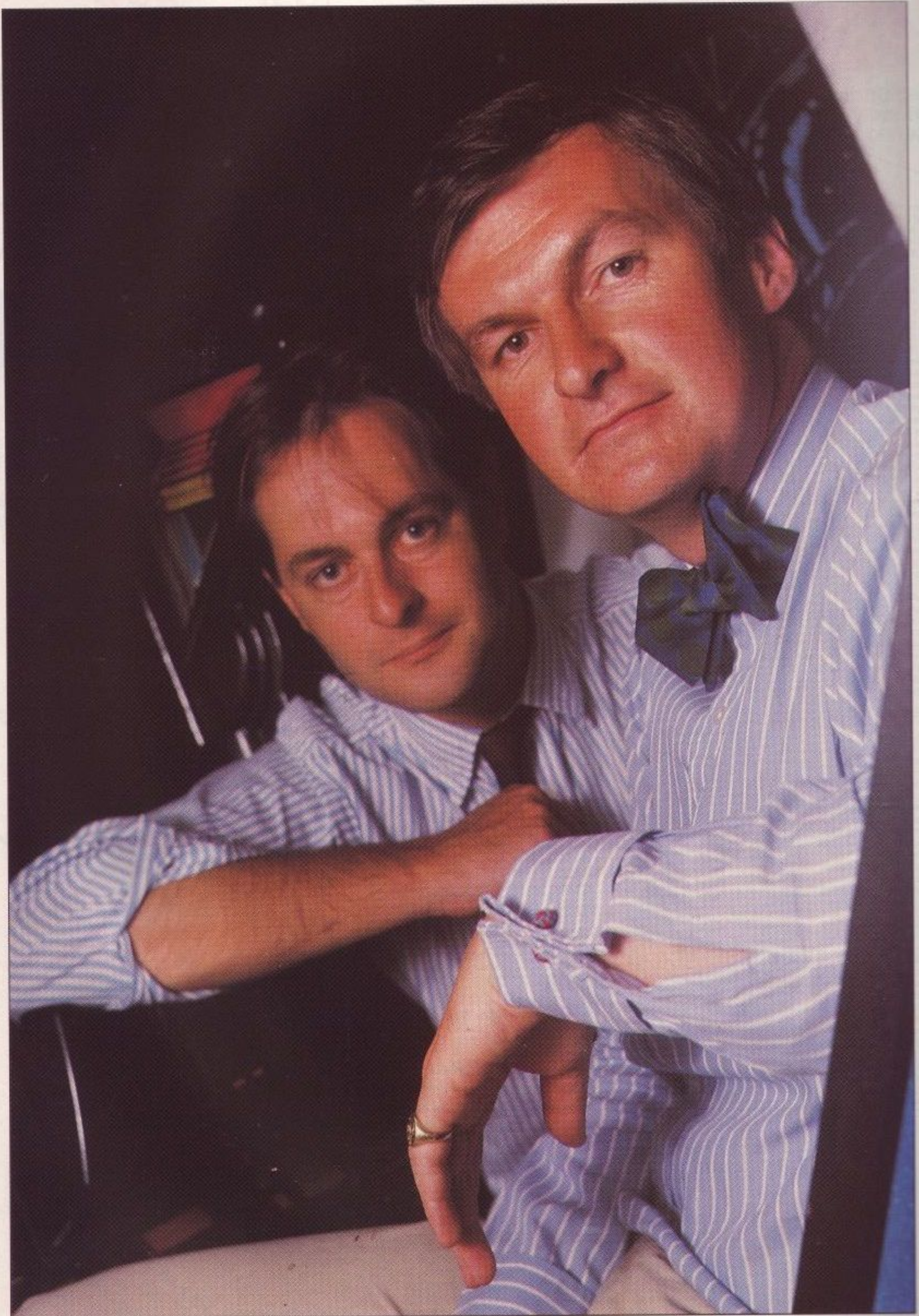
The Domark office in Putney in south London is currently overrun with arcade machines from Tengen. This may be great for the twenty or so people working there but it doesn't do a lot for the productivity. Not that the outside view is likely to inspire as a gigantic shopping complex is being built next door. Despite this a quiet corner can be found and is usually occupied by some games tester or a pile of the next Domark releases.

Domark is still a relatively small company but if it continues at its present rate of expansion it is sure to

become one of the industry giants. Despite its size Domark is determined to retain its identity and refuses to become a mere branch of a larger company. The competition may be tough but Domark are confident.

If you ever need to deal with the PR and promotional side of Domark you will see (or talk to) one Clare Edgeley. Before working at Domark Clare spent many happy years at Rainbird but left just before the buy-out by Microprose. Clare is also the author behind a Combat Zone style feature in another magazine.

Domark's plans for expansion took a leap forward recently as they signed a distribution deal with the American company Broderbund. The deal allows Domark to distribute Broderbund software in the U.K. and Broderbund to distribute Domark software in the States. At this rate Domark will soon be leading the software publishing field.



25%

or more off all non-budget software RRP

BUDGET

OFFERS SPECIAL

**1st Choice for fast
friendly
service**

EDUCATION

	Tape	Disc
Answer Back Quiz (6-11)	7.45	10.45
Fact Files for above		
Arithmetic (6-11)	3.70	6.70
Ass. Football (12+)	3.70	6.70
English Words (12+)	3.70	6.70
Gen. Knowledge (12+)	3.70	6.70
Gen. Science (14+)	3.70	6.70
Know England (12+)	3.70	6.70
Know Scotland (12+)	3.70	6.70
Nat. History (10+)	3.70	6.70
Spelling (6-11)	3.70	6.70
Sport (14+)	3.70	6.70
Super Sport (14+)	3.70	6.70
Better Maths (12-16)	8.20	12.70
Better Spelling (9-14)	8.20	12.70
Biology (12-16)	8.20	12.70
Chemistry (12-16)	8.20	12.70
Chemistry GCSE	10.95	14.95
French Mistress (A+B)	12.70	14.95
Fun School (2-5)	4.45	6.70
Fun School (5-8)	4.45	6.70
Fun School (8-12)	4.45	6.70
Fun School 2 (Under 6)	7.45	9.70
Fun School 2 (6-8)	7.45	9.70
Fun School 2 (Over 8)	7.45	9.70
Geography Map Quiz (9+)	8.20	12.70
German Master (A+B)	12.70	14.95
Happy Letters (3-6)	7.45	10.95
Happy Numbers (3-5)	7.45	10.95
Happy Writing (3-6)	7.45	10.95
Magic Maths (4-8)	8.20	12.70
Map Rally (7-13)	7.45	10.95
Maths Mania (8-12)	8.20	12.70
Maxi Maths (9-14)	8.20	12.70
Osprey (8-14)	8.95	12.90
Physics (12-16)	8.20	12.70
Physics GCSE	10.95	14.95
Timeman One (4-9)	7.45	10.95
Timeman Two (4-10)	7.45	10.95
Weather/Climate (12+)	8.20	12.70
Word Hang (5+)	7.45	10.95
World Wise (7+)	7.45	10.95

LEISURE & SPORT

3D Pool	7.45	10.95
All New Blockbusters	5.95	9.70
Back Gammon	4.45	7.45
Bobs Full House	5.95	-
Bridge Player 3	9.70	11.95
By Fair Means Or Foul	7.45	10.95
Colossus Bridge	8.95	10.95
Colossus Chess 4	7.45	10.95
E. Hughes Int. Soccer	7.45	10.95
Football Manager 2	7.45	10.95
Games Crazy	9.70	-
Games Summer Coll.	7.45	10.95
Game Set and Match	9.70	13.45
Game Set and Match 2	9.70	13.45
G. Lineker Sup. Skills	7.45	10.95
G. Lineker Hot Shots	7.45	10.95
Gold Silver Bronze	10.95	18.70
Kenny Dalglish	7.45	-
Krypton Factor	5.95	9.70
Match Day 2	6.70	10.95
Microprose Soccer	10.95	14.95
Monopoly	7.45	10.95
Peter Beardsley	6.70	10.95
Question Of Sport	10.95	14.95
Scrabble	7.45	10.95
Scruples	7.45	10.95
Supersports	7.45	-
Tour de Force	7.45	-
Triv. Pursuit New Beg.	10.95	14.95
Triv. Pursuit Genus	10.95	14.95
Triv. Pursuit Young	10.95	14.95
Wec le Mans	7.45	10.95

BUSINESS

	Tape	Disc
Home Budget	1.75	-
Mastercalc 128 (6128)	-	24.70
Masterfile 3	-	29.95
Matrix Spreadsheet	-	34.95
Maxam	14.95	18.95
Mini Office (Budget)	2.99	4.99
Mini Office 2	10.95	14.95
Protex	14.95	18.95
Tasword (464 or 6128)	18.70	22.45
Tascopy	8.95	10.95

ARCADE

1943	7.45	10.95
4 X 4 Off Road Racing	7.45	10.95
Action Force	7.45	-
After Burner	7.45	10.95
Arcade Muscle	9.70	13.45
A.P.B.	7.45	10.95
Barbarian 2	7.45	10.95
Batman Caped crus.	7.45	10.95
Bloodwych	7.45	-
Command Perf	8.70	14.95
Crazy Cars 2	7.45	10.95
Cyberoid	7.45	-
Cyberoid 2	7.45	10.95
Dan Dare 2	5.95	-
Dark Side	7.45	10.95
Dark Fusion	7.45	10.95
Dominator	7.45	10.95
Dragon Ninja	7.45	10.95
Driller	10.95	13.45
Eliminator	7.45	10.95
F15 Strike Eagle	7.45	10.95
Fire Trap	7.45	-
Forgotten Worlds	7.45	10.95
F. Bruno's Big Box	9.70	13.45
Gemini Wing	7.45	10.95
Giants	9.70	14.95
Gilbert	7.45	10.95
Gothic	-	10.95
In Crowd	14.95	-
Indian Jones	7.45	10.95
Karnov	-	10.95
Konami Arcade Coll.	7.45	13.45
Magnificent 7	7.45	13.45
Marauder	7.45	10.95
Navy Moves	7.45	10.95
Netherworlds	7.45	10.95
New Zealand Story	7.45	10.95
Obliterator	7.45	-
Operation Wolf	7.45	10.95
Pacland	7.45	10.95
Pacmania	6.70	10.95
Paranoia Complex	7.45	10.95
Purple Saturn Day	10.95	14.95
Real Ghostbusters	7.45	10.95
Red Heat	7.45	10.95
Renegade 3	7.45	10.95
Rick Dangerous	7.45	10.95
Robocop	7.45	10.95
Rock Star	7.45	10.95
Running Man	7.45	10.95
Run The Gauntlet	7.45	10.95
Samurai Warrior	6.70	10.95
Silk Worm	7.45	10.95
Skweek	7.45	10.95
Special Action	9.70	13.45
Star Wars	7.45	10.95
Storm Lord	7.45	10.95
Story So Far Vol. 2	9.70	10.95
Superman	7.45	10.95
Taito Coin Op. Hits	9.70	-
Tank Attack	9.70	10.95
Thunderbirds	7.45	10.95
Thunder Blade	7.45	10.95
Time Scanner	7.45	10.95
Venom Strikes Back	7.45	-
Vigilante	7.45	10.95
Xybots	7.45	10.95

	Tape	Disc
Choice Cheats 1	2.99	4.99
Choice Cheats 2	2.99	4.99
Choice Cheats 3	2.99	4.99
ATV Simulator	2.99	-
Ace 1	2.99	-
Ace 2	2.99	-
Action Force	2.99	-
Arcade Flight Sim.	2.99	-
Army Moves	2.99	-
B. McGuigans Boxing	2.99	-
Batty	2.99	-
Big Foot	2.99	-
Blade Warrior	2.99	-
BMX Simulator	2.99	-
BMX Simulator 2	2.99	-
Commando	2.99	-
Crazy Cars	2.99	-
Dizzy	2.99	-
Fast Food	2.99	-
Football Manager	2.99	-
Footballer of the Year	2.99	-
Gauntlet	2.99	-
Gauntlet 2	2.99	-
Leaderboard	2.99	-
Masters of the Universe	2.99	-
Mig 29	2.99	-
Mini Office	2.99	4.99
Moto Cross Simulator	2.99	-
Nick Faldo	2.99	-
Ninja Command	2.99	-
Ninja Massacre	2.99	-
Power Boat Simulator	2.99	-
Pro Golf	2.99	-
Pro Snooker	2.99	-
Rambo	2.99	-
Rugby Simulator	2.99	-
SAS Combat	2.99	-
Street Gang Football	2.99	-
Task Force	2.99	-
The Hit Squad	2.99	-
Treasure Island Dizzy	2.99	-
Twin Turbo V8	2.99	-
Wolf Pack	2.99	-
Yie Ar Kung Fu	2.99	-
Zorro	2.99	-
Air Wolf	1.99	-
A View to a Kill	1.99	-
Battleships	1.99	-
Bomb Jack	1.99	-
Bomb Jack 2	1.99	-
Bubble Bobble	1.99	-
Cricket Inter.	1.99	-
Danger Mouse - Trouble	1.99	-
Danger Mouse - Whoopee	1.99	-
Dynamite Dan	1.99	-
Dun Darach	1.99	-
European 5 a Side	1.99	-
Formula 1 Grand Prix	1.99	-
Frank Bruno's Boxing	1.99	-
Ghostbusters	1.99	-
G. Gooch Match Cricket	1.99	-
Gun Boat	1.99	-
Joe Blade 2	1.99	-
Master Chess	1.99	-
Peter Pack Rat	1.99	-
Pool	1.99	-
Postman Pat	1.99	-
Red Scorpion	1.99	-
Rocky Horror Show	1.99	-
Shanghai Karate	1.99	-
Shanghai Warriors	1.99	-
Star Trooper	1.99	-
Steve Davis Snooker	1.99	-
Super Nudge 2000	1.99	-
Thing	1.99	-
Trap Door	1.99	-
Xeno	1.99	-
Yabba Dabba Doo	1.99	-
Yogi Bear	1.99	-

ADVENTURE

Corruption (6128 only)	-	14.95
Game Over 2	6.70	9.70
Ingrid's Back	-	14.95
Lancelot	10.95	14.95
Time and Magic	10.95	10.95
Times of Lore	7.45	10.95
Total Eclipse	7.45	10.95
Total Eclipse 2	8.40	-

CHRISTMAS CHEER

Buy early for christmas and get a £1 voucher for every £15 spent during October and November

BLANK DISCS
Maxell CF2 3" discs
£2.50 each
£11.95 for 5
£23.50 for 10

BUDGET BARGAIN
Save over a £1
3 @ £1.95
or
2 @ £2.95

**Only
£4.95**

Seal 'n Type
Keyboard protectors
State 464 or 6128
Only £8.95

JOYSTICKS
Quickshot 2 Turbo 9.95
Megablaster 6.45
Cruiser (Black or Blue) 8.95

Tape £2.99 **CHEAT** **Disc £4.99**

Bend the rules! Play your games to the end with the aid of cheats such as infinite weapons and immunity.

CHOICE CHEATS 1

Cheats for: By Fair Means or Foul, Cyberoid, Karnov, Operation Wolf, Flying Shark, Radius, Tanium, Advanced Pinball Simulator Joe Blade 2, Star Trooper, Reflex and Shanghai Karate.

CHOICE CHEATS 2

Cheats for: Dragon Ninja, Hopper Copper, Arkanoid, Arkanoid Dynamite Dan, Solomon's Key, Dizzy 2, ATV Simulator, Empire Strikes Back, Pro Ski Simulator, Batman and Head Over Heels.

NEW CHOICE CHEATS 3 NEW

Cheats for: After Burner, Big Foot, The Hit Squad, Robocop, Skweek, Storm Lord, Thunderbirds, Thunder Blade, Titan, Twin Turbo V8, Yabba Dabba Doo and Yogi Bear.

Many more items
in stock than
listed phone us for
DISCOUNT PRICES

Disc/Cass Price

Name

Address

Postcode

Total price



To order fill in the coupon and send it with a cheque or postal order to

1st Choice Software Ltd
Dept AU11
4 Paul Row, Temple Lane
Littleborough, Lancs, OL15 9QG

PHONE 0706 72728

All prices are inclusive of VAT and P & P in the UK

This month we take to the roads with a preview of *Test Drive II – The Duel*. A Ferrari F40 races against a Porsche 959. Stir up your adrenalin with the mega-blast *Dragon Spirit* and haul over the crooks with *APB*.

GAMEPLAN



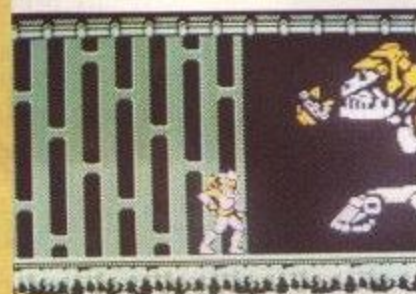
TEST DRIVE II - THE DUEL

Motorway madness as the latest in car technology clashes.



PASSING SHOT

Sports simulation at its best, all the enjoyment of tennis with none of the exercise.



STRIDER

Step into mother Russia in the guise of a ninja to confront the might of the Russian army.

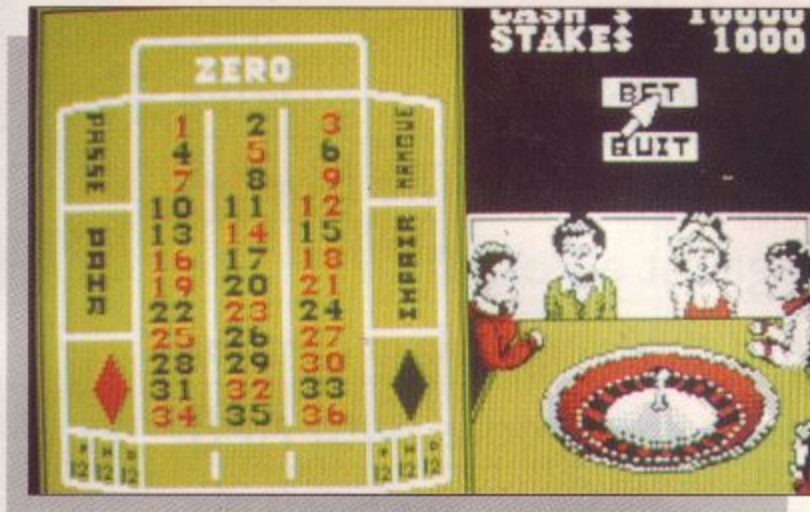
PLUS

Mission Omega, Knight Games, and Monte Carlo Casino.

1	(1)	Robocop Ocean
2	(3)	Mig-29 Code Masters
3	(2)	Twin Turbo V8 Code Masters
4	(4)	Daley Thompson's Decathlon Hit Squad
5	(NE)	Yie Ar Kung Fu Hit Squad
6	(NE)	Green Beret Hit Squad
7	(8)	Enduro Racer Hit Squad
8	(NE)	Monte Carlo Casino Code Masters
9	(NE)	Pro Powerboat Simulator Code Masters
10	(5)	Fast Food Code Masters
11	(20)	Crazy Cars 2 Titus
12	(NE)	Crazy Cars Hit Squad
13	(NE)	Tom Cat Players
14	(13)	Dragon Ninja Ocean
15	(NE)	Jack the Nipper Kixx
16	(9)	Rambo Hit Squad
17	(NE)	Masters of the Universe Kixx
18	(15)	Emlyn Hughes Int. Soccer Audiogenic
19	(11)	Army Moves Alternative
20	(NE)	Moto X Simulator Code Masters

Last month's position in brackets
Top 20 compiled by Gallup

Ever since time immemorial struggling programmers, and some might say talentless as well, have produced fruit machine games. The temptation to simulate those spinning fruits is almost irresistible if you can scroll a screen, or to produce filled polygons rotating around far-flung star systems. I will even admit to doing it myself.



Monte Carlo Casino

Have a go at breaking the bank at Monte Carlo without breaking into your own piggy bank.

The trouble is that this is all you usually get. The same can be said of card games

repute for your delectation. The fruit machine is there, of course. Not a parti-

cularly feature-laden one, but the graphics are okay, and the reels spin in a reasonably convincing manner. The objective of the entire package is to make one million dollars, and thus presumably break the bank, though I think a Monte Carlo casino would have far more than that in the coffers. This might sound like it is going to take a very long time if

you are only sticking ten pences into a fruit machine, but fear not, the stakes are much higher than that: one thousand dollars to be precise. Probably the most disappointing game of the lot is the roulette table, which operates in an unconventional manner, and which does not really inspire a great belief in actually being there. The system of placing

bets does not follow official procedure either.

Never mind, I enjoyed playing poker, a game enlivened by pictures of the players sat around the table, with plenty of amusing little touches. All something of a send-up of the Cincinnati Kid methinks.

Craps might sound like something you would suffer from after drinking Spanish tap water, but it is in fact an American dice game. If you do not know how to play, do not worry; this and the other games are explained on the cassette inlay. It is reasonably entertaining to play as well.

Reckoning myself as some kind of card sharp, I set out to destroy the bank by playing blackjack. A simple and easy game, and one which depends on nerve and luck. I had the former but not the latter. Oh well, back to sweeping the roads.

Monte Carlo Casino may not offer anything new, but it does offer all those gambling games in one shot, without the need to reload. And the graphics, if not

spectacular, are well thought out and in places humorous. The music is surprisingly good considering the subject matter, so you have the prolific David Whittaker to thank for that.

I did not break the bank at Monte Carlo, but then I did not have to break into my piggy bank to be able to pay for this well-presented and varied collection.

Mark Luckham



and dice games. Code Masters, renowned for its budget offerings, has gone the whole hog, slapping five gambling games together for the measly sum of £2.99. And what is almost as good is that this is not a multi-load affair; once the program is in, that is it! A bright and clear graphical menu, accompanied by a fitting jingle, offers five pursuits of ill

and dice games. Code Masters, renowned for its budget offerings, has gone the whole hog, slapping five gambling games together for the measly sum of £2.99. And what is almost as good is that this is not a multi-load affair; once the program is in, that is it! A bright and clear graphical menu, accompanied by a fitting jingle, offers five pursuits of ill

ROUND-UP			
NAME	Monte Carlo Casino		
SUPPLIER	Codemasters	PRICE	£2.99
GRAFFIX	74%	SONIX	78%
PLAYABILITY	82%	OVERALL	80%



Knight Games

Two guys beat the hell out of each other at the medieval equivalent of the Millwall Supporters' Club.

A hard day's knight, a knight to remember, a nightmare on Elm Street... ah, the gags are endless. All have been used to some degree in the past to describe *Knight Games*, which is now being released by Virgin-Mastertronic as a budget title.

Originally a big hit on other formats, the CPC version boasts similarly impressive graphics, but falls down woefully in the gameplay department.

This is the time when men were real men, women were real women, and two guys beat the hell out of each other at the medieval equivalent of the Millwall Supporters' Club. The events are sword fighting, quarterstaff, archery, ball & chain, sword-fight 2, pikestaff, crossbow, and axeman. The game is multi-load, which means that once the menu is loaded, there are eight lots of loading necessary to get through the rest of the games. Very tedious.

All the events follow the same pattern: you fight against an opponent while a



candle slowly melts. Very slowly if you ask me! There is no real sense of great danger, as in *Barbarian* for instance, because you have ten energy points per life, and umpteen lives.

The moves are not explained, apart from indications as to whether they are offensive or defensive, and as they are all slow and

involve a lot of posturing, it is hard to see which is the better. Well, that is not quite true for the first two events; they play exactly the same – just hold down the fire button and move to the right, and you will always beat your opponent.

The archery event involves loosing arrows at a horse, using your wobbling crosshair. They hit the horse's behind if you have

timed it correctly. Fine, if the event did not drag on for half an hour, but that is what it feels like. A perfectly good idea is ruined by the implementation. The same applies to the crossbow, which involves shooting at spinning targets, but again, ad nauseam.

The other combat events are all the same as each other; there are just changes

of scenery, and slight changes of tactics. When finally the axeman cometh in the final game, you will either be breathing a sigh of relief, or will have fallen asleep.

One of the few saving graces is that two players can indulge in chivalrous thuggery together. The second player can frantically thump the keypad but it is horribly awkward to play with.

Of the lot I suppose the pikestaff and ball and chain are slightly better events than the rest, but it is all much of a muchness. The graphics are good in virtually all of the games, and there are some good little medieval tunes scattered about, but unrelenting boredom ruins it all. This was a nightmare from which I was glad to wake up.

Mark Luckham

ROUND-UP			
NAME	Knight Games		
SUPPLIER	Virgin – Mastertronic	PRICE	£2.99
GRAFFIX	88%	SONIX	76%
PLAYABILITY	31%	OVERALL	41%

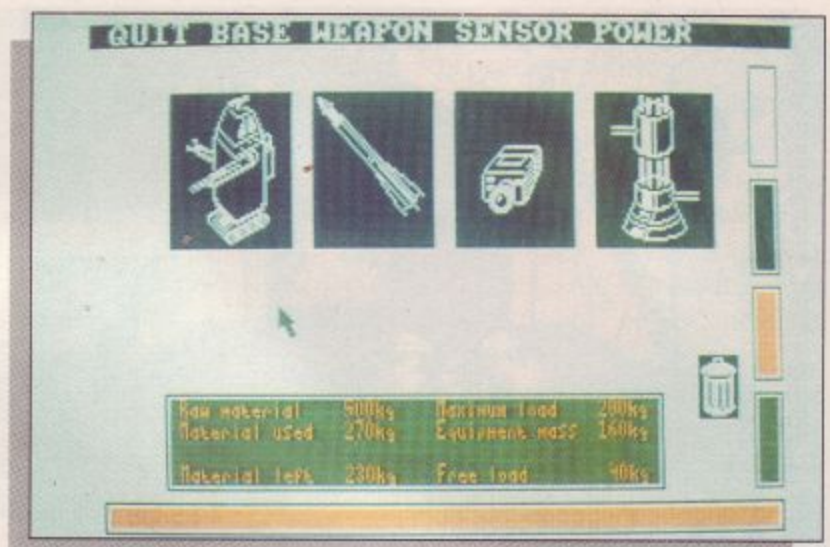
When an object the size of a small moon winds its way through the universe towards Earth, the immediate human response is to nuke it. We would all be bathing in its radioactive debris at this very moment if some wishy-washy liberal had not decided to send up a probe instead.

As the human component of the probe you must create and guide a team of droids around the alien complex searching for reactors to shut down, thus ending the alien threat (imaginary or otherwise). Before exploration of the complex can begin you must build yourself a squad of mechanical men who will go forth and get blasted, irradiated, crushed and generally mistreated in your stead.

You start by selecting a body. This can be anything from a lightweight hover to a heavy-duty tank; the bigger

boldly go wherever droids go when they are feeling bold. Each droid body has its own individual graphical representation but, apart from this, the only difference between them is their energy level and how big a punch they pack.

A small section of the screen is devoted to a page flipping aerial view of the droid you are controlling. This display shows the room and corridors plus the occasional piece of animated machinery which surround the droid. Most of the machin-



of the other inhabitants tread with caution, they are

exceedingly nasty. Becoming lost is not possible thanks to the map function which - when called - displays the appropriate sections of the complex and the relative positions of your droids.

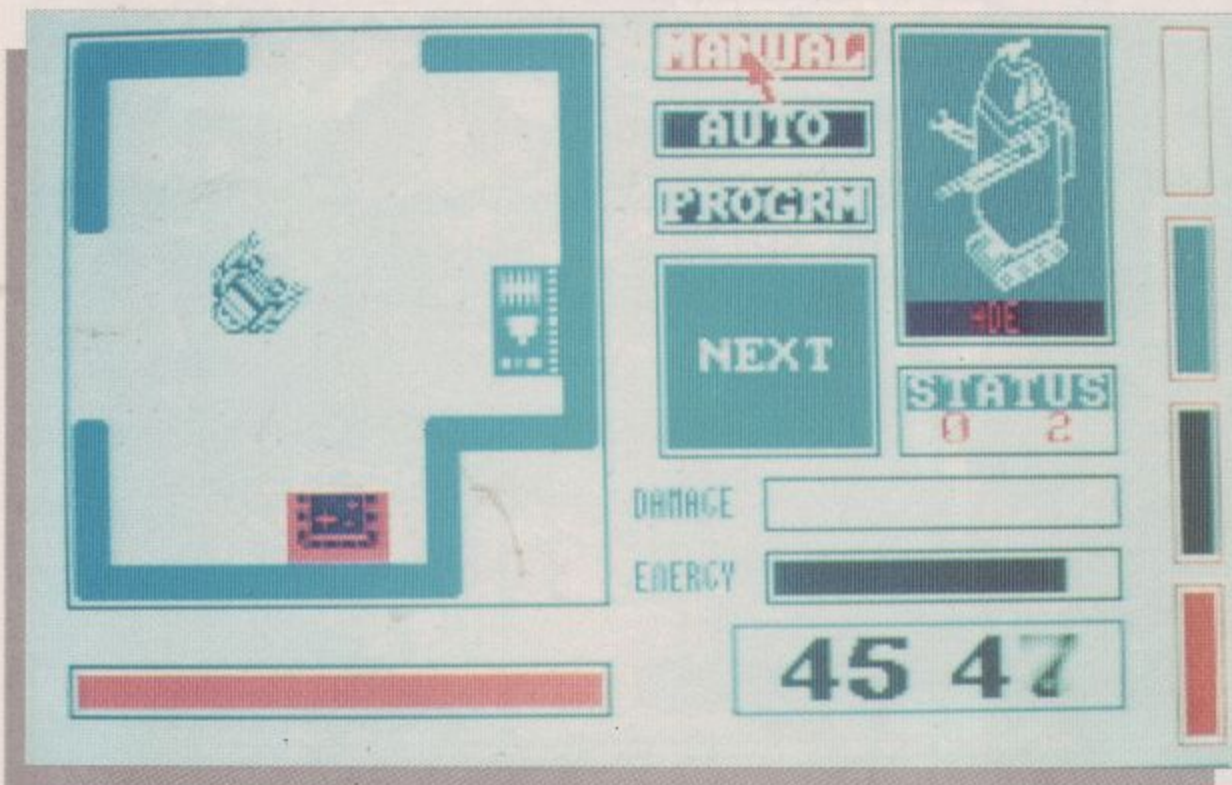
Because the instruction is brief, not everything is fully explained. Two of the movement commands seem interesting enough but their practicality remains in question. The first, putting your droid on automatic, causes it to wander of its own volition. This wandering is usually short-lived before the "search completed" message appears and control is returned to manual. What the object of the search is I have as yet to ascertain. The second movement command is easy to understand but its relevancy remains doubtful. It is possible to program a number of steps into your droid which can be run as a program.

A little more variety and this game could have been a winner; instead it offers a few hours of mindless maze-plodding.

Adrian Pumphrey

Mission Omega

Guide a team of droids round an alien complex and save the earth from the threat of nuclear holocaust.



the body, the heavier the weapon it can carry. The various types of laser and particle cannons not only inflict varying amounts of damage but use different amounts of your precious energy supply. This brings us to the power plant which can be either one of two sizes of battery or nuclear.

Once your droid has been named it can be released to

ery encountered is for effect, and only a few pieces can be used. Teleporters are an efficient method of travel and often take the player to areas otherwise inaccessible. This restriction of movement is further enhanced by electric barriers whose deactivating switches you must search out. If you are unfortunate enough to encounter some

ROUND-UP			
NAME	Mission Omega		
SUPPLIER	Bug Byte	PRICE	£2.99
GRAFFIX	SONIX	PLAYABILITY	OVERALL
73%	39%	47%	60%

Step boldly into the world of espionage (no apologies for the pun), where a lone, highly talented hero storms the snow-capped peaks of Siberia in a quest for secrets to take home to the CIA.

Strider is an unusual fellow. He uses no projectile weaponry, just a sword which he wields with light-

these sheer surfaces would be an unsurmountable barrier but, with his unique talents, Strider can climb vertical walls, hang on the underside of platforms and negotiate the steepest slope with ease. When Strider encounters a villain (although technically speaking Strider is the villain of the piece), a quick swipe of the sword

nerability, he can pick up a droid consort, which orbits his person forming a limited shield.

The first level starts with a low aircraft pass which drops Strider into the heart of Red Square. From here Strider must battle his way past many heavily armed troopers and some rather weird organic monsters, the first of which are the pygmy elephants. These creatures lurk near slopes and take pot shots at our hero as he climbs. The second organic monstrosity encountered on the first level is the end-level monster and what a monster it is. A giant caterpillar dwells in the U-shaped council chamber. On its own it would be quite harmless but it has picked up the nasty habit of charging



around the room waving a sickle. Strider's acrobatic abilities come into play at this point in the game because he can bounce around the U-shaped chamber and still pause occasionally to take a swipe at the caterpillar guardian.

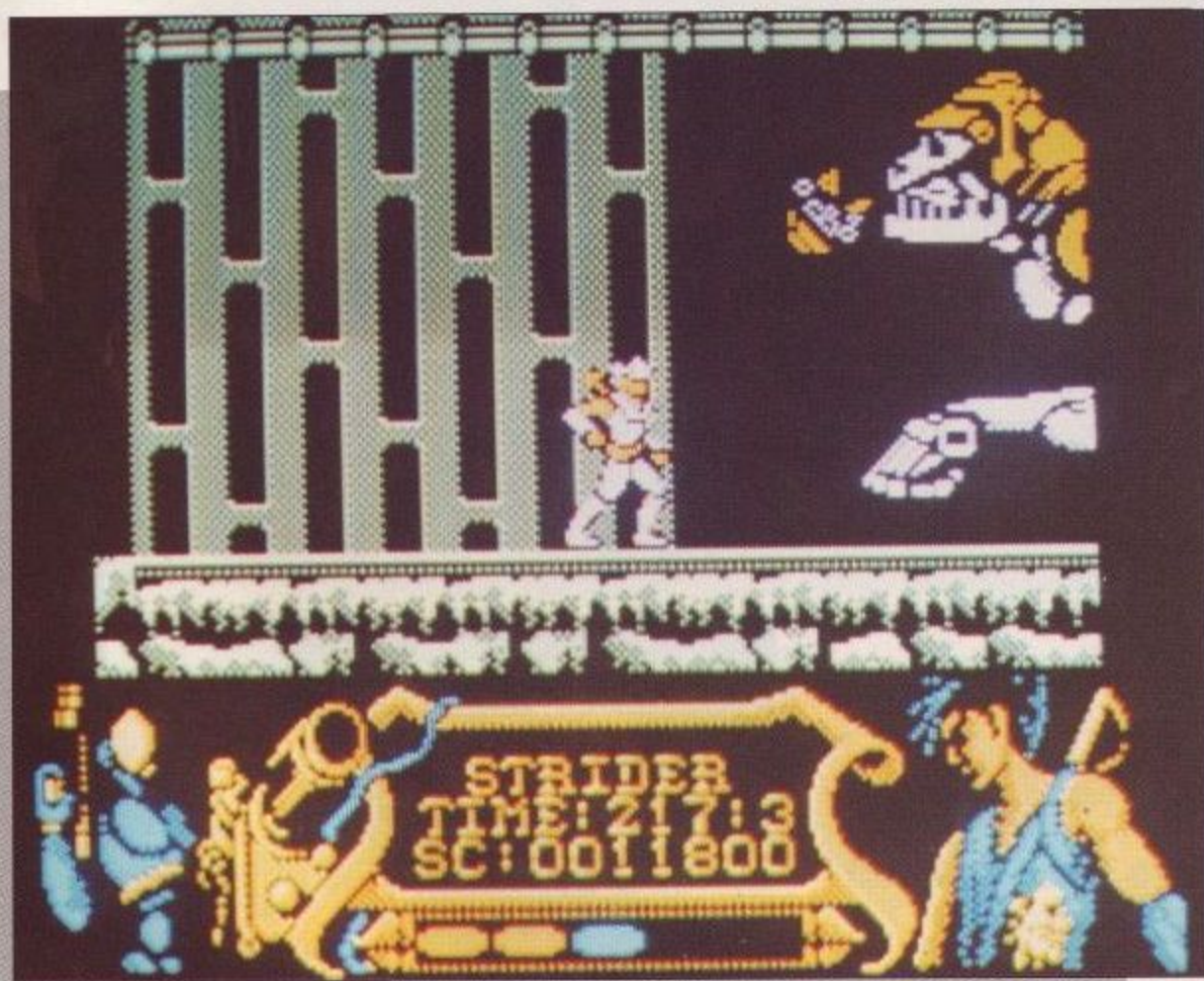
As you progress through the game you see some sights that most assuredly do not belong in present-day Russia. The wasteland with its dogs and parachuting bombs I can fit into my reality map but the ninja ballerinas and the boomerang-throwing Amazons take more than a little believing. It takes a certain amount of faith to play this game as more often than not you are faced with the choice of whether to jump into the void - hoping that there will be a platform on which to land - or whether just to drop off the edge. With a little experimentation and a few lost lives you soon work out when to jump and when to drop.

Never in my gaming experience have I ever come across a character so agile, and controlling him is a delight. The foes vary enormously and a surprise awaits you on every platform. This is one game that I can wholeheartedly recommend to the discerning player.

Adrian Pumphrey

Strider

A super-agile CIA agent storms Russia in search of secrets.



ning fast reflexes and an acrobatic ability second to one. In fact Strider is the perfect ninja, using basic weaponry against the genetic engineering and hi-tech of the Russian army.

Strider departs from the usual form of platform game, the platforms quite often becoming walls, ceilings and so on. To a normal character

makes all well in the world once more. When Strider attacks with his sword you see a blur of movement, as if someone had swirled a cloak, and all within the swirl feel the deadly blow. Occasionally he will encounter canisters which contain bonuses; apart from standard options like more life-energy and temporary invul-

ROUND-UP			
NAME	Strider		
SUPPLIER	U.S. Gold	PRICE	£9.99
GRAFFIX	85%	SONIX	74%
PLAYABILITY	92%	OVERALL	89%



Test Drive 2 - The Duel

Two kings of the road go head to head over some of the world's deadliest terrain. We preview the next blockbuster from Mastertronic.

It's mayhem on the streets as the big boys go for it. Ferrari and Porsche are locked in a head-to-head duel across burning desert highways and treacherous mountain tracks. Only the brave and the foolish enter, most do not survive; but those that do can hold

their heads up high as they queue up to pay their speeding fines.

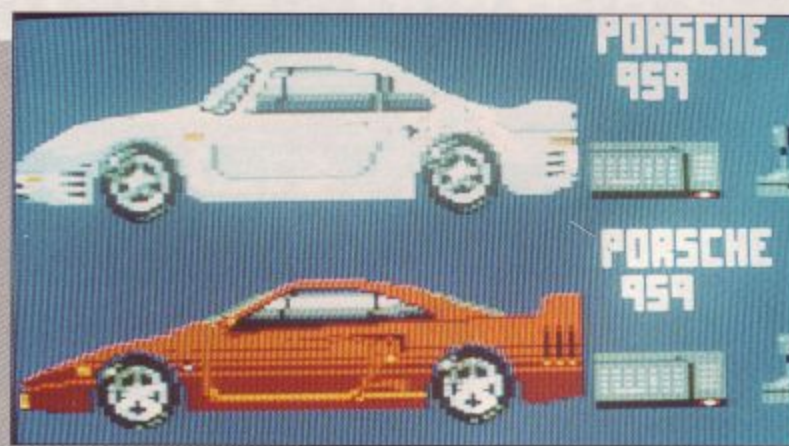
At the start of the game you get to choose between the Ferrari F40 and the Porsche 959 before selecting your method of control. Each car has its own authentic dashboard display. If

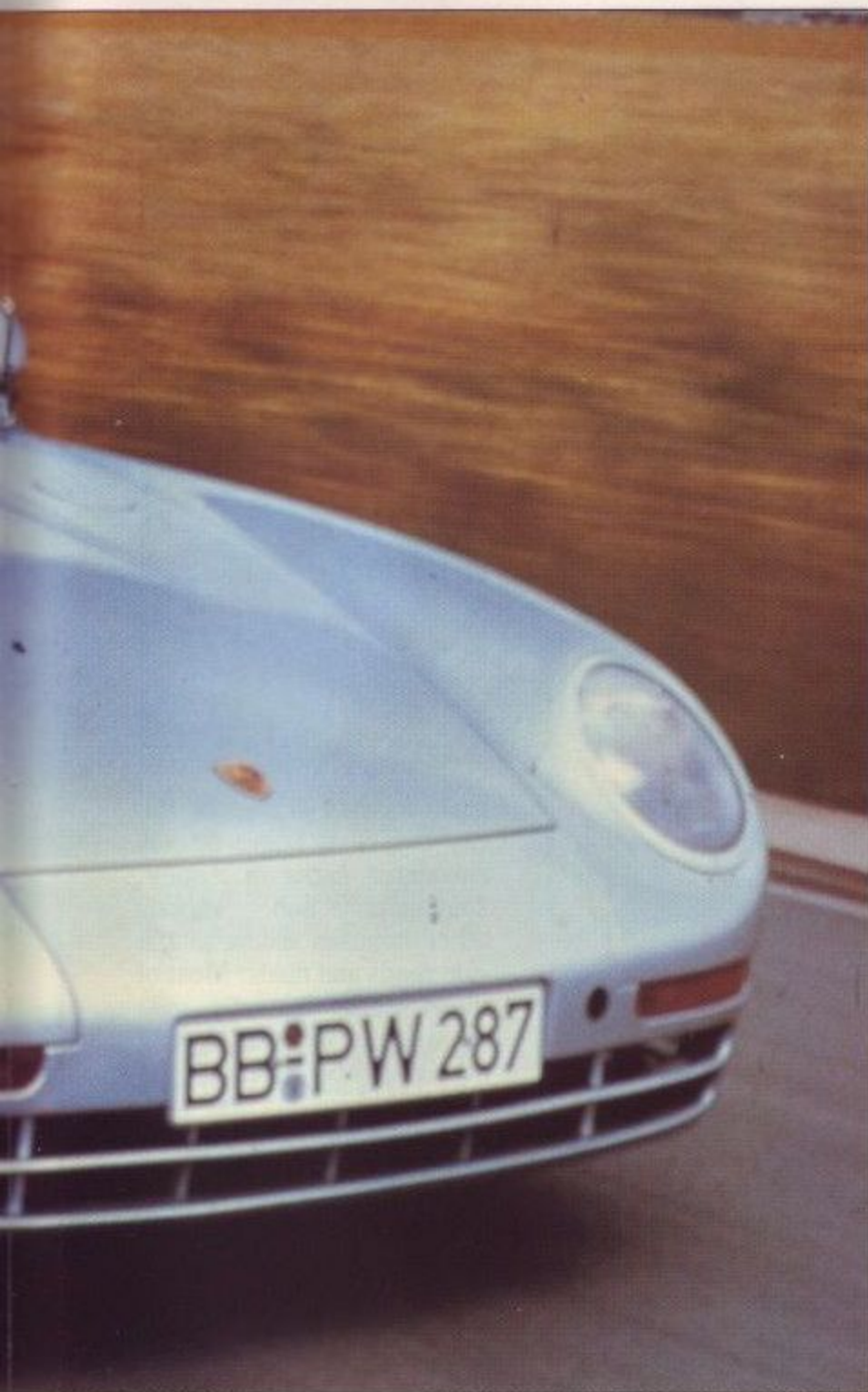
you are playing in 'one player' mode then you must decide whether to race against the other car or the

timer. Once the options have been selected it's dodge the cacti time as you

race off across the deserts of America on heat tortured roads.

Unlike normal racing games you have to contend with traffic coming in the opposite direction. It is all right to cut the odd corner but if someone is coming the other way you either per-





may be there.

At the end of the desert road you will encounter a gas station. Stopping here is essential if you wish to continue. To fill up simply stop between the two white lines. At the end of each level you will find a gas station.

Next come the winding mountain roads. On one side you have the cliff face and on the other you have a short trip to oblivion. The



form some remarkable evasion manoeuvres or you crash head-on losing one of your lives. Once you have lost all five lives then the game is over but each time you refuel you get an extra one. On the first four of the

difficulty levels the gear change is automatic but when the going gets tough on manual transmission watch those revs or the engine will blow taking with it your chance of victory.

As you weave across the landscape a sure way of telling where your non-moving steering wheel is pointing is to look at the dot. This dot

moves around the wheel as you steer to indicate the top of the wheel. Inside the steering wheel are two indicators, one for the revs and the all-important speedometer. Across the top of the screen a number of illuminated pixels can be seen, these aren't a bug, they are the relative positions of your car, the opponent and any police cars giving chase. Your built in radar detector should alert you to the presence of any speed traps you pass through. Further information on your surroundings can be gained by looking in the rear view mirror. The mirror constantly displays the road behind you and any vehicles that

twists and turns on this track make it deadly and the only time you need not worry about dropping off the edge is when you are in a tunnel and the final straight where it is a mad dash for gas and victory.

The third level you find yourself on the grassy plains where further challenges await.

At the end of each level you receive a breakdown of your performance. This shows your average speed and time taken, it also shows your opponent's average

speed and time taken.

With twelve levels of difficulty there is little chance of you beating this game first time around. The game is the racing challenge of the millennium without the need to spend your next six year's wages buying the cars or three years in jug for non-payment of speeding fines.

No scenery discs are planned for the CPC version of the game. If the screenshots look a little odd fear not, this is an early preproduction version and as yet there is a lot of touching up to do.

Adrian Pumphrey

ROUND-UP			
NAME	Test Drive 2 - The Duel		
SUPPLIER	Mastertronic	PRICE	£9.99
Watch	This	Space	No score pending release
GRAFFIX	SONIX	PLAYABILITY	OVERALL

Officer Bob is the law. He is mean, tough and hard. Well, he is for someone who eats twenty doughnuts a day followed by ten cups of coffee, each containing three spoons of sugar, and who spends the entire day on his bum. But what he lacks in physical ability he makes up for in enthusiasm, which is kept at a constant peak by his short-tempered boss.

The week starts with a little refresher course in how to arrest cones. This section of the game is optional but advisory; it allows you to familiarise yourself with the controls of the car and the use of the arresting siren. The controls themselves could not be simpler as they mirror the movements of the joystick. This need only be used to correct or alter the movements of the squad car, as otherwise a constant speed and direction is maintained. In front of your vehicle there is a representation of a steering wheel; the faster you travel the further in front of your car the wheel appears. When holding the fire button this steering wheel becomes the arresting siren which, when placed on a subdued crook, arrests them.

Having mastered the basics with the cones in the car park it is time to hit the streets. A birds-eye view of the city charts Bob's progress as he attempts to negotiate the finer points of one-way streets. Unfor-



APB

Officer Bob is mean, tough and hard and kept on his toes by his highly short-tempered boss.

fortunate incidents like running over pedestrians and head-on collisions with trucks earn demerits. Enough of these and you are out. Sometimes it is worth losing your job, just to be able to witness the dressing-down Bob receives from his boss. These animated scenes range from one

where mad Bob the pedestrian killer is thrown into the loony van to one where he receives a quick toasting from the boss's fiery breath.

Out on the street Bob must pull in his quota of miscreants and hard-core crooks. Some crooks can be captured simply by running them off the road with your squad car, but the other slightly meaner baddies require a slight sprinkling of

lead. As Bob traverses the city (which is huge) he will encounter sacks of money, doughnuts and various other bonuses hiding in the side roads and fields. Most of these items instantly give extra time but the doughnuts must be taken to the doughnut shop and exchanged for it. The money which Bob either earns or finds can be used to beef up his squad car. With any luck, this will give him the well-needed edge which will compensate for his natural ineptitude.

This game is not to be taken seriously. It is strictly fun. The game is easy to get into and the captain's antics are guaranteed to delight. Why bother taking a walk on the humorous side of life when you can drive there with the sirens screaming?

Adrian Pumphrey



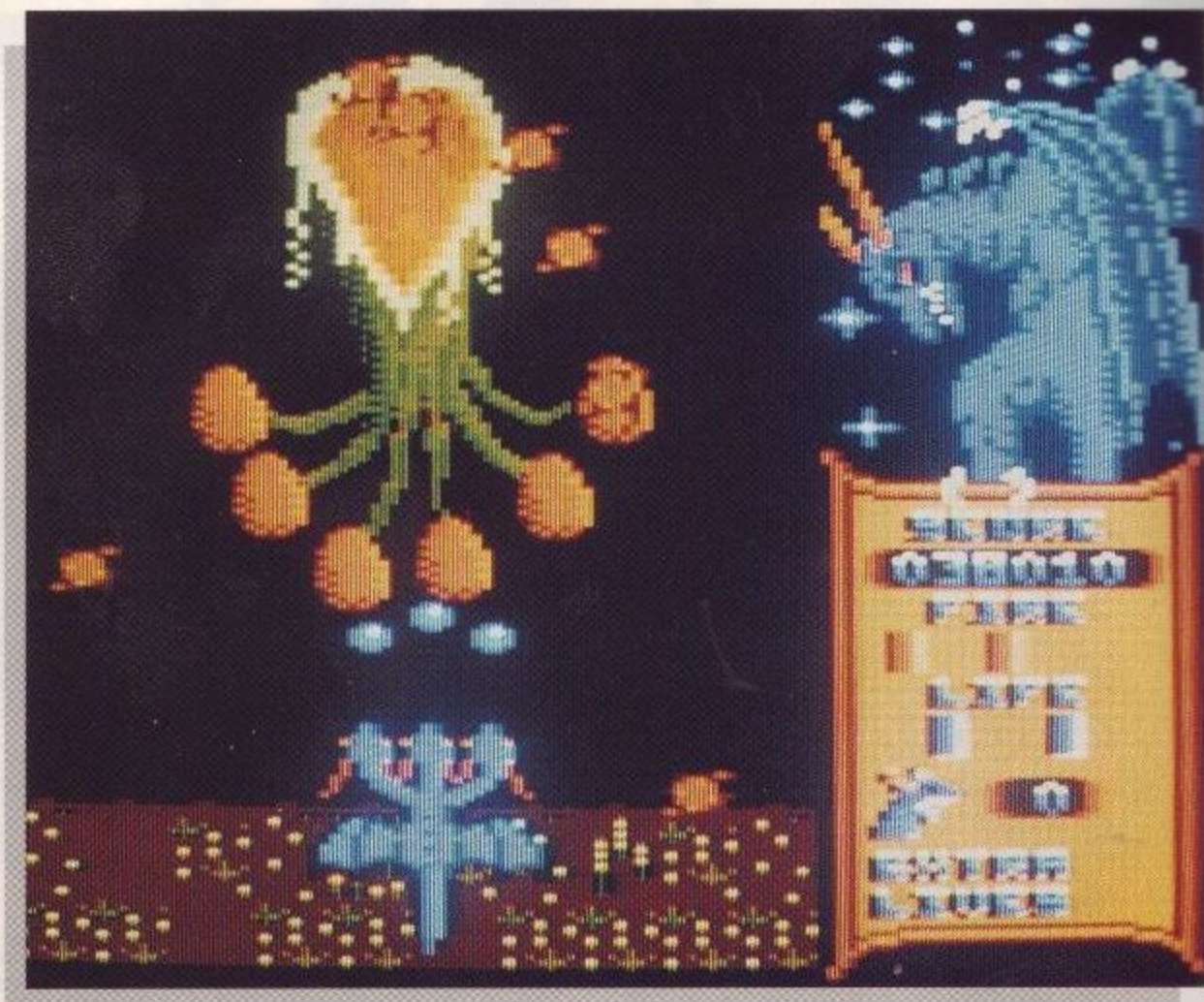
ROUND-UP			
NAME	APB		
SUPPLIER	Domark	PRICE	£9.99
GRAFFIX	86%	SONIX	70%
PLAYABILITY	90%	OVERALL	87%

Beyond the frozen wastes, beyond the end of time, beyond your wildest imagination, is *Dragon Spirit*, the fly-and-die spectacular that takes the CPC not only beyond current programming ability, but beyond life, death and the universe as we know it.

You might think, from this description, that I liked this game. It is true, I did. *Dragon Spirit* is Domark's conver-

sion of the coin-op of the same name, and involves a big blue dragon sprinting through the wilderness, spraying all and sundry with searing spittle. No, he does not quite manage to breathe fire, it is more like bits of blob.

There is a reason why you, as the dragon, need to go



Dragon Spirit

A big blue dragon sprints through the wilderness spraying searing spittle.

racing along, cutting your swathe of destruction, but it is always the *same* reason, and you could probably make up something more appropriate yourself: Gorby the dragon cutting through Soviet inefficiency, torching corruption and party dogma, is just as likely. Not only do you spit, you also drop bombs onto the ground. Quite what these bombs are or where the dragon gets them from I will leave to your furtive imaginations. If

you are playing with a joystick this presents something of a problem because you need to press the control key on the keyboard in order to bomb, and bomb you must. Not easy to ma-

noeuvre, shoot and bomb with the keyboard all at the same time.

Dragons do it vertically, or so I have been told: scroll that is. With a sizeable strip on the right being occupied by the control panel, most of which is taken up by a completely superfluous picture, there is not much room in the playing area for manoeuvre. The scrolling is *not* quick, and for that I am thankful because you would never have time to bomb

things otherwise. The biggest plus about the game is the graphics; they are great. Everything is multi-colour, and parts of the landscape are animated. Lava flows from volcanoes, spiders wriggle in webs, little bogey men pop up out of holes – and pop back again – and a phoenix flutters out of volcanoes. With many of the opposition running along the ground, bombing is essential, especially as half the bonuses and power-ups are down there. Just bomb that egg and see double or triple-headed icons; faster fire; auto fire; wing shields; extra lives; bigger spittle and other goodies float briefly around. You will need those heads and all that

extra firepower, and speed, to counter the incoming flak, and then when you meet the end-of-level monsters, which are particularly large and

unpleasant. The triffid had us confused for a while, until we realised that you had to bomb its roots. Then we were away.

After the similar but completely awful *1942* it is reassuring to discover that software houses can produce excellent scrolling shoot 'em ups. *Dragon Spirit* is just that. It is a pity that you have to bomb sea lions on level six though.

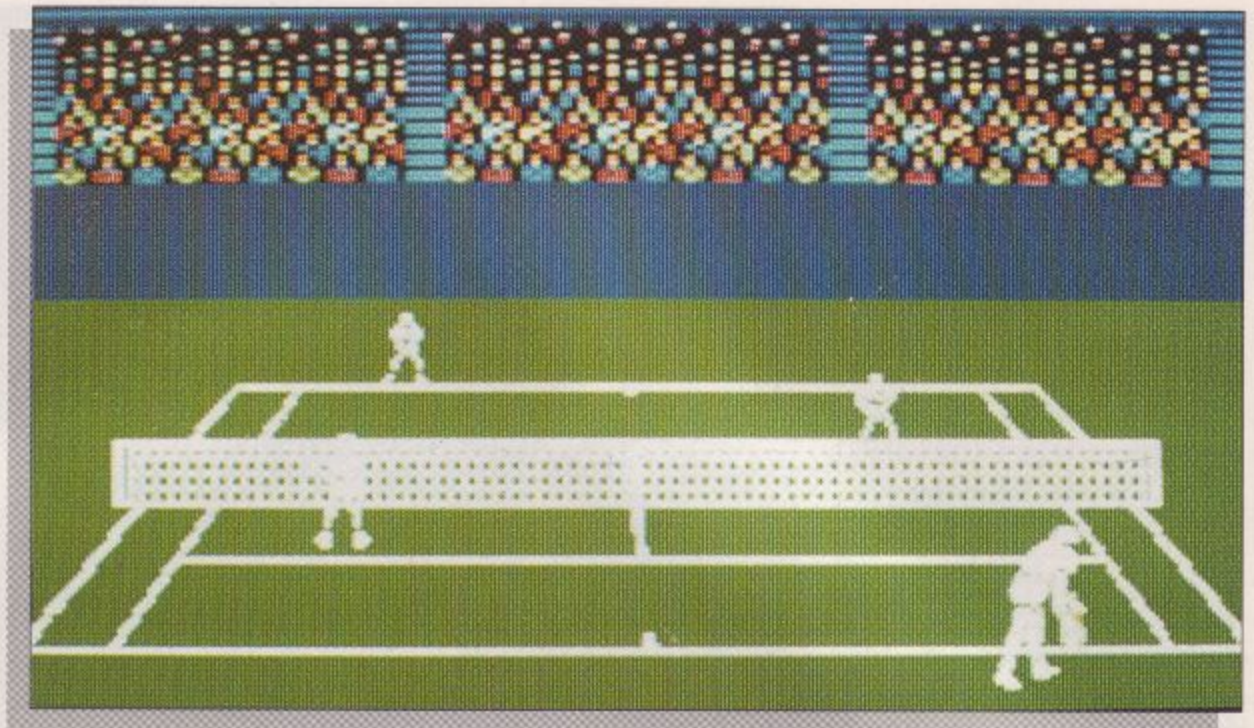
Mark Luckham



ROUND-UP			
NAME	Dragon Spirit		
SUPPLIER	Domark	PRICE	£9.99
GRAFFIX	92%	SONIX	61%
PLAYABILITY	84%	OVERALL	88%

“Tension. Where was it coming from? The stomach? The heart? Hell? The dewy grass glistened in the morning sun while I sat, racket in hand, waiting for the call to join the world on the centre court. The thick, ripe stench of week-old strawberries played dancing games with my concentration and the thought of days gone by, the tears and torment that tournaments bring. Fifty-five bottles of barley-water later, the rantings of Dan Maskell still echo through the halls of the clubhouse, and here I am, ready, tense, tuned like a radio and waiting for the final.”

That was an extract from Joss McStick's *Travels Through A Suburban Hard-court*, which, many critics believe emphasises the un-



ing Shot “allows you to participate in championship tennis at world-class standard, visiting locations all over the globe.” To a certain extent this is true, but it is

the opening game. The view of the court is represented at this stage at spectator level but it then switches to an overhead view for rallies. An initial encounter with a rally can be a little daunting and confusing because of both a lack of ball judgement and an understanding of ground-shot controls. There are four possible shots – flat, slice, topspin and lob – which are controlled by moving a joystick in the desired direction and pressing the fire button. With a little practice this soon becomes second nature.

The game incorporates the usual elements of tennis, including double faults, aces, body touches and the scoring system. You are, in fact, required to reach six games to win a match, then you will be whisked off to another round in another location. With three tournaments under your belt – French, Australian and American – you will eventually reach the culmination

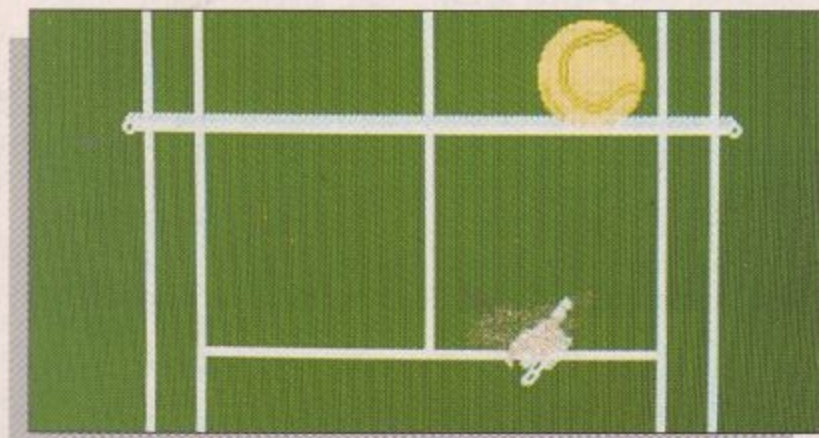
of your tennis career, at the English rose of Wimbledon. The nerves begin to fray once you have trodden the hallowed turf of the home of tennis with only three games separating you from the title. It may be time to regret all the strawberries and cream!

If you cannot cope with the individualistic slant of singles, perhaps a shot at doubles would suit you better, if of course, you have any friends at hand. The doubles game can be more fun, although with only one joystick, keyboard controls can be a little difficult for one of the five players. All things considered, the game is fun and easy to play, although interest may wain after a few plays as the desire for more speed grows. Nevertheless, *Passing Shot* will provide considerable entertainment for the dreamer with aspirations but little practical talent, whatever the weather.

Basil Bread

Passing Shot

Summer may be over, but the fun goes on with this tennis simulation.



tapped drive of British youth towards distant goals of international glory that elude our beleaguered tennis pros. *Passing Shot* from Sega promises to provide the lost youth of today with a chance to live out such aspirations on the tennis world. Originally a coin-op game, *Passing Shot* is now available for the home computer market and is destined to earn some significant interest.

The documentation for the game claims that *Pass-*

important to take into account the limitations of home computers. Players can indeed take to the road and travel the world, playing on grass and clay courts depending on the location. To begin with, level 1 will enter you in the final of the French Open against a character with initials suspiciously reminiscent of the name Yannick Noah or Young Ned.

With your heart still bleating like that of a stranded sheep, it is time to master your strokes and serve for

ROUND-UP			
NAME	Passing Shot		
SUPPLIER	Image Works	PRICE	£9.99
GRAFFIX	60%	SONIX	55%
PLAYABILITY	83%	OVERALL	66%

XENON

2

MEGABLAST

XENON II: MEGABLAST

XENON II: this time it's war!

The Xenites are back and have thrown time itself into turmoil, only you can save the day – not to mention the universe!

BATTLE through five VAST, graphically UNCANNY levels, DESTROYING wave after wave of EVIL aliens with the DOZENS of POWERFUL WEAPONS at your disposal.

XENON II: HARD, fast COIN-OP QUALITY destructive action with a HOT soundtrack to match... a mind blowingly accurate David Whittaker rendition of the 'Bomb The Bass' Megablast.

XENON II: it's out of this world!

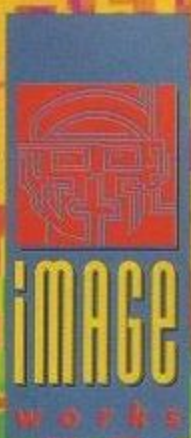
XENON II: it's a Megablast!

XENON II: it's a Bitmap Brothers game!

Available Soon on Atari ST, AMIGA & PC.



Screen Shots From Atari ST Version.

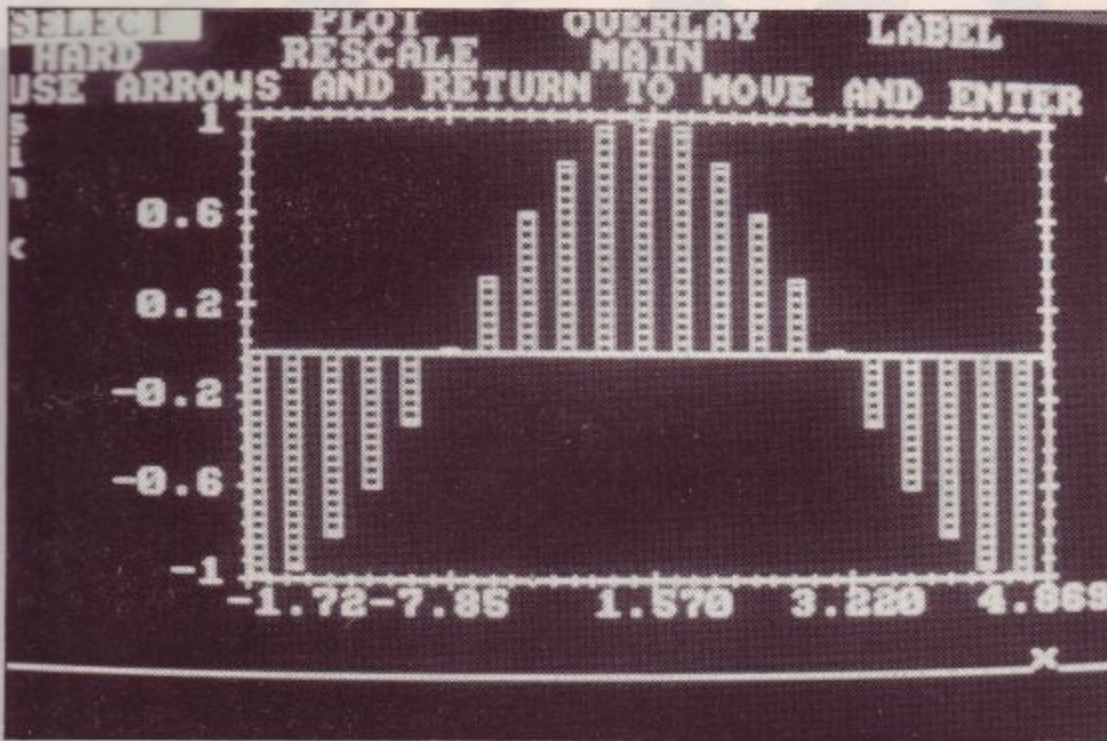


© 1989 MIRRORSOFT LTD
© 1989 THE BITMAP BROTHERS
MEGABLAST written by Tim Simenon
Produced by Simenon/Gabriel
Appears courtesy of Rhythm King Records
Published by Rhythm King Records



MIRRORSOFT
Irwin House
118 Southwark Street London SE1 0SW
Tel: 01-928 7450 Fax: 01-583 3494





are three types of bar charts and histograms: centre, left and right. When first accessing the plot menu, the user must choose which type of display he needs; then he must make these further choices before he can start specifying which data set goes on which axis. After that, everything is plain sailing.

The plot menu allows overlaying of graphs or bar charts on graphs, but the other plot types may only be overlaid by similar plots. There may be no more than fifteen overlays, only three in the case of pie charts. This is as much because of the need to avoid overcrowding as it is because the program capacity is being filled up. Plots can also be re-scaled and labelled up to fifteen times with whatever notes the user chooses.

When all necessary adjustments have been made, the final product may be printed out. Users do not need to have an expensive plotter to get good results from this program. A hard copy of the plot can be obtained by a screen dump to dot matrix printer or by the use of a pen-plotter such as the MCP 40.

Throughout the program, instructions are delivered on-screen and the manual is very easy to read, if a little cramped. Error messages or user mistakes are accompanied by low-tone beeps from the machine. These beeps should be treated as warnings unless otherwise specified in the manual.

Users will also notice that the program is capable of being set for colour or green-tube monitor (default colour). Here is another example of how the program caters for a wide range of users; with a standard hardware set, good-looking results can be produced for whatever purpose. Users needing more professional-looking hard copy have only to use the right machinery. This program can cope with both worlds. As long as the user knows what he wants to do, there should be no problems. The manual is readable and instructive with plenty of examples for the user to follow. There is example data supplied on the disc. Arnold Plot is a flexible, affordable program which can give CPC users capabilities so far monopolised by owners of more complex machines.

Title: Arnold Plot
 Supplier: The Micro Computer Ltd
 Price: £39.95 Disc/£24.95 Tape
 with reduced specification

A great plot

Yvonne Taylor reviews a new menu-driven plotting package, from TMC.

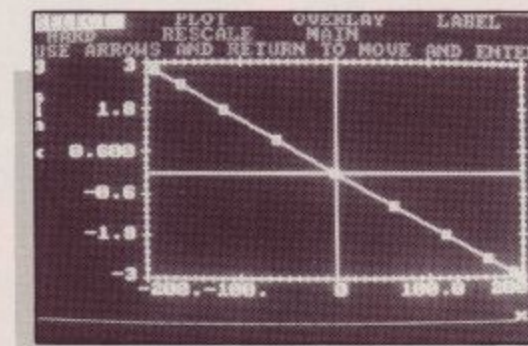
Arnold Plot is a menu-driven plotting package for Amstrad CPC users at home, school or in business. Everything the user needs to know about is accessed via the main menu. Most of the menu is taken up with the creation and manipulation of the all-important data sets. The user may input a maximum of 15 data sets with a maximum of 50 values per set to give an overall maximum of 750

features more sophisticated options such as the ability to apply an expression such as $X + 10$ to given values; it will work out calculations such as the average and can perform more complex polynomial equations as well.

Data sets can be saved and re-loaded when the user needs them and all sets in memory are noted in the index in the main menu. Once the user has satisfactorily entered his data, he can access the plot menu from the

values in the Arnold Plot database. These data sets can contain any sort of information the user chooses; details of school science projects or business sales charts are equally applicable.

Data is entered into the program via the Data Editor. By accessing the Edit Data Set option new data sets may be created. The edit screen displays a command line along the top, the rest of the screen being divided vertically down the middle. On the left of the dividing line is the chosen name of the data set and the input cursor: up to 15 values may be entered here. The sixteenth and further values are entered on the right-hand side of the dividing line. Corrections such as insertions or deletions can be made easily, so the user will not find it difficult to manipulate the data. The Data Editor also



main menu. The plot screen is divided into three parts. At the top is the command line and space for user instructions. There is a large area to display graphs and at the bottom of the screen there is a separate section in which to display information and error messages. Data sets can be plotted as graphs, bar charts, histograms, high-low charts and pie charts. Further options are for lines, symbols, or lines and symbols graphs, and there

IRENE SOFTWARE

ADD AN 800K DISC DRIVE TO YOUR CPC

Our 80 track double sided 3.5 inch disc drive will allow you to store 800K on a single 3.5 inch disc. The drive is a slimline 1 inch high citizen mechanism (as used on the Amiga and ST) and comes complete in a steel casing and with a power supply and cable to connect to the computer (please specify 464/664/6128). We have three different software packages that complete the system, RAMDOS & ROMDOS by KDS software (ROMDOS is a ROM version of RAMDOS) or RODOS by ROMANTIC ROBOT. 464 owners must already own a first drive and interface before they can use our drive.



TELEPHONE
061 228 1831



NEW LOW PRICES! SAVE £15.00 ON ALL DRIVES

Disc drive with RAMDOS	£109.99
Disc drive with ROMDOS	£119.99
Disc drive with RODOS	£119.99
Blank 3.5 inch disc	£1.00
ROMBOARD (holds 6 ROMS)	£24.99

All prices include VAT and postage



**84-86 PRINCESS ST.,
MANCHESTER M1 6NG**

The hack is back in town

The man with the
pentangle, Triumph
Bonneville and
complete Led
Zeppelin back
catalogue brings
you the freshest
pokes in CPC
city.



Okay hackfans, plug in your monitors, dust off your keyboards, and pop in a new tape; we are hacking again. Yeah, I guess you can put the kettle on too, if you want.

Alan Dougherty from Belfast is one of the many who have cracked the anagrams in level one of *Vindicator*, and is also one of the few who has actually bothered to send in the answers! Before you read them, let it be known that he wants some help with *Captain Blood*, as he is getting nowhere fast with the *Migrax*. Here is the stuff you are after:

- HUGE PHALUS - PAUL HUGHES
- LEON WUPAS - PAUL OWENS
- RON H VAIN - IVAN HORN
- MALEK MIB - MIKE LAMB
- DR ANTONI CLAM MD - MARTIN MCDONALD
- NATHAN JUNNOD - JONATHAN DUNN
- BEN STIMULOR - SIMON BUTLER
- SEAN JIM HAGGIS - JAMES HIGGINS
- SAM N JOKER - MARK JONES
- JOE HANGMEN - JOHN MEEGAN

Thanks for the solutions, Alan, but I am afraid that the only printable anagram I can make from your name is ANALED YOGHURT, which is not very good. Mind you, the first editor of *ACU* was an anagram of IRKSOM CONMAN. Append suggestions for one for the current editor to all those wonderful pokes and cheats you send in. A bonus prize to anyone who can make an anagram out of VAX!

R. Cannon of Hedgerly has come down with a bang. He has discovered that a Multiface 2+ backed up copy of *Robocop* will not run. It puts *SERVE THE PUBLIC TRUST* up on the screen and crunches. Well, Mr Cannon, all I can say is that you are in breach of the new copyright laws and have been found out. Erase your copy immediately. You have fifteen seconds to comply . . .

It is him again. John "Hackman" Girvin is back with more high-quality, low-level, sneaky, underhand methods of playing games always without fear of coming a cropper. Or at least until the electricity meter runs out.

Only ('only', he says) two games on the victimization list today: the cheap *Hopper Copper* from Firebird, and Realtime's golden oldie, *3-D Starstrike*

from the *Computer Hits 2* compilation.

The wee Hopper Copper hackette will get you or anybody else infinite lives (infinite lies?). Type it in, save it, and run it with your Hopper Copper tape rewound and poked in the drive. Magical things happen to the colours on the title screen, and the energy display looks more than a little drunk, but do not worry about it, man.

```

1 'Hopper Copper Hack
2 'By John Girvin
3 'August 1988
4 '
10 MODE 0:OPENOUT "D"
20 MEMORY $15FF:CLOSEOUT
30 LOAD "!",&1600
40 LOAD "!",&C000
50 LOAD "!",&2000
60 POKE &7D19,0:POKE &8054,&A7
70 POKE &7D14,0:POKE &7EOC,5
80 CALL &6069
    
```

Now for the 3-D Starstruck thing. This is a game to which I keep coming back whenever I feel like a mindless blast (that is most of the weekend). It

You are given lasers
that are so cool they
wear mirrored
shades.

works much like the Hopper Copper pokette, but you are given lasers that are so cool they wear mirrored shades, and you also get infinite shields. If you are a really boring cosmic wimp, you can stick to level one, thus avoiding the barriers in the trench which appear in higher levels. You had better appreciate this, okay? Fast forward over the file "STAR", and RUN the pokette:

```

1 '3D Starstrike Hacks
2 'By John Girvin
3 'August 1989
4 '
10 OPENOUT "D":MEMORY
&13FF:CLOSEOUT
20 MODE 0:BORDER 0:RESTORE
30 FOR P+0 to 15:READ C:INK
P,C:NEXT P
40 LOAD "!"SETUP,BIN":CALL &8EA
50 LOAD "!"CODE,BIN"
60 POKE &2665,0:POKE
    
```

```

&9FD6,&A7:'Stay on one level
70 POKE &380E,0:'Cool lasers and
infinite shields
80 CALL &279C
90 DATA 0,2,6,18,20,24,26,26,26,
26,26,26,26,15
    
```

Well done, John. Packet of goodies on their way to you, bribery and corruption as per usual. Oh yes folks, should you send in any pokes, please let me know whether the poke is for tape or disc (John's were both tape), and what kind of machine you have, in case I am feeling generous.

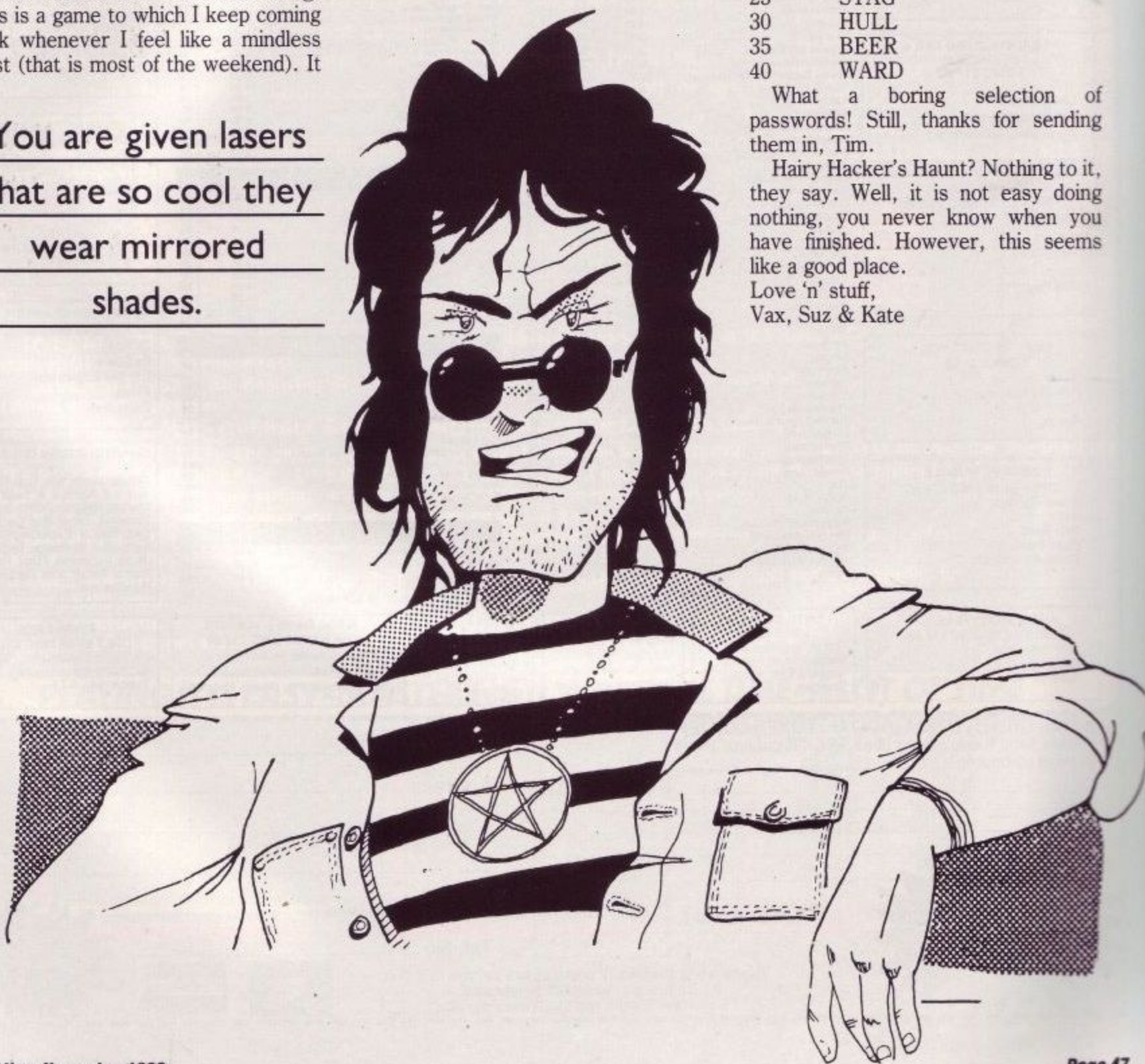
Tim Lowell sent some stuff in, not to me, but to the 10-liner department. Still, he has passwords for Code-master's *Ninja Massacre* and here they are:

Level	Password
5	RAIN
10	YEAR
15	ROCK
20	PINK
25	STAG
30	HULL
35	BEER
40	WARD

What a boring selection of passwords! Still, thanks for sending them in, Tim.

Hairy Hacker's Haunt? Nothing to it, they say. Well, it is not easy doing nothing, you never know when you have finished. However, this seems like a good place.

Love 'n' stuff,
Vax, Suz & Kate



KICK OFF

BLISTERING PACE PIXEL PERFECT
PASSING SUPERB TACTICAL PLAY

- * Full size multi-directional scrolling pitch.
- * Option to practice and learn ball control, take corners and practice penalties.
- * One or two player option: 4 distinct tactics.
- * League competition for 1 to 8 players. Load and Save league facility.
- * Simple controls to dribble, shoot, pass, chip or head the ball or do a sliding tackle.
- * 9 types of Corner Kicks, Penalties, Yellow and Red Cards, 12 different Referees. Host of other features.



AVAILABLE ON

AMIGA	£19.95
ATARI ST.....	£19.95
CBM 64 Cass	£9.95
CBM 64 Disc	£14.95
IBM PC Comp.	£24.95
SPECTRUM Cass.	£9.95
SPECTRUM Disc.	£14.95
AMSTRAD Cass	£9.95
AMSTRAD Disc	£14.95



**KICK OFF
SCORES WITH REVIEWERS**



- * CVG - OVERALL 88% - Most playable soccer simulation in binary history. Realism is the name of the game. HIGHLY RECOMMENDED.
- * ZZAP - OVERALL 96% - So Realistic, So Fun, Soooo Addictive. Boots all other football simulations over the crossbar.
- * AMIGA FORMAT - GOLD - OVERALL 91% - The best football game on the Amiga todote.
- * THE ONE - OVERALL 88% - The game is such a joy to play. By far the best to appear on 16 bit. It is all over bar the shouting.
- * POPULAR COMPUTING WEEKLY - OVERALL 94% - The opposition gets blown away by the utter brilliance of KICK OFF, which has the proper options and the best gameplay seen in any football game.
- * THE ACE - A great football game that will have you queuing up for a season ticket.
- * NEW COMPUTER EXPRESS - KICK OFF is simply the best football sim. we've played on any micro. It's fast, furious and immense fun. Go and buy it.
- * THE GAMES MACHINE - OVERALL 87% - Best 16 bit soccer simulator yet. True football skills are needed in every sense of the word.
- * ST USER - OVERALL 9 - The whole game is a complete delight to play and immediately addictive. This is one of the fastest and most exciting action games around and it just has to be the best football simulations yet.

PLAYING IT IS EASY-MASTERING IT WILL TAKE TIME-A LOT OF TIME



AMIGA



ATARI ST



CBM 64

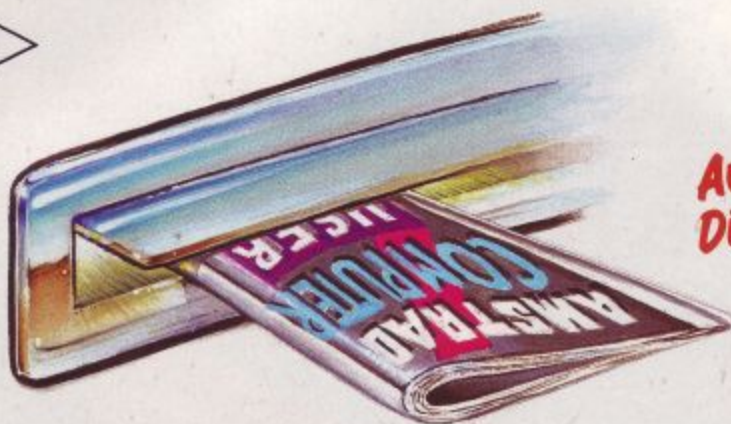
ANCO

ANCO SOFTWARE LTD., UNIT 10, BURNHAM TRADING ESTATE, LAWSON ROAD, DARTFORD, KENT.
Telephone No.: 0322 92513/92518. Mail Order by Cheque, Postal Order, ACCESS or VISA. FAX No.: 0322 93422.

3

Reasons Why You Should Subscribe Today!

1



Convenience

Direct to your door at
NO EXTRA COST*
we pay the post!

*Avoid
Disappointment*

Never again worry about
your local newsagent
selling out.

Save Money

Avoid any price
increases for the next
14 issues by subscribing.

+ 2

FREE ISSUES

**YES 2 extra issues of your favourite
magazine absolutely FREE!**

3

**This fabulous offer can't last forever so
Act NOW! Don't forget, if you are
currently a subscriber you too can take
advantage of this special deal by
renewing TODAY!**

UK: £16.20; EUROPE: £23.00; MIDDLE EAST: £23.30;
FAR EAST: £25.90; REST OF WORLD: £23.80 or USA: \$41.00.

Airmail Rates on Request

*Overseas subscription rates include postage



Please begin my subscription to Amstrad Computer User (at the special offer of 14 issues for the price of 12) with the _____ issue.

I enclose my cheque/money order for £ _____ made payable to: FOCUS MAGAZINES LIMITED
or debit my Access/Visa No.

Expiry Date.....

Name

Address

Postcode (please enter postcode to ensure prompt delivery)

Signed..... Date ACU11

Please send this form with your remittance to: Judi Gallon, Focus Magazines, Greencoat House,
Francis Street, London SW1P 1DG.

QuickShot
JOYSTICKS

**ONE THING
MAKES THEM BETTER THAN
THE REST....**

Performance

SPECTRAVIDEO LTD. Unit 27 Northfield Industrial Estate, Beresford Avenue, Wembley, Middlesex HA0 1NU England.
Telephone: 01-900 0024 Facsimile: 01-903 6625

Emergency – invasion imminent

This month your favourite aunt brings you the second part of Auntie John and the invaders from outer space – so get blasting.

Greetings! If you missed last month's exciting machine-code extravaganza, then I'm afraid that what follows will be almost totally irrelevant. The assembler source code that follows is the second and final instalment of our DIY (Destroy it Yourself) Space Invaders game. If you don't have last month's ACU then rush out to that newsagent around the corner who always has lots of back issues and buy it immediately. If your newsagent is anything like mine, it is staffed by two old ladies who still refer to money as 'new pence' and who think a computer is someone who gets the train to work every morning. Technology seems to have passed by this particular part of the world. For goodness sake, you can even buy a copy of 'Your ZX81'!

Alternatively, have a word with the Back Issue Department; she has nothing better to do while she watches *Neighbours* during the lunchbreak.

The assembler listing that is taking up all that space over there is the second half of our Space Invaders program. If you are typing it all in, please bear in mind that it must be added immediately after the first section of code: It cannot be assembled separately, because the labels cross-reference between the listings. Load up the code you spent all last month entering and type in all this stuff directly after it. What fun! If you don't think that there will be enough space in your computer's memory to hold all the source listings as well as the assembled code, check out your as-

sembler instructions for written object code to disc or tape. With the MAXAM assembler, the directive in question is 'WRITE <filename>'.

This month's assembler is the code needed to control the Invaders, move the bombs, and provide the various sub-routines needed, such as printing text and creating random numbers. (The random number sub-routine is a very useful one which you may want to steal, copy, borrow, rip-off and use it in your own programs). All the game

```

: ----- INVADERS -----
: ----- Part Two -----

INVADERS                                ;Control the Aliens.
    push iy:pop ix:call PRINT_INVADERS    ;Business with (Y/IX
    call MOVE_INVADERS                    ;is to animate aliens
    call CONTROL_BOMB                      ;see text.
    ret

PRINT_INVADERS
    ld a,0:ld (moveflag),a
    ld b,4                                  ;There are 4 rows.
    ld de,invadersdata                    ;DE -> life/death array.
    ld a,(ypos)                            ;Aliens' height
    ld h,a
lpb   push bc
    ld b,7                                  ;There are 7 columns.
    ld a,(xpos)                            ;How far across the
    ld l,a                                  ;screen they are.
lpc   push bc
    ld a,(de):cp 0:jr z,delay               ;if this invader is dead then slow down.
    push de:push hl
    call PRINT_ALIEN                       ;Print a single Alien
    pop hl:pop de:push de:push hl
    call CHECK_INVADER                     ;is it being shot?
    pop hl:pop de
    ld (de),a
dead  inc de
    ld a,6:add l:ld l,a
    pop bc
    djnz lpc
    ld a,3:add h:ld h,a
    pop bc
    djnz lpb                                ;Continue until all
    ret                                     ;Aliens looked at.

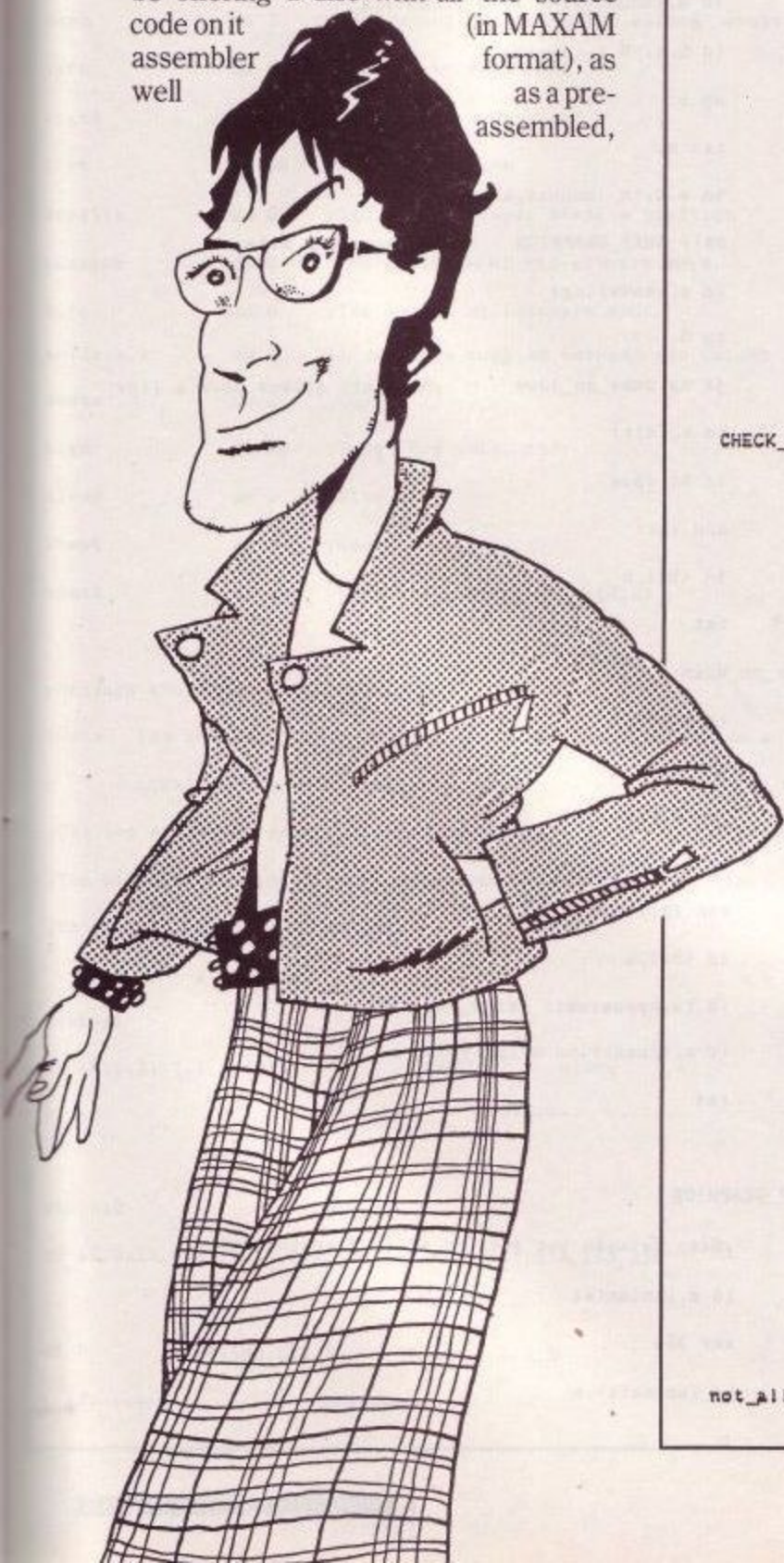
delay ld b,70                               ;This delay is to
lp3   djnz lp3                             ;reduce the speed of the

```

variables are given their definitions in this section and, worst of all, the graphics data is defined. Graphics data is the bane of every programmer's life: it takes forever to define it all. I created it all with the Advanced Art Studio, and then wrote a program to make machine-code data statements out of the drawings. You'll just have to type in all the numbers I'm afraid.

The machine code itself does nothing startlingly complicated. To animate the Invaders - in real terms swapping between two sets of graphics data - the IY and IX registers are used. The routine SWAP-GRAPHICS decides the data to be printed, using a variable which toggles between the two values of zero and 255.

And so all there is left to say is get typing! For the faint hearted ACU will be offering a disc with all the source code on it (in MAXAM assembler format), as well as a pre-assembled,



```

        jp dead                                ;game as more and more
                                                ;Aliens are killed.

PRINT_ALIEN                                ;Print a single Alien
        push ix                                ;at co-ords stored in
        push hl                                ;H and L registers and
        call PRINT_CHAR:push de:pop ix        ;graphics pointed to in
        pop hl:push hl                          ;the IX register.
        inc i:inc l
        call PRINT_CHAR:push de:pop ix        ;Each alien is made up
        pop hl:push hl                          ;of several characters
        ld a,4:add l:ld l,a                    ;which must all be
        call PRINT_CHAR:push de:pop ix        ;printer one after
        pop hl:push hl:inc h                    ;the other.
        call PRINT_CHAR:push de:pop ix        ;The graphics data
        pop hl:push hl:inc h                    ;which is held in IX
        inc l:inc l                            ;is updated during the
        call PRINT_CHAR:push de:pop ix        ;call to PRINT_CHAR
        pop hl:push hl:inc h
        ld a,4:add l:ld l,a
        call PRINT_CHAR
        pop hl
        pop ix
        ret

CHECK_INVADER
        ld a,(missile)
        cp 0
        jp z,not_hit                            ;Can't be shot if no missile is fired.
        sub l
        op 6
        jp nc,not_hit                            ;Missile missed alien.
        ld a,(missile+1)
        sub h
        cp 2
        jp nc,not_hit                            ;Missile missed alien.
        ;Bang! The missile has hit the Alien.
        push hl:ld ix,space:call PRINT_MISSILE:pop hl        ;Erase missile
        ld ix,banggr:call Print_Alien                        ;Draw explosion.
        call wait_frame:call wait_frame:call wait_frame    ;pause
        push hl
        ld a,0:ld (missile),a                            ;Reset missile
        ld a,(hits):inc a:ld (hits),a                    ;Increase hit counter
        op 2B:jp nz,not_all_dead                          ;Are all aliens dead?
        ld a,A:ld (flag),a
not_all_dead
    
```

```

ld hl,(score):ld bc,5:add hl,bc:ld (score),hl ;increase score
call Print_score ;and print it.
ld hl,(score):ex de,hl:ld hl,(high) ;is it greater than
sfs:ofs:bc hl,de ;the high score?
jr nc,less_than
ld hl,(score):ld (high),hl ;yes - change high
call Print_high ;and print it.
less_than
pop hi
ld ix,space:call Print_Aliens:ld ix,aliengr2 ;Erase explosion
ld a,0
ret
not hit call DROP BOMB
ld a,l:cp 0:call z,movedown ;Check for sides of
ld a,i:cp 70:call z,movedown ;screen, and if aliens
ld a,h:cp 22:jr nz,not_landed ;have reached bottom.
ld a,2:ld (flag),a
not_landed
ld a,1
ret
movedown
ld a,i:ld (moveflag),a:ret
DROP BOMB
;Given DE from Invadersdata decide (or not) to drop bomb
ld a,(bomb):cp 0:ret nz
push hl:push de
ld hl,7
add hl,de
ld a,(hl)
cp 0
jr nz,no_bomb
call random
ld a,l:and 127
cp 48
jr nz,no_bomb
pop de:pop hl
ld a,h:inc a:inc a:ld (bomb+1),a
ld a,l:inc a:inc a:ld (bomb),a
ret
no_bomb pop de:pop hl:ret
CONTROL_BOMB
;Print invaders bomb and move it down the screen.
ld a,(bomb):cp 0:ret z
ld hl,(bomb)
ld ix,space:call PRINT_CHAR
ld a,(bomb+1):inc a:ld (bomb+1),a

```

```

op 25:jr z,stopbomb
ld hl,(bomb)
ld ix,bombgr:call PRINT_CHAR
ret
stopbomb
;Check to see if it has hit anything.
ld a,(basepos):ld b,a
ld a,(bomb)
sub b
cp 4
jr no,not_hit_base
ld a,3:ld (flag),a
not_hit_base
ld a,0:ld (bomb),a
MOVE_INVADERS
;Err.. move the invaders!
ld a,(count):inc a:ld (count),a
ld b,a:ld a,(speed)
cp b
ret nz
ld a,0:ld (count),a
call SWAP_GRAPHICS ;Animate the aliens.
ld a,(moveflag)
cp 0
jr nz,come_on_down ;Move all aliens down a line.
ld a,(dir)
ld hl,xpos
add (hl)
ld (hl),a
ret
come_on_down
ld a,(dir)
xor '254
ld (dir),a
ld hl,xpos
add (hl)
ld (hl),a
ld ix,space:call PRINT_INVADERS
ld a,(ypos):inc a:ld (ypos),a
ret
SWAP_GRAPHICS
;Swap between two sets of alien graphics data.
ld a,(animate)
xor 255
ld (animate),a

```

```

ld iy,aliengr1
op 0
ret z
ld iy,aliengr2
ret

;-----*** Variables ***-----

flag          db 0      ;The Control flag
speed         db 0      ;How often the baddies move
count         db 0      ;A counter used with 'speed'
invadersdata  ds 26     ;Area where invaders are stored
db 0,0,0,0,0,0 ;Seven zeros used by Drop-bomb routine, honest!
moveflag     db 0      ;A flag controlling invaders movement down the screen
dir           db 0      ;The direction they move in
xpos         db 0      ;Their actual x co-ord
ypos         db 0      ;The highest invader position
bomb         dw 0      ;The co-ordinates for the aliens' bombs
left         db 8      ;The key to move left
right        db 1      ;The key to move right
fire         db 23     ;The key to fire
missile      dw 0      ;Stores the player missile position
basepos      db 0      ;The position of the players base
hits         db 0      ;The number of invaders shot
animate      db 0      ;A variable toggled between two values
score        dw 0      ;Guess!
high         dw 20     ;Tough one this, too!
lives        db 0      ;Give up.
sheet        db 0      ;Hm.
space        ds 96.0   ;Blanks for erasing graphics

;Message and Space-shield strings.
;Note The number 31 is a control character which acts like a
; LOCATE statement. Similarly, 15 and 14 control PEN and PAPER.
;Get the spaces correct by cosparing with the dashes in the comments line.
;The strings contain not only words (such as SCORE:) but block graphics
;to define the player's shields.

string1
db 15,1,31,1,1,"SCORE:      SHEET:      HIGH:      s"
;
;-----

string2
db 15,3,14,0,31,6,20,214,143,215,"      ",214,143,215
;
;-----
db "      ",214,143,215,"      ",214,143,215
;
;-----

db 31,6,21,143,143,143,"      ",143,143,143
;
;-----
db "      ",143,143,143,"      ",143,143,143
;
;-----
db 31,6,22,212,32,213,"      ",212,32,213
;
;-----
db "      ",212,032,213,"      ",212,032,213.15,1,"s"
;
;-----

string3
db 31,14,10,"GAME OVERs"

string4
db 31,14,10,"WELL DONEs"

string5
;String to erase the little bases drawn up by Print_lives routine.
db 31,13,1,32,32,32,31.13,1,"s"

string6
;Title screen
db 15,1,31,4,5,"Hyperventilating Space Invaders"
db 15,2,31,19,7,"by"
db 15,1,31,15,9,"Auntie John"
db 15,3,31,11,12,"Press Space to Plays"

;-----*** General Purpose SubRoutines Library ***-----

PRINT_CHAR
;This is a very fast Character-sized Object print routine.
;ix = address of a 16 byte table of graphics
;h = Y co-ordinate (0-24)
;l = X co-ordinate (0-78)
push ix:ld e,l:ld a,h:sla a:ld hl,chartable:ld b,0:ld o,a:add hl,bc
ld a,(hl):ld c,a:inc hl:ld a,(hl):or &0:ld b,a
ld a,e:ld l,a:ld h,0:add hl,bc:pop de:ld bc,&7ff
ld a,(de):ld (hl),a:inc hl:inc de:ld a,(de):ld (hl),a:inc de:ld hl,bc
ld a,(de):ld (hl),a:inc hl:inc de:ld a,(de):ld (hl),a:inc de:ld hl,bc
ld a,(de):ld (hl),a:inc hl:inc de:ld a,(de):ld (hl),a:inc de:ld hl,bc
ld a,(de):ld (hl),a:inc hl:inc de:ld a,(de):ld (hl),a:inc de:ld hl,bc
ld a,(de):ld (hl),a:inc hl:inc de:ld a,(de):ld (hl),a:inc de:ld hl,bc
ld a,(de):ld (hl),a:inc hl:inc de:ld a,(de):ld (hl),a:inc de:ld hl,bc
ld a,(de):ld (hl),a:inc hl:inc de:ld a,(de):ld (hl),a:inc de:ret
chartable
;data needed for above subroutine.

```

```
dw &C000,&C050,&C0A0,&C0F0,&C140,&C190,&C1E0,&C230,&C280
dw &C2D0,&C320,&C370,&C3C0,&C410,&C480,&C4D0,&C520,&C590
dw &C5E0,&C630,&C680,&C6D0,&C720,&C790
```

```
PRINT_STRING
;Print an ASCII string ending with a (non-printed) Dollar
ld a,(hl)
cp "s"
ret z
call txt_output
inc hl
jr PRINT_STRING
```

```
PRINTHL
;Print the contents of the HL register pair as a five-digit
;decimal number. You should know this code inside out by now!
ld de,10000:call pri:ld de,1000:call pri:ld de,100:call pri
ld de,10:call pri:ld de,1:pri:ld a,255:pr2:inc a:scf:cbp hl,de
jp nc,pr2:add hl,de:add 48:jp &bb5a
```

```
RANDOM
;Return a pseudo-random number in the HL pair
;Treat it as a magic formula. I do.
push af:push bc:push de:ld bc,(seed):ld hl,(seed)
sla l:rl h:add hl,bc:ld b,h:ld c,l:sla l:rl h
ld d,l:sla l:rl h:sla l:rl h:add hl,bc:ld b,h
ld c,l:ld h,d:ld l,&29:or a:bc hl,bc:ld (seed),hl
pop de:pop bc:pop af:ret
seed dw 0
```

-----*** Very Boring Graphics Data ***-----

--- Try bribing your younger brother to type this in! ---

```
boabgr
;The Alien's bomb.
db 0,12,3,192,48,12,0,195,0,60,3,192,48,12,0,192
```

```
missilegr
;The Player's missile
db 1,8,1,8,1,8,0,0,16,128,16,128,0,0,17,136
```

```
aliengr1
;The first Alien position
db 0,0,0,0,0,51,0,118,0,248,0,248,0,248,0,234
db 119,238,248,241,240,240,148,146,150,150,240,240,240,240,240
```

```
DB 0,0,0,0,204,0,226,0,241,0,241,0,241,0,49,0
db 0,234,0,234,0,251,0,249,0,252,0,50,0,0,0,0
db 98,100,84,32,32,64,136,0,196,17,136,0,0,0,0,0
db 117,0,117,0,117,0,249,0,228,0,200,0,0,0,0,0
```

```
aliengr2
;The second Alien position
db 0,0,0,51,0,118,0,248,0,248,0,248,0,234,0,234
db 248,241,240,240,148,148,150,150,240,240,240,240,234,117
db 0,0,204,0,226,0,241,0,241,0,241,0,117,0,117,0
db 0,234,0,234,0,234,0,224,0,224,0,228,0,238,0,0
db 100,98,34,68,0,0,0,0,0,0,0,0,0,0,0
db 117,0,117,0,117,0,112,0,112,0,114,0,119,0,0,0
```

```
basegr
;The data for the Player's base
db 0,0,0,0,0,0,0,0,0,0,7,0,120,0,120,0,120
db 1,8,16,128,19,132,54,194,120,225,240,240,240,240,240
db 0,0,0,0,0,0,0,0,14,0,225,0,225,0,225,0
```

```
banggr
;The explosion data
db 0,0,0,18,0,84,0,102,0,51,0,145,0,240,0,128
db 0,136,17,40,145,104,209,128,241,59,141,78,251,12,75,93
db 0,0,0,0,64,0,255,0,135,0,0,0,17,0,238,0
db 0,248,0,51,0,69,0,113,0,17,0,204,0,68,0,136
db 135,120,47,140,240,107,20,33,84,118,220,68,4,34,48,102
db 224,0,0,0,138,0,238,0,51,0,128,0,128,0,0,0
```

----- THE END -----

-
- ;Possible things you might like to add
- ;1. Sound effects *
 - ;2. Interrupt driven Music *
 - ;3. High score table *
 - ;4. Different ink/papercolours *
 - ;5. Useful shields
 - ;6. More varied aliens
 - ;7. Joystick or user defined controls
 - ;8. Anything else you can think of...

;(* = covered in previous AJ Machine Code articles)

520ST-FM SUPER PACK



**1Mb DISK DRIVE
£450 OF SOFTWARE**

ARCADE GAMES

Arkanoid II	Imagine	£19.95
Beyond The Ice Palace	Elite	£19.95
Black Lamp	Firebird	£19.95
Buggy Boy	Elite	£19.95
Chopper X	Mastertronic	£9.99
Ikari Warriors	Elite	£14.95
Marble Madness	Electronic Arts	£24.95
Quadralien	Logotron	£19.95
Ranarama	Hewson Consultants	£19.95
Return To Genesis	Firebird	£19.95
Roadwars	Melbourne House	£19.95
Starquake	Mandarin	£19.95
Test Drive	Electronic Arts	£24.95
Thrust	Firebird	£9.95
Thundercats	Elite	£19.95
Wizball	Ocean	£19.95
Xenon	Melbourne House	£19.95
Zynaps	Hewson Consultants	£19.99

SPORTS SIMULATIONS

Eddie Edwards Super Ski	Elite	£19.95
Seconds Out	Tynesoft	£19.95
Summer Olympiad '88	Tynesoft	£19.95

PRODUCTIVITY SOFTWARE

Organiser	Triangle Publishing	£49.95
-----------	---------------------	--------

JOYSTICK

Atari CX40 Joystick	Atari Corp	£4.99
---------------------	------------	-------

FREE ATARI BUNDLE VALUE: £458.97

The Atari Super Pack is ideal for you if you want to get off to a flying start with the best in entertainment software. The Pack includes a 520ST-FM with 1Mb RAM, a built-in 1Mb disk drive, over £450 of top games and a joystick. If you buy the Super Pack at Silica Shop, we will add our own ST Starter Kit (worth over £200), Free Of Charge. Return the coupon for details.

£399

INCLUDING VAT

With SM124 mono monitor: £498 ^{INC VAT} With SC1224 colour monitor: £698 ^{INC VAT}

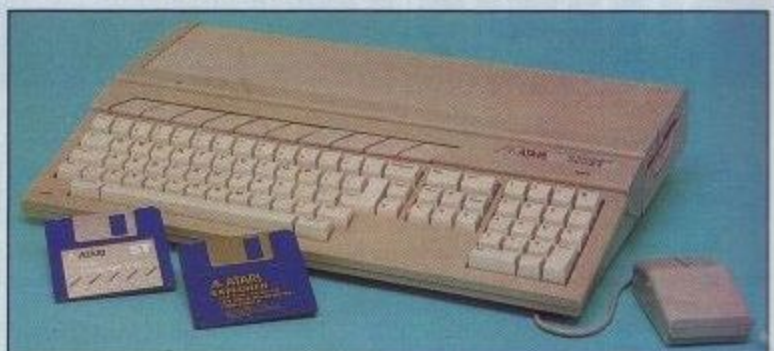


ST COMPUTERS

The range of Atari ST computers offers something for everyone. From the games enthusiast who wants the challenge of the very best in arcade action, to the businessman who wants to make financial forecasts or faultless presentations. The ST offers high quality graphics, sound and speed for the gamer, whilst providing a fast, user friendly and affordable solution to business. The ST is now firmly established in the home environment and boasts a wealth of users in education, local government, television, and a variety of different businesses. Software for the range stretches to cover applications as diverse as ENTERTAINMENT, ACCOUNTS, ART, COMMUNICATIONS, COMPUTER AIDED DESIGN, DATABASES, DESKTOP PUBLISHING, EDUCATION, MUSIC, PROGRAMMING, SPREADSHEETS, WORD PROCESSING and more. For a full list of the software available, as well as details of the ST range, complete and return the coupon below.

All prices correct at the time of going to press. E&OE

520ST-FM EXPLORER PACK WITH BUILT-IN 1Mb DISK DRIVE



The value for money offered by the Atari ST range is reflected in the Explorer Pack featuring the 520ST-FM computer with 512K RAM. The 520ST-FM computer now comes with a built-in 1 Mb double sided disk drive as well as a free mouse controller and a built-in TV modulator. The new 520ST-FM Explorer Pack includes the 520ST-FM computer, the arcade game Ranarama, a tutorial program and some useful desktop accessories. In addition, if you buy the Explorer Pack from Silica, we will give you the Silica ST Starter Kit worth over £200, FREE OF CHARGE. Return the coupon for details of our Starter Kit and of the full ST range.

£260

ONLY £2.51 PER WEEK
RETURN COUPON FOR DETAILS

+ VAT = £299

+ SM124 mono monitor: £398 ^{INC VAT} + SC1224 colour monitor: £598 ^{INC VAT}

1040ST-FM PROFESSIONAL PACK

NOW WITH TV MODULATOR

For the serious home user and the small business, we are pleased to announce a new package based around the 1040ST-FM. The 1040ST-FM has 1Mbyte RAM and a 1Mbyte built-in disk drive. In addition, the 1040ST-FM now comes with a TV modulator built-in. (The previously available 1040ST-F was designed for use with a monitor only and did not come with a modulator.) This modulator allows the 1040ST-F to be plugged directly into any domestic TV set, and comes complete with a lead to allow you to do so. The new 'Professional Pack' from Silica includes the new 1040ST-FM with modulator plus four high quality software packages including a spreadsheet, database, word processor and programming language. This 'Professional Pack' software will enable you to get straight down to business with your new computer. In addition to this software (worth £384.84), if you buy the Professional Pack from Silica Shop, you will also receive the Silica ST Starter Kit (worth over £200), Free Of Charge. Return the coupon for further information.



£499

INCLUDING VAT

With SM124 mono monitor: £598 ^{INC VAT}
With SC1224 colour monitor: £798 ^{INC VAT}

ATARI 1040ST-FM	(Computer)	£499.99
VIP PROFESSIONAL	(Spreadsheet)	£149.95
MICROSOFT WRITE	(Word Processor)	£149.95
SUPERBASE PERSONAL	(Database)	£59.95
BASIC DISK & MANUAL	(Language)	£24.98

NORMAL RRP: £884.82
LESS DISCOUNT: -£385.82

PROFESSIONAL PACK PRICE: £499.00

2Mb & 4Mb MEGA ST

The MEGA ST computers are styled as a lightweight keyboard with a separate CPU, connected by a coiled telephone style cable. There are two versions of the MEGA ST, one with 2Mbytes of RAM and the other with 4Mbytes. Each version has a 1Mbyte double sided disk drive built-in to the CPU unit. The MEGA ST's do not come with modulator built-in and must therefore be used with a monitor. With every MEGA ST purchased, we will add the 'Professional Pack' software (worth £384.83) detailed above, plus the Silica ST Starter Kit (worth over £200) both Free Of Charge. Return the coupon for further details.



2Mb MEGA ST
£899 ^{INC VAT}
+ mono monitor = £998
+ colour monitor = £1198

4Mb MEGA ST
£1199 ^{INC VAT}
+ mono monitor = £1298
+ colour monitor = £1498

DTP PageStream £149 ^{+VAT} =£171.35

Desktop Publishing (DTP) is one of the fastest growing applications for personal computers. We are pleased to announce a powerful low cost package for the Atari ST called PageStream. PageStream costs only £149 (+VAT-£171.35) and, because it works with an Atari 1040ST and a Selkash SP-190AI printer, you can be up and running with a complete system for less than £1000. Some of the features of PageStream are listed to the right. If you would like further information on this program, complete and return the coupon below, ticking the 'DTP' box in the corner.

- * TEXT-FLOW AROUND GRAPHICS
- * ROTATION OF TEXT & GRAPHICS
- * SLANT OR TWIST ANY OBJECT
- * POSTSCRIPT COMPATIBLE
- * TAG FUNCTION
- * AUTO/MANUAL KERNING & HYPHENATION
- * GROUPING OF OBJECTS

WHY SILICA SHOP?

Before you decide when to buy your new Atari ST computer, we suggest you consider very carefully WHERE you buy it. There are MANY companies who can offer you a computer, a few peripherals and the top ten selling titles. There are FEWER companies who can offer a wide range of products for your computer and expert advice and help when you need it. There is ONLY ONE company who can provide the largest range of Atari ST related products in the UK, a full time Atari ST specialist technical helpline and in-depth after sales support, including free newsletters and brochures delivered to your door for as long as you require after you purchase your computer. That one company is Silica Shop. We have been established in the home-computer field for ten years with an annual turnover in excess of £8 million and can now claim to meet our customers requirements with an accuracy and understanding which is second to none. But don't just take our word for it. Complete and return the coupon below for our latest literature and begin to experience the Silica Shop specialist Atari service.

- SILICA STARTER KIT:** Worth over £200. FREE with every Atari ST computer bought from Silica.
- PROFESSIONAL PACK:** Free business software with 1040ST-FM and MEGA ST's bought from Silica.
- DEDICATED SERVICING:** 7 full-time Atari trained staff with years of experience on Atari servicing.
- THE FULL STOCK RANGE:** All of your Atari requirements from one place.
- AFTER SALES SUPPORT:** The staff at Silica are dedicated to help you get the best from your ST.
- FREE CATALOGUES:** Mailed direct to your home as soon as we print them, featuring offers as well as all of the new releases.
- FREE OVERNIGHT DELIVERY:** On all hardware orders shipped within the UK mainland.
- PRICE MATCH PROMISE:** We will match competitors on a 'same product same price' basis.
- FREE TECHNICAL HELPLINE:** Full time team of Atari technical experts always at your service.

FREE SILICA STARTER KIT WORTH OVER £200

WITH EVERY ST - RETURN COUPON FOR DETAILS
ALL PRICES QUOTED INCLUDE FREE UK DELIVERY

DO YOU OWN AN ATARI ST?

If you already own an Atari ST computer and would like to be registered on our mailing list as an ST user, let us know. We will be pleased to send you copies of our price-lists and newsletters FREE OF CHARGE as they become available. Complete the coupon and return it to our Sidcup branch and begin experiencing a specialist ST service that is second to none.

SILICA SHOP:

SIDCUP (& Mail Order) 01-309 1111
1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX
OPEN: MON-SAT 9am - 5.30pm LATE NIGHT: FRIDAY 9am - 7pm

LONDON 01-580 4000
52 Tottenham Court Road, London, W1P 0BA
OPEN: MON-SAT 9.30am - 6.00pm LATE NIGHT: NONE

LONDON 01-629 1234 ext 3914
Selfridges (1st floor), Oxford Street, London, W1A 1AB
OPEN: MON-SAT 9am - 6.00pm LATE NIGHT: THURSDAY 9am - 8pm

To: Silica Shop Ltd, Dept AMSACU 1189, 1-4 The Mews, Hatherley Road, Sidcup, Kent DA1 4DX
PLEASE SEND FREE LITERATURE ON THE ATARI ST

Mr/Mrs/Ms: Initials: Surname:

Address:

Postcode:

Do you already own a computer
if so, which one do you own?

DTP

T M C

THE COMPUTER CENTER

"One single source" for all your Amstrad
Computer needs at competitive prices!**NEW SOFTWARE FOR THE AMSTRAD CPC RANGE**

Happy Fractions :- £16.95 D - This program explains the fraction concept implementing excellent graphics display including equivalence, comparison, addition, subtraction. It offers an exciting flying saucer tutorial game.

Happy Breathing :- £16.95 D - An excellent educational program on the Respiratory System using graphics and text to explain each part and function of the system. There is an extensive tutorial and a very interesting game.

Arnold Plot :- £39.95 D/£24.95 T - General graph plotting package, contains a sophisticated "Data Editor" and a versatile plotting facility. It can support Epson compatible Dot Matrix Printers and Pin Plotters. Presentation: pie-charts, bar charts, graph, histograms, high/low charts. Tape version with reduced specification.

TMC The Micro Computer Ltd.

9 St. James's Terrace, Nottingham NG1 6FW

Tel: (0602) 483440

**★ Microgenic Systems ★****AT LAST**THE HOME COMPUTER ENTHUSIAST CAN HAVE PROFESSIONAL HIGH QUALITY
ACCESSORIES FOR ALL CPC COMPUTERS

Our programmer is not fussy about which brand of EPROMs you buy, it programs them all! This is achieved by hand selecting individual components for every board, thus giving the exact programming voltages required by your EPROMs. Add to this the easy to use menu driven software which is supplied on ROM, the ZIF socket and many other special features and you have a professional unit for only £69.95

Our successful 8 socket ROM board also has a host of features and uses on board switches to provide the following benefits:

- Easy bank switching 0-7 to 8-15 • Fast ROM selection
- Convenient board enable/disable • Useful computer hardware reset

This no-compromise ROM board only costs £34.95

Both of these products use the latest technology high quality components and can be left safely and permanently connected to your CPC computer, using their built-in flow-through connector.

Additional items to compliment your computer system:

EPROM ERASER £22.50 - with timer £27.50 • EPROM 27C64 £5.95 - 27C128 £6.95

EPROM ANTI STATIC BOX £2.50

P&P UK FREE - EUROPE £1 - ANYWHERE ELSE £2
CHEQUES AND POSTAL ORDERS MADE PAYABLE TO:**Microgenic Systems**

PO BOX 41, WATH UPON DEARNE, ROTHERHAM S63 7PS

TELETEXTA world of information
at your fingertips

A Microtext Adaptor turns your 464 or 6128 into a sophisticated Teletext Receiver. Giving you access to any of the hundreds of free pages from Ceefax or Oracle. As well as up-to-the-minute news or football results, there's the local weather or even bargain holidays. And Teletext caters for special interests, like computing, motoring, or gardening, you'll find things to do and places to go in your area plus much much more.

But unlike a Teletext TV, a Microtext Adaptor allows you to do a lot more with the information, you can save a page to disc or cassette, perhaps to keep a watch on share prices, or print pages like what's on TV. Plus you can access and use Teletext data from your own programs, providing endless possibilities.

The Microtext Adaptor fits neatly on the expansion port, it comes with software and is very easy to use. Just connect it with the lead supplied to the VIDEO OUT or AV socket of a video recorder and change channels with the controls on the video or, there's our own Tuner which has been specially designed to provide the signal that the Adaptor needs, plug in an ariel, it tunes itself in (!) and channels are selected from your keyboard. Tune into Teletext, a world of information at your fingertips.

"A well thought out product that performs admirably."
Amstrad Action, Dec. '87

A Microtext Adaptor for use with a video is only £74.95 Adaptor and Tuner just £124.90 prices include p/p & VAT

Instructions are provided to transfer software to disc. Disc's are available for
£5.00 extra



Please send cheques/PO/s to

**MICROTEXT**

Dept AC, 7 Birdlip Close, Horndean, Hants PO8 9PW

Telephone: (0705) 595694

**EDUCATIONAL
SOFTWARE
SPECIALISTS****PRE-SCHOOL****PRIMARY****JUNIOR**

Devised by experienced teachers
Tested in Classroom and Home
Parent/Teacher notes supplied with all sets

**WIDE CHOICE OF PROGRAMS FOR
AMSTRAD 464, 664, 6128, PC1512, PCW,
ATARI ST, SPECTRUM +3
CASSETTE £9.50. DISC £12.50 PER SET**
(each set has 5 or 6 programs)

Please send SAE for lists, state model and
child's age

**ARC (ACU 10), 51 Coniston Crescent,
HUMBERSTON,
SOUTH HUMBERSIDE DN36 4BA. (0472) 812226**

Reach the top
with...**LCL**

Self-Tuition Courses

World leaders - Hons graduate/teacher authors - All disc sizes
- At all major shows - £5 off total for 2, £10 off for 3

MICRO ENGLISH

Complete course taking beginners to
GCSE in 24 programs with real speech
and graphics adventure game, 2 discs +
2 books. £24

PRIMARY MATHS COURSE

Complete course taking age 3 years to
secondary school entrance, using moving
colour pictures. 24 programs on 2 discs + 2
books. £24

MICRO MATHS

Complete course taking beginners to GCSE in
24 programs on 59 topics on 2 discs + 2
books. £24

MEGA MATHS

A-level step-by-step course. 24 programs for
£24. Full-screen graphics for calculus. 2 discs
+ 2 books.

HOME COLLEGE

Micro Maths or English with VHS video
£49.99 each.



Send cheques/PO's or phone orders for free colour poster/catalogue to
**LCL, DEPT AU, THAMES HOUSE, 73 BLANDY ROAD,
HENLEY-ON-THAMES, OXON RG9 1QB**

Tel 0491 579345

VISA

**POOLS FORECASTER ONE & TWO
CPC 464/664/6128 TAPE OR DISC**

• **LEAGUE DATAFILE** - current English and Scottish divisions. Easily MODIFIED for each new season or CREATE YOUR OWN - Australian, local amateur etc - 144 teams in 10 divisions. Non-league teams and CUP games can be added.

• **FORECASTS** - two formulae, selectable factors. Predicts HOME/DRAW/AWAY %s plus SCORECAST in one compact report. CUP adjustment. FIXED ODDS data and sorted SELECTION LISTS available. SEQUENCE LISTS and FORM SUMMARY display.

• **OPTION ONE** - full home/away lge tables, last 4 home + 4 away results. 8 forecast factors.

• **OPTION TWO** - total lge tables (P W D L F A PT), last 5 results. 6 forecast factors.

• **ONE or TWO** - £14 (disc £16). (No LEAGUE - £3 off).

• **BOTH ONE and TWO** - £18 (disc £20). MATCH files transfer between the two for dual use.

SEARCHPACK CPC 6128 DISC £12 (£6 with another disc item)

• A UTILITY for Basic Programmers - handles ASCII files to approx 60K. Uses Bank Manager.

• **SEARCH** - Edit str(W)/Find str(X-ref str(W)/Replace str(GS)/X-ref lines.

• **PACK** - take out excess spaces or REMS(GS), concatenate short lines.

• **ALSO** - edit/auto edit/delete(GS)/renumber/copy input. (GS): global/select. (W): wildcard. List and X-ref to screen or Printer. Save any PART. MERGE files. Mode 1 or 2. Screen clock. Keyboard definable.

ALL PROGRAMS feature instructions, easy back-up from menu, single keypress selection, screen colour control, output to any Printer, 1 or 2 disc drive operation, disc/tape switch, cat-erase files. SEND SAE for details, please, OR crossed cheque/PO (to Bug-hunters) - state model, tape/disc, items reqd:

BUG-HUNTERS (ACU), 71 Milford Close, Abbey Wood, LONDON SE2 0DS

MODE - ONE

21 Orchard Drive
Burton-upon-Stather
Scunthorpe DN15 9EF
South Humberside.
☎ 0724 721204

*** LOOK! NEW LOW PRICES ***

TITLE	CASS	DISC	TITLE	CASS	DISC
Airbourne Ranger	10.80	13.95	Rainbow Island NR	7.40	10.65
A.P.B.	6.90	10.50	Silkworm	6.90	10.65
Bloodwych	6.90	10.50	Special Action	9.25	12.95
Butcher Hill	7.40	10.65	Super Scramble	6.90	10.50
Batman the Movie	7.40	10.65	Skweek	7.40	10.65
Beach Volley	7.40	10.65	Stormlordy	7.40	10.65
Crazy Cars II	6.90	10.65	Thunderblade	7.40	10.65
Double Dragon NR	7.40	10.65	Typhoon	6.25	9.99
Dragon Ninja	7.40	10.65	Treble Championst	7.40	10.65
Dark Fusion	6.90	10.65	Titan	7.40	10.65
Echelon	10.50	12.99	Timescanner	7.40	10.65
Emlyn Hughes Soccer	7.40	10.65	Thunderbirds	9.90	10.50
Forgotten Worlds	6.90	10.65	Vindicators	6.90	10.65
Fist 'N Throttles	9.00	12.99	Vigilante	6.90	10.65
Fernandez Must Die	6.50	9.99	Wee Je Mans	6.90	10.65
Gunship	9.80	13.95	Xenophobe	7.40	10.65
Game Over II (+1)	6.80	10.50	Xybots	6.90	10.50
Guerrilla War	6.80	10.50	4 Soccer Simulators	6.90	10.65
Gilbert	6.90	10.50	3D Pool	6.90	10.50
Gemini Wing	6.90	10.50			
H.A.T.E.	6.90	10.65			
High Steel	6.90	10.50			
H.K. Machine	6.90	10.65			
Heatwave	9.90	12.95			
Indiana Jones	7.40	10.65			
Jaws	6.90	10.50			
Licence to Kill	6.90	10.50			
Lone Wolf NR	6.90	10.50			
Mr Heli	7.40	10.65			
Navy Moves	6.90	10.50			
New Zealand Story	7.40	10.65			
Obliterator	7.40	10.65			
Operation Wolf	7.40	10.65			
Purple Saturn Day	7.40	10.65			
Paaland	6.90	10.65			
Paranoia Complex NR	7.40	10.65			
Running Man	7.40	10.65			
Run the Gauntlet	7.40	10.65			
Robocop	7.40	10.65			
R-Type	6.90	10.50			
Renegade III	7.40	10.65			
Red Heat	7.40	10.65			
Rick Dangerous	6.90	10.50			
Rock Star	7.40	10.65			

We cannot possibly list everything we stock here. So if it's not listed it doesn't mean we haven't got it!
NOTE: New releases sent on the day of release.

All our prices include P&P & VAT, in England, Scotland, Wales & N. Ireland. Eire & Europe add £1.20 per item. Rest of World add £3.00 per item.
NR= New Release-please for availability

Please make Cheques or Postal Orders payable to MODE ONE

ATTENTION AMSTRAD USERS

BBD Professional Dust Covers offer an exclusive range of stylish, top quality protective covers for your computing equipment

Manufactured from top quality washable nylon, BBD Dust Covers have stylish, contrasting piping on all seams.

- NON-FADE
- NON-SHRINK
- NON-CRACK
- MACHINE WASHABLE
- EASY IRON
- FLAME-RETARDANT FINISH
- ANTI-STATIC TREATED
- FULLY GUARANTEED

Covers for the Amstrad CPC 464 £8.00
Covers for the Amstrad CPC 6128 £8.00
Dark grey with red piping
(Please state monitor type)
(COST INCLUDES VAT AND P&P)

A wide range of printer covers is also available, at prices starting from **ONLY £5.00!** Money-back guarantee if not completely satisfied!

BBD DUST COVERS
Sheer Perfection in Computer Protection

DEPT 152,
The Standish Centre,
Cress Street,
Standish,
Wigan WNS 0HQ



TEL: 0257 425839 EXT. NO. 152 FAX: 0257 423909

Personal Callers and Dealers Enquiries Welcome

SCHOOL SOFTWARE LTD.

FREE Catalogue Amstrad CPC, PCW, PC1512, ATARI ST, Commodore, BBC, IBM PC, MSDOS.
Additional Dealers Wanted. 24 hour Visa/Access Hotline.
Ring UK 010353-6149477 (Office Hours) (Int. 061-45399).
Direct UK 010353-6145399 (24 hr)

PLAYSCHOOL (age 3-8). IBM PC.
Five of the best programs for the pre-school and young children.

THREE BEARS (age 5-10). Reading skills and imaginative thought.
"Any parent or teacher looking for an exciting and stimulating package for children should take a close look at this program." Computing with the Amstrad.
"As time goes on we can but hope for more and more of the same." Amstrad Action.
AMSTRAD CPC, IBM PC

MAXI-MATHS (age 9-15). Amstrad PC, IBM PC, Amstrad CPC.
1. Triangles. 2. Angles. 3. Sin Cos Tan. 4. Rectangles. 5. Circles.
Provides a very stimulating learning environment.
Also basic Algebra and full GCSE revision course.

MAGIC MATHS (age 4-8). CBM 64, IBM PC, Amstrad CPC, PCW, PC, ATARI ST
Addition and Subtraction. "A serious challenger to similar BBC programs and a good example of its type." PTM (UK).
5 Programs. Number of skills. Mathematical concepts, graphic games.

MATHS MANIA (age 8-12). CBM 64, IBM PC, Amstrad CPC, PCW, PC, ATARI ST
Multiplication and Division. "It appeals to the age group. My son has been sneaking downstairs before breakfast to play." BBC CEEFAX.
Six outstanding programs.

BETTER SPELLING (age 8-adult). All Amstrads, CBM 64, BBC, IBM PC.
"Well organised lessons." "A proper course with approaches to spelling problems with specific exercises." E&T (UK).

BETTER MATHS (age 12-16). All Amstrads, CMB 64, IBM PC.
Rated in the top five in an educational survey.
Four major computer tuition courses for GCSE.

CHEMISTRY (age 12-16). CBM 64, BBC, IBM PC, All Amstrads CPC, PCW, PC.
Very ambitious in terms of the range of topics. High standard of questions.
Specially prepared for the new GCSE examinations.

BIOLOGY (age 12-16). All Amstrads, CMB 64, BBC, IBM PC.
"A good excuse to play with your computer and have fun while revising." Your Computer.
Specially prepared for the new GCSE examinations.

MAPWORK QUIZ (9-adult). Amstrad CPC, CBM 64, BBC.
Excellent graphics and sound in this program covering most aspects of the Geography of Britain and Ireland. Great fun for all the family.



PHYSICS (age 12-16). CBM 64, Amstrad CPC, PCW & PC 1512, IBM.
"A colourful way of revising for GCSE/O-Level examination." Your Computer.
Specially prepared for the new GCSE examinations.

PHYSICS ELECTRONICS 2. For the advanced student.
Capacitors, electromagnetism, alternating current, digital electronics, microprocessors. IBM PC.

GEOGRAPHY (age 13-17). Amstrad CPC & CBM 64.
Comprehensive coverage of aspects of geography.

BUSINESS DYNAMICS. PC 1512, MSDOS, IBM PC.
Superb business simulation for student or adult. Be the boss, run a company and learn while you relax. £19.95.
"There's plenty of this kind of package to interest the learner for the price; it's excellent value for money." APC.

SCHOOL ADMINISTRATION SYSTEM. MSDOS Compatibles, Amstrad PC, IBM PC.
Maintain student records, exam results, issue school reports, print labels, DES.
Reports £149.00.

ORDER DIRECT TO: School Software Ltd., Tait Business Centre, Dominic St., Limerick, Ireland.
Tel: (UK) 010353-6145399 (UK) 010353-6149477.
Fax Orders (010-353-61-44315)

PC DISCS £22.95 (5.25", 3.5"). CASSETTES £10.95 (£1.00 P&P).
PCW & CPC DISCS £16.95 (£1.00 P&P). CATALOGUE AND PROGRAMS AVAILABLE FROM ALL GOOD DEALERS IN THE UK.

- Access/Mastercard/Eurocard/Barclaycard/Visa
 Cheque/PO made payable to Easibusiness Systems

APPLICATIONS ADVICE

He's got no hair, but we don't care. David Dorn dips into an overflowing mailbag to bring you the pick of the month's choicest CPC problems.

You may have seen in the letters in the September issue of your favourite CPC magazine that a diagram had gone missing from an answer to a query arising from an earlier edition. You might also have noticed Lance's heavy hint about reprinting the whole thing, just so you get all the facts. So, without further ado, here it is.

Howse that

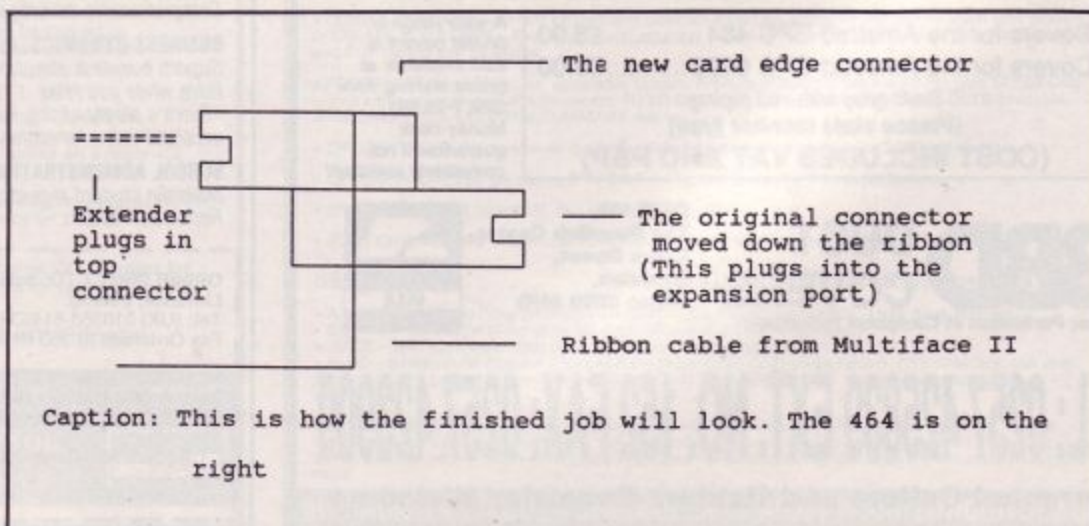
First letter out of the bag this month comes from David Howse, a 464 owner from Oxfordshire. He has a Multiface II and DD1 hanging from the back of his machine, and is looking to add even more to it. He asks about extending the leads, because he has run out of room to fit everything in.

Well, as a general rule, the disc drive interface should be as close to the port as is humanly possible, because otherwise it can be temperamental and refuse to work correctly. There is an added snag here as David has obviously chained the DD1 after the Multiface, because the interface has no through connector. He is going to have some difficulty attaching anything anywhere, except between the port and the drive, and this will make matters worse. A solution may be at hand, however, which will keep the disc interface snug into the back of the computer, and which will still allow for some more peripherals to share the port.



What is needed is another 50-day card-edge IDC connector (like the connector on the Multiface), and a card-edge connector to card-edge connector card. Take the multiface and unscrew the bottom plate. This should allow you to remove the

printed circuit board (PCB) and fold the ribbon cable back on itself, so that it comes out of the back of the box when the PCB is placed back inside it. Put back the bottom, just to prevent any damage to the PCB and its chips. (You might like to marvel at the



superb construction while you are at it.)

Okay, now for the tricky bit. You will need to remove the original card-edge connector, but remember which side of the ribbon the connector sits. Move it down the ribbon (towards the Multi-face) by 13mm (about half an inch) and re-install the ribbon. This takes some time and patience, and it is best done with a vice, so that the two halves of the connector can be squeezed onto the ribbon. The next part is easy, because you are going to do more or less the same with the new edge connector. This time, though, you must fit it on the other side of the ribbon cable. Because this is vitally important, I have drawn a diagram to show you exactly how the finished job will look (Fig 1.).

The two edge connectors should sit snugly together so that the bottom one supports the top one. Having done that, re-assemble the multiface as it was, making sure everything is secure. When you plug the original connector onto the port this time, the second will sit on top of it, and the extender will slot into it to give you a duplicate port. I would suggest that while the DD1 plugs in here, any other peripherals go on the multiface expansion connector. The card-edge connector and extender are available from Tandy or RS, and should not set you back more than a couple of pounds between them.

There you are - the first time I have seen a repeat in ACU. Still, if it is good enough for the BBC, it is good enough for us!

Hints taken

Now on to the up-to-date applications advice. I am pleased to say that a number of you have picked up the subtle hints I have been dropping over the last few issues, and have begun to send in hints of your own, as well as picking me up on little mistakes that creep in occasionally. I think that is great! I see *Applications Advice* as being more of a forum for sharing information and hints than somewhere for me to pontificate on matters technical . . . and that seems to be the way it is going to go.

First out of the bulging bag this month is W.C.T. Crosby, who writes; "I refer to your enquiry from Laszlo Czer, of Ashford, dealt with in the August issue, and for his assistance and that of other readers, I should like to point out that, although no mention is made in the *Mini Office II* instruction booklet, pressing >SHIFT< and

>:< in any of the menus will take one into External Command Mode, in which Amsdos external commands will function. These include :ERA and :REN. It is only necessary to press >ESC< to return to the menu, and to whatever is in the working memory under the MOII program. This makes the management of discs much simpler."

I am also indebted to John R. Hudson, who sent in the same information, but expanded on it somewhat. He tells me that no punctuation is needed and that by using this syntax in MOII, and that the buffer for passing parameters is very small. Thus, to erase a file called "LETTER.DOC" from the default drive, the >SHIFT< >:> command should be given, followed by "ERA letter.doc" (the quote marks are mine, and should *not* be typed in. Note the total lack of normal punctuation.

John goes on to say that the parameter buffer appears only to take sixteen characters including the command, which I can confirm. This means that, if you decide to do your disc housekeeping from within MOII, then you must keep filenames as short as possible. For instance, ":ERA article1.doc" will not work, although ":ERA B:let.doc" certainly will. If a filename is of a length such that housekeeping under MOII is not viable, then, as I said in the August issue, you'll

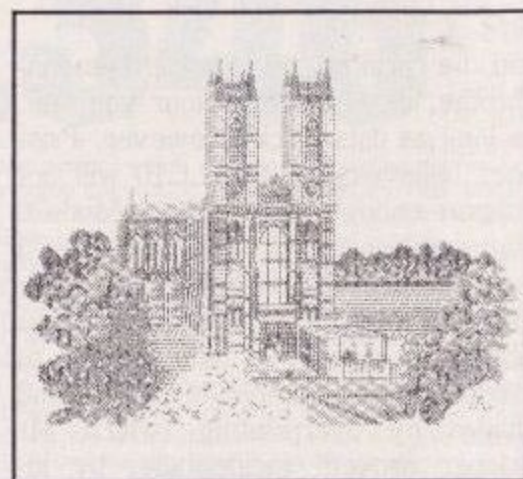
have to drop into Basic to do the work.

I do not understand why Database have never documented the >SHIFT< >:< command, unless it is because of the severely limited buffer. Anyway, I am greatly indebted to both of our correspondents for their timely help. Thank you, gentlemen!

A good dump

I am also grateful to L.M. Cooper (AKA Prisoner), of Grassendale in Liverpool, who spotted my reply to D. Heath in the August issue, regarding LC10 colour dump routines. He has sent a listing which will do a very nice dump of Mode 1 screens, and one or two of which, I hope, are reproduced alongside it (see Fig.2).

He considers a Mode 1 dump to be adequate, because a Mode 2 screen



```

10 CLEAR:DEFINT a-z
20 GOSUB 360
30 MODE 1:INPUT "SCREEN: ";a$:LOAD a$,60000
40 DIM pixel(650,10)
50 WIDTH 255
60 FOR y=399 TO 0 STEP -1
70 FOR x=0 TO 639 STEP 2
80 a=TEST(x,y)
90 pixel(x,a)=1
100 NEXT
110 PRINT$;CHR$(27)CHR$(65)CHR$(0);
120 IF 10=999 THEN 170
130 PRINT$;CHR$(27)CHR$(114)CHR$(10);
140 PRINT$;CHR$(27)CHR$(75)CHR$(64)CHR$(1);
150 FOR x=0 TO 639 STEP 2:IF pixel(x,0)<>0 THEN PRINT$;CHR$(64); ELSE PRINT$;CHR$(0);
160 pixel(x,0)=0:NEXT:PRINT$
170 IF 11=999 THEN 220
180 PRINT$;CHR$(27)CHR$(114)CHR$(11);
190 PRINT$;CHR$(27)CHR$(75)CHR$(64)CHR$(1);
200 FOR x=0 TO 639 STEP 2:IF pixel(x,1)<>0 THEN PRINT$;CHR$(64); ELSE PRINT$;CHR$(0);
210 pixel(x,1)=0:NEXT:PRINT$
220 IF 12=999 THEN 270
230 PRINT$;CHR$(27)CHR$(114)CHR$(12);
240 PRINT$;CHR$(27)CHR$(75)CHR$(64)CHR$(1);
250 FOR x=0 TO 639 STEP 2:IF pixel(x,2)<>0 THEN PRINT$;CHR$(64); ELSE PRINT$;CHR$(0);
260 pixel(x,2)=0:NEXT:PRINT$
270 IF 13=999 THEN 320
280 PRINT$;CHR$(27)CHR$(114)CHR$(13);
290 PRINT$;CHR$(27)CHR$(75)CHR$(64)CHR$(1);
300 FOR x=0 TO 639 STEP 2:IF pixel(x,3)<>0 THEN PRINT$;CHR$(64); ELSE PRINT$;CHR$(0);
310 pixel(x,3)=0:NEXT:PRINT$
320 PRINT$;CHR$(27)CHR$(51)CHR$(2);
330 PRINT$
340 NEXT
350 END
360 MODE 2:zz$="0-Black 1-Red 2-Blue 3-Violet 4-Yellow 5-Orange 6-Green 999-White"
370 PRINT"ink 0: ";zz$
380 INPUT i0
390 PRINT"ink 1: ";zz$
400 INPUT i1
410 PRINT"ink 2: ";zz$
420 INPUT i2
430 PRINT"ink 3: ";zz$
440 INPUT i3
450 RETURN

```



can be printed as standard monochrome, in whatever colour you like, as long as it is black! However, Prisoner believes that the LC10 will not support enough colours for a Mode 0 dump, unless only pens 0-3 are used. I must argue with him here, for the following reasons. The LC10's colour ribbon is capable of being used to produce a vast number of colours and shades by overprinting (which Mr Cooper proved, incidentally, by including some orange, green, and violet text in his letter). Now, given a suitable algorithm, all the colours that the CPC can produce in Mode 0 could be reproduced on paper with an LC10 colour printer.

If an LC10 can cope with a sixteen-colour dump from an ST, it will certainly cope with Mode 0 on an Arnold. The basics of such a dump are in the listing that Mr Cooper has sent but, without having the LC10 manual to hand from which to ascertain the necessary escape codes (and being colour blind anyway, which doesn't

help), I cannot give you any amendments to the original. However, I am sure that there are a few of you who are perfectly capable of working out the necessary code, and who would appreciate the challenge.

If you do manage it, please send it in to me, and I will print the listing for the benefit of the rest of the readers. At the same time, Mr Cooper might well be working on the Machine Code version of the Mode 1 dump, which he

says he will pass on for your delectation as soon as he has it working.

I hope that all of the above, and the listing, will be of assistance to Mr M.A. White, who wrote to tell me that he has been having difficulty in getting colour dumps from the OCP Advanced Art Studio package, and who asked about suitable drivers and patches for the original code. Mr Cooper's listing is about the best I can offer at the moment; patching the OCP code would mean breaking the protection on the program, and the law is at present unclear about the desirability of doing this. And anyway, that is more in Vax's line than mine.

Satisfied

Peter Halliwell-Redvers is a 6128 owner who has, together with his son, had a great deal of satisfaction from his computer. Obtaining so much joy from Arnold, he went on a programming starter course at his local college in Blackpool, where he was taught on – yes you have guessed – a BBC B! Thus far, he has been reasonably successful in translating his knowledge from the Beeb on Basic he has been taught into the Amsdos Basic equivalent, but he has now hit a rather embarrassing snag – embarrassing for Arnold, that is.

The Beeb, you see, can handle random access disc-filing with its hands tied behind its back, and Mr Halliwell-Redvers is anxious to be able to emulate this on his CPC. 'I can write

a program for a sequential file which I can LOAD, add to, and reSAVE,' he says, 'but what I want to do is write programs using RANDOM ACCESS FILES.' (his capitals!) He says he even knows how to write such programs, but does not know how to get them on and off disc.

The simple answer is that Amsdos has no facility for random access disc filing, so a straight translation is out of the question. Only two ways around the problem spring immediately to mind, both of which involve spending some money.

The first involves the purchase of a ROM box, and the RODOS ROM, which has effective random access filing routines in it. There are, of

course, all kinds of other goodies contained in the chip as well, most of which really need a second (and bigger) disc drive. The documentation which accompanies RODOS leaves a little to be desired (or did when I reviewed it in *CPC Computing* many months ago). Teamed up with RODOS EXTRA, however, it is very effective indeed, and comes with ready made routines to incorporate into your code.

The second solution may not be one – and I have not been able to check this out, because I am writing this right in the middle of the holiday season. I seem to recall Minerva Systems marketing a database which boasted random access, and which incorporated some proprietary code to allow RA filing. I believe that subsequently they put the routines on the market in a separate package. My problem here is that I do not know whether this package is still on the market; in fact, I doubt that it is.

Amsdos will allow sequential file access, using WRITE, INPUT and LINE INPUT, but, as Mr Halliwell-Redvers has said, he can already do that. I am sorry I cannot be of any more help than this, but perhaps YOU can help. If so, you know our address.

That about rounds it off for this month; space has caught up with us again. If you have any queries, or can offer any help with queries you have seen printed here, do not hesitate to put finger to word processor, and tell the world about it. Even if we have answered a point, you may know another way round it, or a better or a more elegant solution. If so, we want to hear from you. See you next month!

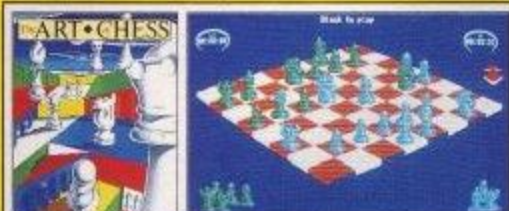
FREE! TENSTAR PACK WORTH OVER £229!



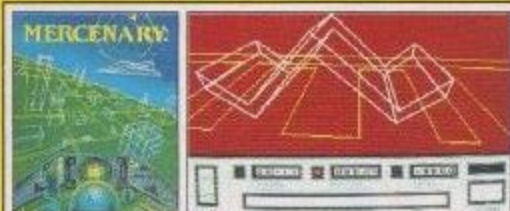
FREE! - AMEGAS - by Players



FREE! - INSANITY FIGHT - by Microdeal



FREE! - ART OF CHESS - by SPA



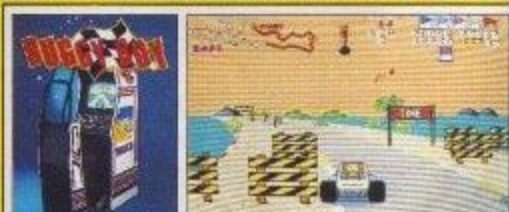
FREE! - MERCENARY COMP - by Novagen



FREE! - BARBARIAN, ULT WARRIOR - by Palace



FREE! - TERRORPODS - by Psygnosis



FREE! - BUGGY BOY - by Elite



FREE! - THUNDERCATS - by Elite



FREE! - IKARI WARRIORS - by Elite



FREE! - WIZBALL - by Ocean

Commodore AMIGA



ONLY £3.³⁴ PER WEEK
RETURN COUPON FOR DETAILS

£346.⁹⁵ +VAT = £399

INCLUDES FREE UK DELIVERY

The Amiga 500 is one of a new breed of technologically advanced computers, which are now emerging as the new standard for home computing, based around the new Motorola 68000 chip. The A500 has 512K RAM and a 1Mbyte double sided disk drive built-in. It can be connected directly to a wide range of monitors, or to a domestic TV set through a TV modulator. Designed with the user in mind, the A500 features a user friendly WIMP environment and comes supplied with a free mouse. And, when you buy your Amiga from Silica Shop, the UK's No1 Amiga specialists, you will experience an after sales service that is second to none, including a technical support helpline and free newsletters and price lists. Return the coupon below for our current information pack, which will give details of the Silica service and the very latest Silica Amiga offers. E&OE

WHY SILICA SHOP?

Before you decide when to buy your new Commodore Amiga computer, we suggest you consider very carefully WHERE you buy it. There are MANY companies who can offer you a computer, a few peripherals and the top ten selling titles. There are FEWER companies who can offer a wide range of products for your computer as well as expert advice and help when you need it. There is ONLY ONE company who can provide the largest range of Amiga related products in the UK, a full time Amiga specialist technical helpline and in-depth after sales support, including free newsletters and brochures delivered to your door for as long as you require after you purchase your computer. That one company is Silica Shop. We have been established in the home computer field for ten years and can now claim to meet our customers' requirements with an accuracy and understanding which is second to none. Here are just some of the things we can offer you.

THE FULL STOCK RANGE: The largest range of Amiga related peripherals, accessories, books and software in the UK.

AFTER SALES SUPPORT: The staff at Silica Shop are dedicated to help you to get the best from your Amiga.

FREE NEWSLETTERS: Mailed direct to your home as soon as we print them, featuring offers and latest releases.

FREE OVERNIGHT DELIVERY: On all hardware orders shipped to Silica Shop customers within the UK mainland.

PRICE MATCH PROMISE: We will normally match our competitors offers on a 'same product same price' basis.

FREE TECHNICAL HELPLINE: Full time team of Amiga technical experts to help you with your technical queries.

But don't just take our word for it. Complete and return the coupon below for our latest Amiga literature and begin to experience the Silica Shop specialist Amiga service.

PHOTON PAINT PACK

A500 Computer	£399.99
TV Modulator	£24.99
Photon Paint	£69.95
TenStar Pack	£229.50
TOTAL RRP:	£724.43
LESS DISCOUNT:	£325.43
PACK PRICE INC VAT:	£399

1084S MONITOR PACK

A500 Computer	£399.99
1084S Colour Monitor	£299.99
Photon Paint	£69.95
TenStar Pack	£229.50
TOTAL RRP:	£999.43
LESS DISCOUNT:	£350.43
PACK PRICE INC VAT:	£649

FREE FROM SILICA

When you buy the Amiga 500 from Silica Shop, you will not only get a high power, value for money computer, we will also give you some spectacular free gifts. First of all, we are now including a TV modulator with every A500 stand alone keyboard, so you can plug your Amiga straight into your TV at home (the modulator is not included with the A500+A1084S pack as it is not required for use with monitors). Secondly, we have added a free copy of Photon Paint, an advanced graphics package with an RRP of £69.95. Last (and by no means least!), so that you can be up and running straight away, we are giving away the sensational TENSTAR GAMES PACK with every A500 purchased at Silica Shop. This pack features ten top Amiga titles which have a combined RRP of nearly £230! Return the coupon for details.

FREE TENSTAR PACK

Amegas	£14.95
Art Of Chess	£24.95
Barbarian, Ult Warrior	£19.95
Buggy Boy	£24.95
Ikari Warriors	£24.95
Insanity Fight	£24.95
Mercenary Comp	£19.95
Terrorpods	£24.95
Thundercats	£24.95
Wizball	£24.95
TOTAL RRP:	£229.50

DO YOU OWN AN AMIGA?

If you already own an Amiga computer and would like to be registered on our mailing list as an Amiga user, let us know. We will be pleased to send you copies of our price lists and newsletters FREE OF CHARGE as they become available. Complete the coupon and return it to our Sidcup branch and begin experiencing a specialist Amiga service that is second to none.

SILICA SHOP:

SIDCUP (& Mail Order)	01-309 1111
1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX	
OPEN: MON-SAT 9am - 5.30pm LATE NIGHT: FRIDAY 9am - 7pm	
LONDON	01-580 4000
52 Tottenham Court Road, London, W1P 0BA	
OPEN: MON-SAT 9.30am - 6.00pm LATE NIGHT: NONE	
LONDON	01-629 1234 ext 3914
Selfridges (1st floor), Oxford Street, London, W1A 1AB	
OPEN: MON-SAT 9am - 6.00pm LATE NIGHT: THURSDAY 9am - 8pm	

To: Silica Shop Ltd, Dept AMSACU 1189, 1-4 The Mews, Hatherley Road, Sidcup, Kent DA1 4DX

PLEASE SEND ME FREE LITERATURE ON THE AMIGA

Mr/Mrs/Ms: Initials: Surname:

Address:

Postcode:

Do you already own a computer
If so, which one do you own?

Read all about it

You are better read than dead with our guide to the best Amstrad CPC books.

Title: Amstrad Graphics – The Advanced User Guide
 Author: Robert Ransom
 Publisher: Sigma Press
 Softback: 229pp
 Price: £7.95

Amstrad Graphics – The Advanced User Guide is for use with the CPC 464, 664 and 6128 machines. Although the title suggests otherwise, the book is intended for novice programmers as well as the more experienced. The reader must already have mastered Basic to the point where he understands the commands well enough to have written a few programs of his own. This is the only prior knowledge needed. The book instructs the reader right from the simplest stages of using graphics, so he need not have experimented in this field before.

Throughout the book, the emphasis is on graphics in use in the real world – in the fields of computer-aided design and simulation graphics, for instance. The book's usefulness is therefore enhanced a great deal simply because it introduces the reader to subjects of worth, rather than concentrating solely on the fun element.

The author instructs the reader in the basic groundwork in a number of well-constructed chapters. All the topics covered in these chapters are illustrated by complete program listings and many accompanying diagrams. For those readers who are interested in pursuing this part of the learning process further, the author gives details of how he obtained these illustrations in the Preface.

For those readers who wish to move beyond the simple techniques detailed in these chapters, the rest of the book should prove fascinating. Learn-

ing how to use 3-D for instance, should keep enthusiasts happy for many an hour. The author has already done much of the hard work by providing some excellent program listings. All the reader has to do is enjoy himself.

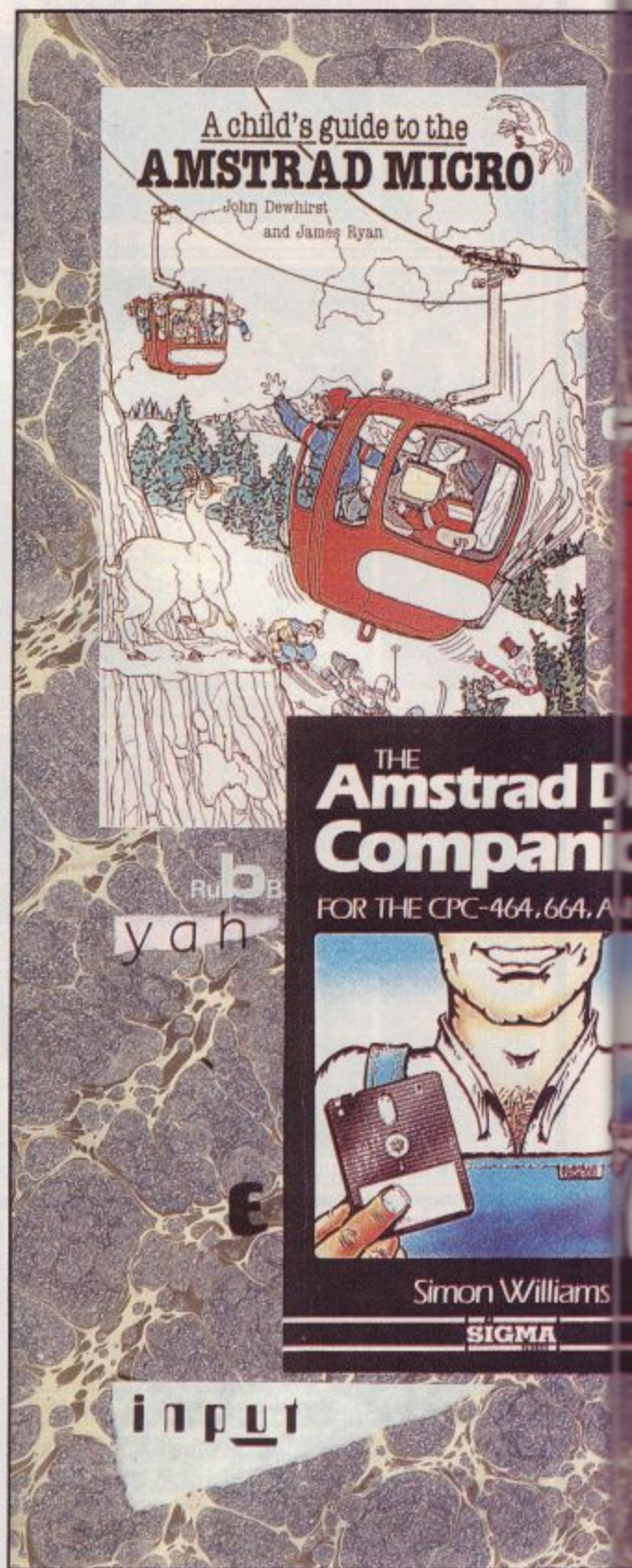
Title: A Child's Guide to the Amstrad Micro
 Author: John Dewhurst & James Ryan
 Publisher: Cambridge University Press
 Softback: 96pp
 Price: £4.95

This delightful starter book should come as welcome relief to harassed parents everywhere, those parents who succumbed and bought their child a computer, only to find out that they had no idea what to do with it. When that child is only ten years old and is more interested in what comes out of a cereal packet than what is hidden in a computer manual, trouble lies ahead. This book should do the trick, however.

The text is divided into five sections. Each of these sections is introduced by a character who is in complete charge of the subject covered by the section. The reader meets Prudence Comet first. Ms Comet is a typist. In her section, she shows the reader how the keyboard works and how to use it. All five sections are written in large print for little fingers to follow. Instructions start at the most basic level, and follow through to more complex procedures.

All key presses are boxed and in capital letters so the reader will not get confused. Things to try and things to remember are always in separate spaces and always start on the left-hand side of the page. The character in charge of the section is often either standing next to or pointing at these instructions. The right-hand side of the page belongs solely to large television screens which show exactly what the reader should see if he has done everything correctly. There are also lots of funny drawings to make life more interesting.

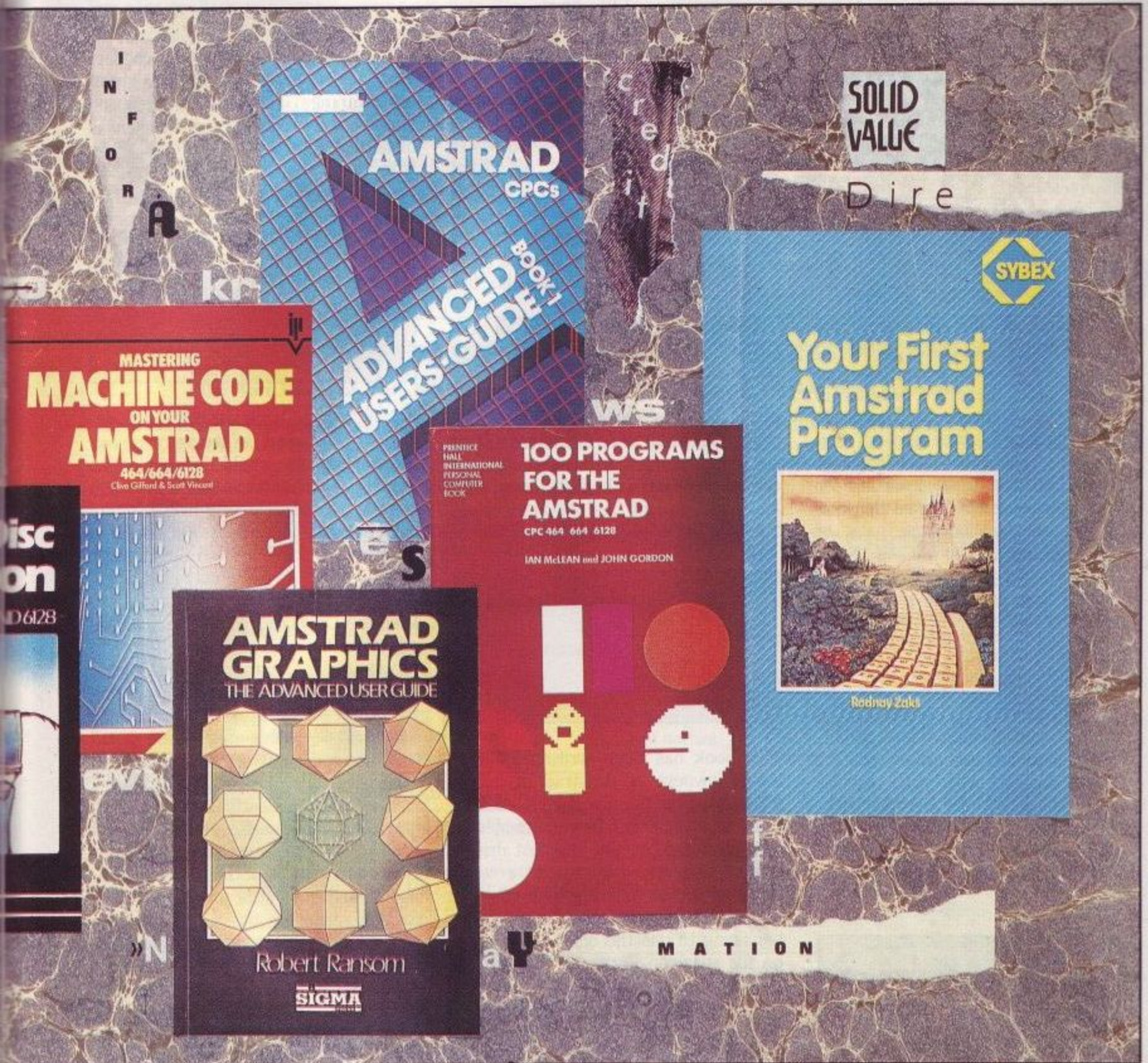
By the time the child gets to the programming section where Professor Oliver Crumpet is in charge, his long-suffering parents will know whether or not he or she is still interested. This book does everything it can to promote careful, methodical use of the knowledge it conveys, whilst revealing this exciting new



world, if the child fails to show any enthusiasm after reading and using this book, then he is probably never going to show any.

Title: Mastering Machine Code on your Amstrad 464/664/6128
 Author: Clive Gifford & Scott Vincent
 Publisher: Interface Publications
 Softback: 263pp
 Price: £8.95

Clive Gifford already has at least 20 books in print and Scott Vincent, also an author, has had several machine-code games published, as well as being



an experienced programmer. Together, their knowledge and expertise have produced this well thought-out book. Considering the subject matter, the authors have managed to keep the complicated terms and jargon to a minimum. The text is remarkably clear and precise; indeed those readers who have come into contact with the subject before may find the style too simplistic. Novices will wonder why they ever thought machine code too difficult to master.

This is the perfect sort of book for those who intend to get the best from machine code. Much of the work has already been done by the authors. Although the book is designed to be read in logical order, the style of

presentation is such that the reader can flick through to any bits which attract his attention. Once he has understood the basic instructions given in the first few tutorial-style chapters, he should feel at ease to do this. If he comes across anything unfamiliar, he can always look back or refer to the dictionary of machine-code terms.

The main part of the book is taken up by fourteen pre-packaged routines ready and waiting for readers to try out. All the work has already been done; complete novices could use these routines without even reading the relevant section or knowing what they mean. The whole book is just as friendly and easy to use. The authors

have a personal style which is attractive and stimulating to read.

Title: 100 Programs for the Amstrad 464, 664, 6128
 Author: Ian McLean & John Gordon
 Publisher: Prentice Hall
 Softback: 228pp
 Price: £8.95

The authors started planning this book by thinking about what Amstrad micros are used for. Not surprisingly, they came up with a wide range of uses. These they divided into eight separate sections, and thus they present topics covering such diverse

interests as programs for the science lab, programs for business and, of course, games programs. This book is therefore accessible to readers from many walks of life. Perhaps a small businessman wishes to create a mailing list, or a housewife wishes to computerise her monthly accounts.

Younger readers will find the book helpful in several respects; there is the fun element with games programs and then programs for turning the Amstrad micro into a music machine. There is also a serious side to the book: many of the programs are school-related. If the reader wishes to work out the value of a resistor from its colour code, there is a program in this book which can do it. There are also a myriad of other physics and maths programs and some language tutorials. Perhaps most important for the younger reader is the fact that this book can get him into the habit of using programs to help himself. None of the programs listed are perfect or definitive; they can all be modified to do what the reader wishes. He will not lose anything by trying – the programs are stored ready for him if something should go wrong.

For those boring hours when homework and business is finished, there is an interesting recreation section, dealing with such exotic subjects as Biorhythms and the Magic Matrix. Whatever use the reader puts his Amstrad to, there is a program in this book which could prove invaluable.

Title: Amstrad Advanced Users
Guide Book 1
Author: Daniel Martin
Publisher: Glentop Publishers Ltd
Softback: 162pp
Price: £8.50

Daniel Martin is a systems engineer with the French firm Inter-technique who specialise in manufacturing micros based on the PICK system. Originally written in French, Glentop has brought the book to the British market for the benefit of Amstrad CPC users on this side of the Channel. The book will not be of interest to everyone, however. This is definitely a technical book. It is for those readers who wish to know about the structure of their machines; their components and the details of how they work.

Most of the book is taken up with details about internal workings of the Amstrad CPCs, both from a chip/

circuit and internal software point of view. Readers wishing to learn how to program in Basic or looking for an easy introduction to machine code will not find it here. This book is for users who already know how to program in Basic and want to get down to the nitty-gritty and find out what really makes their computer tick. This type of book is guaranteed to turn most users weak at the knees, but for every nine that do, there is sure to be one who will find just what he has been looking for.

Despite the complexities of the subject matter covered, the layout of the book is simple and easy to follow. The whole text is divided into a series of lists and tables, with conventional pages occurring here and there. Even so, to get the most from this book, the reader will have to know exactly what he wants already and he must have the prior knowledge to help him use it.

Title: The Amstrad Disc Companion
Author: Simon Williams
Publisher: Sigma Press
Softback: 206pp
Price: £7.95

This book has been written for fortunate owners of Amstrad machines which have built-in disc drives, as well as owners of CPC 464s who are able to take advantage of the low-cost drives available. The book covers a wide range of topics, starting with connecting the micro to the drive and/or beginning to use the discs, depending on the machine involved. The author discusses both available operating systems, AMSDOS and CP/M; he pays particular attention to Amstrad-specific commands and any differences among the CPC micros.

Many books would stop here, but *The Amstrad Disc Companion* has two further sections. The first is aimed at programmers who wish to turn away from Basic and Z80 Assembly language to something new. The author briefly looks at Logo, Pascal and C. These pages are only meant to be quick introductions, giving the reader some idea of what each language can do for him; nevertheless, he will find them very interesting. Simon Williams is good at explaining himself and even readers with little knowledge of high-level languages will be able to understand what he is saying.

The last section of the book is taken up with details about business software and file handling, with emphasis

on three commercially available software packages. Taken together, all this information should show readers how to use their micros to their greatest advantage. The layout of the glossary and index is good; they will help to make this a good reference guide long after the reader has digested most of the information in it.

Title: Your First Amstrad Program
Author: Rodney Zaks
Publisher: Sybex Inc
Softback: 208pp
Price: £6.95

Although this book is primarily designed to be used by the very young, almost anyone could benefit from reading it. The language is not too simple or condescending to bar adults from having a go at their first Amstrad program. Readers are led through the book by a series of friendly characters – the Program Snake, for example and Dino the Dinosaur, who lacks a formal education but who still learned how to program. The author states in the preface that readers should be writing their first Basic program within one hour; although this may seem a tall order, readers will soon discover otherwise.

The text is clearly laid out, with good use being made of a variety of type-styles to emphasise various types of instruction. There is a continuous stream of little program listings for the reader to try out. These are immediately followed in the text by orange boxes demonstrating what the reader should then see on the screen in front of him. Scattered throughout the text are large, often humorous drawings which depict an important fact the reader should remember. For example, when inputting data, the reader is instructed to keep it simple and not climb aboard a tottering pile of furniture, as Dino is doing, just to swat a fly.

At the end of every chapter, Dino summarises what the reader should have learned and then comes the test – a set of exercises to prove that all that information did go in. There is a list of selected answers at the back of the book for those who may need a little help! The exercises are not intended to fluster the reader; the book is fun and easy-going. It will only provide a grounding in essential Basic programming techniques, but that should be enough to start readers on their way to bigger things.

ASTROLOGY for beginners

Teach yourself astrology using your Amstrad

Buy a Starter Pack comprising a simple program to calculate a horoscope, an introductory booklet and 2 self-teaching programs (how to interpret the horoscope).

ONLY £12.50 No previous knowledge required
For ALL Amstrads (CPC, PCW, PC, PPC)

Payment by Access/Visa, Cheque, P.O. Please state make of computer or send s.a.e. (about 9"x7") for free catalogue giving details of our wide range of programs for **PROFESSIONAL ASTROLOGERS** including complete natal interpretations and forecasting.

Also I CHING, GRAPHOLOGY, BIORHYTHMS, etc.

ASTROCALC

(Dept ACU) 67 Peascroft Road, Hemel Hempstead,
Herts HP3 8ER England. Tel: 0442 51809

STRATEGY SOFTWARE

Strategy games for the Amstrad CPC

THE FINAL CONFLICT - the game is a conflict between Nato and the Warsaw Pact in Europe. Options are either two player or solitaire against the computer. 25 different countries involved, over 160 units, infantry, corps, parachute, armoured, cities helicopters, different strengths, effects, supplies, fuel, casualties status, different seasons, city production levels, millions of troops involved, game lasts for weeks, save game, 18 page manual plus more.

SOCCER 6128 - football strategy game which lets you manage any team in the 4 divisions. Options are buy players, sell players, league programme, fixtures, opposition, play match, instructions, league table, accounts, playing staff, save game, 10 different positions, skill, form, goal scorers, injuries, up to 20 players in squad, sackings, over 2000 players, 80 English clubs, 60 European clubs, FA Cup, League Cup, European Cup, UEFA Cup, Cup Winners Cup plus much more. Reviewed in AMSTRAD ACTION July '88.

KURSK the clash of armour - was the biggest tank battle of WW2 in which the Germans had to beat the Soviet army to stand any chance of winning the war. The options are two player or solitaire against the computer. There are over 125 units which are infantry, armoured, corps, artillery, anti-tank plus cities which all have different effects in combat. There are also supplies like troops, provisions and fuel. The object of the game is to capture the key cities or destroy enemy units. Also save game plus much more.

SOFTWARE HIRE CLUB - we hire out top game titles of strategy and simulation games for the Amstrad CPC. Send a large S.A.E for details.

Please state
machine type

Title	disk	tape
THE FINAL CONFLICT	£8.00	£7.00
SOCCER 6128 For 6128 only	£8.00	
KURSK the clash of armour	£8.00	£7.00

Disks not available
for 464 diskdrive

Cheques or Postal orders Payable to STRATEGY SOFTWARE

Send to STRATEGY SOFTWARE, 32 Albert Street, Seaham, Co Durham SR7 7LJ

TASWORD 6128

The Word Processor - with Mail Merge

The established, powerful word processor for the Amstrad CPC 6128. TASWORD 6128 has been specially developed to use 64K of memory as text space. This means a text file can be a massive 60,000 characters long, enough room for over 10,000 words! Featuring all standard and many extra word processing facilities TASWORD 6128 includes sophisticated print options, on-screen help, notepads and a built-in data merge facility. Extensive customisation options allow many facilities to be changed to your requirements and then saved into the program. Combining power with ease of use, TASWORD 6128 is the complete word processor for the CPC 6128.

TASWORD 6128 Disc £29.95



PERFECTION IN PROFESSIONAL SOFTWARE

Springfield House, Hyde Terrace, Leeds LS2 9LN Tel (0532) 438301

If you do not want to cut this magazine, simply write out your order and post to:

TASMAN SOFTWARE LTD, DEPT ACU, SPRINGFIELD HOUSE, HYDE TERRACE, LEEDS LS2 9LN

I enclose a cheque/PO made payable to Tasman Software Ltd OR		ACU
charge my ACCESS/VISA number: _____		Card expiry date: _____
NAME _____	ITEM _____	PRICE £ _____
ADDRESS _____	_____	£ _____
_____	_____	£ _____
Telephone Access/Visa orders: Leeds (0532) 438301		Outside Europe add £2 per item airmail TOTAL £ _____
Please send me a FREE Tasman brochure describing your products for the IBM/Amstrad PC <input type="checkbox"/> Amstrad PCW <input type="checkbox"/> Amstrad CPC <input type="checkbox"/>		

All prices include VAT and post and packing

TASWORD 464

The Word Processor

Your 464 becomes a professional standard word processor with TASWORD 464. Supplied complete with a comprehensive manual and a cassette which contains the TASWORD 464 TUTOR to teach you word processing using TASWORD 464.

TASWORD 464 cassette £24.95

TAS-SIGN

The Sign Maker for the CPC 6128 and PCW

Produce and print your own signs, banners and large notices to get your message across with maximum impact. A complete sign making package including four distinctive lettering styles and character heights from one inch to the full width of the paper. Signs may be printed across the paper or along the length of the paper to produce large eye-catching banners and notices.

TAS-SIGN (dot matrix printers only) disc £29.95

Use the clip coupon below and send for our FREE brochure describing these and other products for the CPC range.

JACKSON COMPUTERS LIMITED

JOIN OUR DISCOUNT CLUB!

Life membership for £8.50

Software/Hardware Discounts of 5-20% off RRP.
All AMSTRAD and other leading makes of software available.
Complete computer system, printers, modems, cables.

Amstrad CPC464 with colour monitor	£287.50
Amstrad CPC6128 with colour monitor	£389.90
PCW8256/512	£388.70/£504.85
Amstrad PCW 9512	£552.00
Amstrad PC 1640 ECD	Ring for details

PPC portable computers in stock and also PC2000 range. Ring for details.

All prices include VAT.

Also free Life Membership when you purchase any CPC or PCW AMSTRAD computer. Tel: Between 9am-5pm 01-655 1610

Send for full price list and membership form to:

25 Spring Lane, Woodside, South Norwood
London SE25 4SP



ONLY POOLS AND HORSES

FOOTBALL BOXFORM £14.95 (+ £2 for 3" disc)

* The **ONLY** pools program written by a **GENUINE EXPERT** who has been professionally employed as such by the leading pools company. **He KNOWS how to help you win.**

* The **ONLY** program dealing with football form that has its team merit ratings published in a national sporting magazine.

* The **ONLY** program to claim **50% MORE DRAWS** than obtained by chance. FOOTBALL BOXFORM is not a gimmicky play thing but a serious statistical analysis of football form. Its sole objective is to improve the chances of winning on the pools or fixed odds and no other program comes near to tackling the problem so thoroughly. Homes aways and draws are shown in order of merit and true odds given for every match. Merit tables show at a glance the teams currently in form and those having a lean spell. Covers league and non-league clubs

BOXFORM & HANDICAP WINNER
£14.95 (+ £2 for 3" disc)

Two programs for the price of one. Easy to use and they never go out of date. All you need is a few minutes with a daily paper. **BOXFORM** weighs up a race by considering the many facets of form. Easily amended to suit the user's ideas. **HANDICAP WINNER** shows the value for money bets. Hundreds of winners in handicaps this year at 25/1, 20/1, 16/1, 15/1 ... etc, etc.

SPECIAL PRICE of £24.95 (+ £2 for 3" disc)

for all of the above programs

Why pay inflated prices? **BOXoft CLEVER** and get the **BEST**

Available on tape or disc for SPECTRUM, CMD C64/128, AMS CPC's, BBC B. from:



BOXoft (ACU), 65 Allans Meadow,
Neston, South Wirral. L64 9SQ



Credit card holders may phone 051-336-2668 (24 hrs)

AMSTRAD

USER CLUB

It pays to belong!



INTRODUCING Our brand new super service for readers

Amstrad Computer User and the Official Amstrad User Club have combined our unrivalled knowledge of your computer to provide a unique support service designed to meet exactly your needs.

Look out each month for our superb selection of invaluable offers at some of the best value prices around as well as really special deal for Amstrad User Club Members.

DDI-1 and FD-1 Disc Drives

Soup up your CPC system with a disc drive

Fed up with waiting for those tapes to load? Then take advantage of ACU's Special Offer of the Amstrad DDI-1 disc drive and you will be loading software in seconds. PLUS you will have a whole new selection of software available to you as the DDI-1 is supplied complete with CP/M 2.2 and DR Logo. Your CPC will then be fully equipped to take a more serious turn.

Normally £159.95. Special ACU Price £149.95. MEMBERS £139.95. Order Code DDI-1. FD-1 Second Disc Drive can be added to the CPC464 with a DDI-1 or to the CPC6128 to double the data storage capacity and simplify file copying and back-up routines. Normally £99.95 Special ACU Price £94.95 MEMBERS £89.95. Order Code FD-1



MP-2 Colour TV Modulator

Let a little colour into your life with the Amstrad MP-2 TV Modulator. A splash of colour can make a world of difference to your favourite games. With the MP-2 you can enjoy the clarity of your GT monitor for serious work and then link up to your colour TV for a touch of colour.

Normally £29.95 Special ACU Price £27.95

MEMBERS £25.45. Order Code MP-2.



MP-3 TV Tuner

For the best in home entertainment the Amstrad MP-3 transforms your colour monitor into a colour TV. It sits neatly under the CPC colour monitor for you to receive all of your favourite TV programmes.

Normally £49.99 Special ACU Price £48.49

MEMBERS £46.99. Order Code MP3.



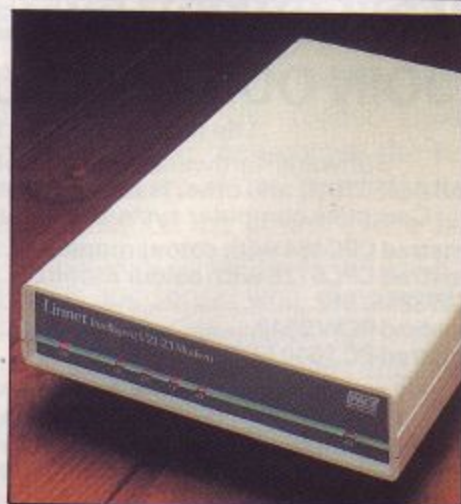
Linnet Modem

Linnet is one of the most advanced modems available, it is designed to meet the needs of the home, the education and the business user.

Linnet provides V21/V23 operation at 1200/1200 or 1200/75 bps. It will auto dial and auto answer, is fully Hayes compatible and uses extended "AT" set. It will monitor calls audibly and on screen and has battery back up and a 32 number store facility. The built-in help menus make Linnet simple to use so that everyone can benefit from the extensive range of features.

Normal Price £174.80. Special ACU Price £158.58.

MEMBERS £148.58. Order Code PACE3



Have modem, will travel

Gordon Bates writes
the first of a spanking
new guide to the
world of computer
communications

Mention 'comms' to many CPC owners, and they will shy away from you, muttering under their breath about massive 'phone bills and strange black boxes that are practically impossible to understand. And this is all very understandable. A great many of the articles that you see written about comms do little to dispel the myth about modem use being an arcane art, suitable for only the advanced computer owner.

Nothing could be further from the truth, and to prove it, we are going to take a journey into the world of on-line databases, modems, 'phone lines and buzzwords. BUT, and it is a big but, we are going to start at the beginning, so that nobody gets lost on the way. I have laid down a few rules for myself, the most important one being that if I need to write something that is even remotely like jargon, I will put an explanation in a separate 'jargon box'. Again, this is to keep everybody on track. But do not worry, it is not as difficult as some would-be hackers would have you believe.

So, what is comms? To give it its full title, comms is 'computer communications', in this case, one computer to another, over telephone lines. In its simplest form, this means attaching a

modem. There are basically two types of modem, which we will call intelligent and dumb. An intelligent modem usually conforms to what is known as the Hayes standard – named after the firm that invented it. Again, this need not concern us too much at this stage; suffice to say that a Hayes standard modem is likely to give you many



black box to the computer – called a modem – so that it can use the 'phone lines to talk to another similarly equipped computer. The other computer does not even have to be of the same make, much less the same kind, so it is quite possible for your CPC to talk to a mainframe, and even use it; and it is quite simple to implement this.

What the modem actually does in order to allow all this to happen is not really important at this stage; we will go into that at a later date. What is important, though, is to know what bits you need to be able to use one.

Firstly, you will need a serial interface. The CPC does not have one as standard, so you will need to buy one. Pace manufacture one, as do Amstrad themselves, and so do Spectre Communications and KDS (addresses at the end). The interface plugs into the expansion port at the back of your machine, and has an RS232c socket on it. An RS232c socket is usually configured as a 25-pin D-Sub male, while the similar socket on the modem is normally a 25-pin female equivalent. One of these interfaces will cost around £40. Like most add-ons for our machines, however, you will find them discounted in mail-order suppliers' advertisements. As this is just an introductory article, I will not make any recommendations as to which you should buy; I will look at each one in future columns.

The next thing on the list is the

more facilities than a dumb modem, and is also easier to drive. Unfortunately, the intelligent modem is likely to be a bit more expensive than the dumb modem. The dumb modem nearly always requires you to use a telephone connected to a socket on the modem itself to dial the number of the computer you want to talk to. (I should also mention that you will need a telephone socket in your computer room somewhere, if you have not got one already). When the other computer answers – in high-pitched whistles and chirps – you then have to do all the connection work yourself. An intelligent modem, on the other hand, does all of this for you, given the right software.

And the only other thing you need, really, is some comms software. The fanatics of CPC comms (and I suppose I'm one of them) will tell you that there are only two programs you need or should consider. One is the *Cage Comms ROM*, and the other is the *Public Domain program MEX*, which runs under CP/M.

The Cage ROM was developed by Ian Hoare my one-time co-editor of the *Amster's Cage* – hence its title – and his partner Dave Gorski, who has written countless comms programs for a number of machines. I have absolutely no financial interest in it, as it happens, so I feel happy about recommending it to you, if you feel you want to use Prestel or Micronet. Once more, do not worry about what





Prestel and Micronet are – I will cover those later too! MEX (Modem EXecutive), being Public Domain, comes with the smallest possible price tag – zero! It is a very powerful program that manages to use the complexities of CP/M to its advantage. It can be used either very simply, or be highly configured, and is, in my opinion, the standard software for accessing bulletin board systems.

As you can see, all you need to get started in comms is a serial interface, a modem, a suitable lead from one to the other, and some software. The combined cost need not exceed £150, and this would give you a very creditable rig-out. Most of that money would

go on the modem, because an intelligent one (which I would recommend) could cost anything from around one hundred pounds to well over one thousand. Obviously, the more expensive modems have many more features than the really cheap ones, but any modem should be viewed as an investment because, unlike many others add-ons for the CPC, if you decide to upgrade or change your computer, you will always be able to use your modem with it.

Next month, we will look at the Prestel and Micronet services, and see what they have to offer. If you have any questions about anything you have read here, please write in and ask them, I will be only too glad to answer them for you.

ADDRESSES

Pace Micro Technology
Allerton Road
Bradford
West Yorkshire
BD15 7AG
Tel: 0274 488211

Spectre Communications
9 Goosecote Hill
Egerton
Bolton
Lancs
BL7 9UQ

KDS Electronics
15 Hill Street
Hunstanton
Norfolk
PE36 5BS
Tel: 04853 2076

YOUR BOY IS PITCHED INTO THE INTERNATIONAL GOLFING CIRCUIT WITH JUST ONE AMBITION, TO BE THE WORLD'S N^o1. NOW IT'S UP TO YOU IN

Championship Golf

£9.99



AVAILABLE ON SPECTRUM 48/128K, COMMODORE C64 & AMSTRAD 464/6128

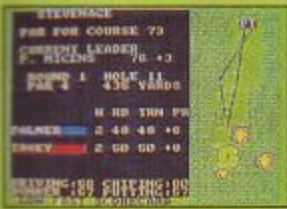
THE GOLF STRATEGY GAME

FEATURES INCLUDE

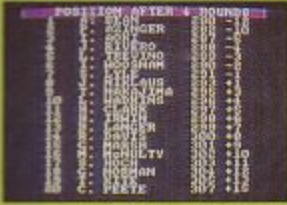
- Full Graphical Tournaments.
- Major & Minor Tournaments.
- Practice Rounds.
- Training Hours.
- 40 Professionals.
- 40 Amateurs.
- Out of Bounds.
- Entry Fees.
- Living Costs.
- Speed Key.
- World Ranking.
- Full Major Results.
- Qualifying Rounds.
- Hole in One.
- Driving, Par.
- Chipping, Putting.
- Bunker Shots.
- Fixture List.
- Prize Money.
- Caddies, Coaches.
- Replace Clubs.
- Bunkers.
- Fairway.
- Green Flags.
- Trees, Rivers.
- Rough.
- Scoreboard.
- Birdies, Eagles.
- Three Levels.
- Mortgage & Loan Facility.
- Bookies.
- Hotels.
- Sponsors.
- Save Game Option.
- Printer Option.
- Name Editors.
- + Much More.

D&H GAMES CANNOT GUARANTEE ALL FEATURES ARE ON ALL GAMES

AVAILABLE FROM ALL LEADING RETAILERS



SPECTRUM SCREENSHOTS



TO OBTAIN A FREE CATALOGUE OF ALL OUR STRATEGY GAMES JUST ENCLOSE A LARGE S.A.E.

OTHER GAMES STILL AVAILABLE BY MAIL ORDER

THE NATIONAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	£9.99
SOCCER COACH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	£9.99
GRAND PRIX	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	£9.99
SNOOKER MANAGEMENT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	£9.99
BOXING MANAGER	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	£7.99
BOXING MANAGER II	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	£9.99
FOOTBALL DIRECTOR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	£9.99
FOOTBALL DIRECTOR II	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	£19.99
CRICKET CAPTAIN	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	£9.99
WEMBLEY GREYHOUNDS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	£7.99
INTERNATIONAL MANAGER	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	£7.99
2 PLAYER SUPER LEAGUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	£7.99
RECORDS FILE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	£3.99

SPECTRUM 48k SPECTRUM 128k AMSTRAD CPC 464 AMIGA
ATARI ST IBM BBC COMMODORE 64 AMSTRAD CPC 6128

PLAYING TIPS FOR ALL OUR GAMES £1.00

Cheque/P.O. made out to D&H Games plus a large S.A.E. with a 25p stamp attached. Please state clearly which game or games you require and for which computer. Also write your name and address on the reverse side of any cheques. Overseas orders please include £1.50 for postage and packing.



Dept BBC, 19 Melne Road, Stevenage, Herts SG2 8LL ENGLAND

(0438) 728042

CPC BUSINESS SOFTWARE

NEW GENERAL LEDGER 6128...£29.95
Simplified book-keeping system for small firms and the self-employed.
● Uses second 64K of the CPC 6128 to store up to 400 transactions!
● Handles Receipts, Payments, VAT, plus monthly standing orders.
● Produces useful reports including Profit/Loss A/C and Trial Balance.
● Update for £10 (send old disc).
STILL AVAILABLE: Business/Accounts software for 64K CPCs. SAE for list.
All programs are Epson-compatible.

STOCK ACCOUNTING SYSTEM...£39.95
Integrated Stock Control/Invoicing system for the CPC 6128. Produces invoices from built-in price list with up to 750 items on line!
Automatic stock level adjustment and Sales Ledger posting! Features a new Stock Analysis routine.

HOME EXECUTIVE.....£19.95
Personal Accounts, Card Filer, Shopper, Diary/Calendar utilities. Prints on A4 or organiser paper!



SD Microsystems (Dept CPC)
P.O. Box 24 HITCHIN HERTS.
☎ 0462 675106



LEM SOFTWARE - 280c TOOLKIT.

THE UTILITY FOR ALL MACHINE CODE USERS - ONLY £9.99

"Excellent value for money", "Brilliant package", that is what Your Sinclair said about the Spectrum version of our Toolkit, now available for the Amstrad 464, 648, and 6128. 3 programs in 1. Copies to disc. HAS OUR FULL MONEY BACK GUARANTEE - NOTHING TO LOSE!
* SUPERB ASSEMBLER - full screen editor - like a word processor. Very fast - has its own monitor.
* TOOLKIT - shows what happens to registers when running m/code, plus disassembler, debugger, etc.
* CIOS - reverse assembler - changes machine code back into a source file - relocate your m/code!
IDEAL FOR BEGINNERS. MANY UNIQUE FEATURES. INCLUDES HEX/DEC, LOADER MODE SINGLE STEPPER. HALF THE PRICE OF MANY RIVALS! SAE FOR DETAILS. ALL INCLUSIVE PRICE.

LEM, DEPT AC, 11 BEACONSFIELD CLOSE, WHITLEY BAY, TYNE AND WEAR. NE25 0UH. TEL 031-2533615.

TRANCE

ARE YOU

Confused by the CUBE? Bored by bar charts? MUGged methodically? Finding yourself locked in strange rooms for weeks on end? Zapped Out? Alienated by your computer? Lost your sense of adventure? Should the answer to any of these questions be YES, and you have taken to watching Crossroads videos you really should be into a

TRANCE

Do not delay. Act immediately, remonstrance is the only solution to your problem, can YOU find the solution to

Remon's TRANCE?

Anyone can crack it, so you have no need to HACK it, the solution is in your hands, not in the program. You will not have seen the film, read the book, worn the T-shirt or tried the soup yet, because CPC 664/6128 users are to be the first to succumb to its spell.

THE PRIZE is proportional to all TRANCEactions

in other words ... for every TRANCE puzzle sold within twelve months from the first sale the PRIZE fund INCREASES by £1! Submit your answer on the enclosed enTRANCE form. DRAW in twelve months to find the winner, if it is not won, then every month following until won. Watch the prize grow, GROW GROW in ACU!

£****
M. REMON.1989

Introductory price £9.99 inc P&P ex asprin.
Cheques/POs to 'TRANCE' Stonehaven,
Nth End, S. Kelsey, Lincoln LN7 6PG ACU.
Tel: 06527 584

MAKE YOUR AMSTRAD EARN!

Yes making money with your Amstrad becomes incidental when you know how. Your micro is, if only you knew it, a gold mine. The size and make is irrelevant. Make the initial effort NOW by starting your own.

HOME BASED BUSINESS.

This may be the most important move you will ever make!

REMEMBER: You'll never get rich by digging someone else's "ditch". Anyone in the country, including YOU, can become very rich in a relatively short period of time just by doing a few basic things! It's more rewarding than playing games. The benefits are many and varied. Full or part time. For FREE details send S.A.E. to:



HOME BASED BUSINESS

31 PILTON PLACE (ACU13)
KING AND QUEEN STREET
WALWORTH, LONDON SE17 1DR

QUALITAS PLUS

Your printer was an expensive buy - why not make the most of it? Qualitas Plus can greatly enhance your printing, without losing the convenience and power of your word processor. Just look at these features...

- **Unlimited NLQ fonts!** Two pica, one elite, one italic and one proportional are supplied for starters - all are suitable for word processing and business use. If these aren't enough you can design your own with the easy-to-use font editor supplied or obtain extra fonts from us - see below.
- **Normal AND double height printing!** You can have both within a document. Each font can also be printed in condensed, expanded, subscript, superscript, underlined and emphasised using standard Epson codes - all in NLQ.
- **Micro-justification!** Lines can be justified with equal spaces between words, even with proportional fonts, and hard spaces can be embedded. Tabbing is possible even with proportional fonts.
- **Co-resident with host program!** Edit your document and then just print it, using all the powerful features of your word processor, eg print formatting, character redefinition, and even mail merge (try doing this with a desktop publisher!) You do NOT have to save files to disc first!
- **Very compatible!** Works with nearly all 9-pin Epson-compatible printers, including the CP80 and the MT80, but not the DMP1 or HR5. Compatible with Advanced Amsword, Masterfile III, Mini-Office II (CPC6128 or equivalent only), Protex (except CP/M Plus but see below), Tasword, and your own BASIC programs.

Qualitas Plus (NEW improved version 2) is just £16.95. The NEW Qualitas Font Library adds an amazing 30 extra fonts for only £14.95 (requires 8-bit printer port). The Utility Pack for CP/M Plus allows Qualitas to run under CP/M Plus (eg with Protex) and costs £9.95. Latest KDS 8-bit printer port Mk3 - £18.95. Upgrades (send us your master disc): Qualitas Plus version 1 to version 2 - £4.95; any Font Pack to complete Font Library - £6.95.

All programs disc only. Please state your computer, printer and word processor. UK orders post free (Europe add £1, elsewhere add £2 airmail).

"I can't stand the DMP2000's ugly NLQ print, and many other printers have the same problem. The definition cure is Qualitas Plus. Provided your printer is compatible, it is one of the best buys you will ever make." - WACCI May 1988

SEVEN STARS

Seven Stars Publishing,
Dept ACU, 34 Squirrel Rise,
Marlow, Bucks SL7 3PN.
Tel: 06284 3445



Smogware
Systems

Prop: I. A. Napier

Smogware Systems
20 Grove Avenue
New Costessey
Norwich, Norfolk
NR5 0HN ENGLAND

RSX - LIB (1.0) with 52 RSXs supplied free!

The RSX library utility

DO YOU FIND RSXs DISAPPOINTINGLY IMPRACTICAL?

* You don't have the machine code know-how to turn machine code routines into RSXs? * You find it painfully time-consuming to change the names of your RSX commands? * You are forced to use wastefully big files of RSXs, even if you don't want to use them all? * Your files have to be loaded at a specific address in memory to work? * You have problems with 2 or more files all requiring the same area of memory? * You find it difficult to keep track of (and use) your RSXs as they are spread across many different files/discs?

RSX-LIB ALLOWS YOU TO USE RSXs QUICKLY, SIMPLY, AND EFFECTIVELY!

* RSX-LIB stores the machine code routines (to be run by your RSX commands) on disc, and holds information about them in its library. * When you want to use some RSXs, select the ones you require from the library (at the touch of a few buttons), and RSX-LIB will build an RSX file and save it to disc ready for use (automatically)! * The RSX file produced can be loaded and run anywhere in memory, giving you total flexibility - RSX-LIB actually searches your machine code for anything that could cause problems, and changes it (automatically) at run-time to suit the current memory location. * You can change the RSX command names easily and quickly if you need to before building the RSX file. * You can use your existing machine code routines (and magazine type-ins, etc) with RSX-LIB to run them as RSXs. * RSX-LIB will even do its best to pick out the machine code routines from existing RSX files for use with RSX-LIB in the same way!

A COMPLETE RSX MANAGEMENT SYSTEM.

* A simple-to-use utility, with comprehensive (and friendly) manual. * No machine code expertise required. * Everything is done at the touch of a few buttons, and is as useful to the novice as to the experienced programmer. * The manual includes full specifications for the 52 RSXs supplied, and there is an example program showing their use. * The RSXs themselves are well worth the money!

Suitable for all CPC
machines, but supplied
on DISC ONLY.

Cheques (£ Sterling),
Eurocheques, or UK P.O.s for
£19.95 (UK), £21.45 (Europe),
£21.95 (Rest of World) payable
to 'Smogware Systems'
please.

CHALLENGE

GREAT STRATEGY GAMES

SOFTWARE

A superb range of Football & Cricket games
for the Spectrum, Commodore & Amstrad

From Challenge Software (formerly E & J Software)

TREBLE CHAMPIONS £9.95 Spec 48/128 : Com 64/128 : Ams CPC
A STUNNINGLY REALISTIC FOOTBALL STRATEGY GAME - Can you Win The League, The F.A. Cup & The League Cup - 4 Divisions of 20 Teams + 1 Div. 20 Non League Teams - Details of OVER 1500 Players - Results & Leagues ALL Divisions - League Cup with 1st, 2nd Rnds + S/Finals over 2 Legs - F.A. Cup includes Non League - Transfer Market buy ANY PLAYER ANY DIVISION - 3 Skill Levels - Start ANY Division - SAVE GAME - Time Management - Reserves - 2 In-Match Subs - Coaching + Fitness Training - PLUS MUCH MORE.

EUROPEAN CHAMPIONS £8.95 Spec 48/128 : Ams CPC
THE INTERNATIONAL CHALLENGE OF THE EUROPEAN NATIONS CUP - Genuine Nations Cup Format with Full Random Draw of 32 Seeded Teams - Fixture List, Results and League Tables of ALL 8 Groups - Discipline & Medical Reports - Squad of 22 Players plus Other Players - 17 Month Itinerary of Qualifying Group, (Arrange Friendlies) and Finals - Plus many more Superb Features and Options. EUROPEAN CHAMPIONS includes E & J's MATCH PLAY SYSTEM which captures all the ACTION, DRAMA & TENSION of International Football.

WORLD CHAMPIONS £7.95 Spec 48/128 : Com 64/128 : Ams CPC
A COMPLETE WORLD CUP SIMULATION - Select Friendlies - 25 Players - Qualifying Group - 2 In-Match Subs - Discipline Table - Select Tour Opponents - Extra Time - Final Rounds - Players Gain Experience - 7 Skill Levels - TEXT MATCH SIMULATION including: Bookings, Goal Times, Named & Recorded Goal Scorers, Injury Time, Corners, Free Kicks, Match Clock, Penalties - PLUS many more Features.

CRICKET MASTER £8.95 Spec 48/128 : Com 64/128 : Ams CPC
A SUPERB SIMULATION OF ONE DAY INTERNATIONAL/COUNTY CRICKET - Weather, Wicket & Outfield Conditions - Batting & Bowling Tactics - Team Selection - Fast, Medium & Spin Bowlers - 4 Types of Batsmen - Select Field Layout - 3 Skill Levels - Wides - Byes - No Ball - Run Out - Misfield - Dropped Catches - Scoreboard - Batting & Bowling Analysis - Run Rate - Single Option - 3 Game Speeds - STAR FEATURE a complete MATCH OVERVIEW showing Ball by Ball Action and Commentary and MUCH MORE!

TEST MASTER £8.95 Spec 48/128 : Ams CPC
A COMPREHENSIVE SIMULATION OF A 5 DAY TEST MATCH - Includes most of the Features of CRICKET MASTER and MATCH OVERVIEW plus Declarations - Nightwatchmen - Light Meter - Rain Stops Play - Varying Number of Overs per Day - Follow On - Save Game - New Ball - Bad Light Interruptions - TEST MASTER is a True representation of a Complete Test Match and offers the ULTIMATE CHALLENGE to All Cricket Enthusiasts.

Above games available on disc @ Plus £4.00 Spec & Ams or Plus £2.50 Com PER GAME
(Treble Champions not available on disc for Commodore 64/128)

ALL GAMES are available by MAIL ORDER for IMMEDIATE despatch by 1st class post and include Full Instructions. State which Machine & Tape or Disc. (Add 50p per Game outside UK or £1.50 per Game for AIRMAIL outside Europe. Payment in Pounds Sterling Only)

Cheques or Postal Orders payable to Challenge Software, SEND TO:
Challenge Software, Room A2, 37 Westmoor Road, ENFIELD, Middlesex, EN3 7LE

FANTASTIC DISCOUNTS

FULL PRICE GAMES ONLY
Buy 2 games deduct £3.00
Buy 3 games deduct £5.00
Buy 4 games deduct £7.00
Buy 5 games deduct £12.00

ZEDASM ROM £19.95

The professional Z80 Text Editor/Assembler and System monitor. Superfast Z80 assembler (200 lines second). Supports page switching on 6128 machines, up to 80k of text source in memory at the same time.

DEMON DEVELOPMENT CARTRIDGE £19.95

The Ultimate machine code tool. Stop Any program Anytime by a press of a button, the memory remains intact and can be saved to Tape/Disc, debugged, traced, moved, disassembled etc.

EPROM PROGRAMMER KIT £27.50

Transfer your favourite programs (Basic/Machine code) onto Eprom. Programs 2764/27128 12.5 or 21 volt Eproms. Powerful but easy to use software, Rom to Rom copy, Editing, Verification, Single or block programming.

PCB DESIGNER CARTRIDGE £59.95

Design double sided printed circuit boards quickly and easily. Output to standard printer 1:1 or 2:1 scale. Predefined DILS & IDC connectors. Auto Routing. Zoom Editing etc. Too many functions to list here.

PASCAL COMPILER ROM £15

Our pascal compiler is easy to use, suitable for the absolute beginner and produces stand alone Machine code. Does NOT require CPM.

(Note cartridges have no through connector for 464 with Disk Drive)

JOHN MORRISON DEPT (ACU)

4 REIN GARDENS, TINGLEY,

WEST YORKSHIRE, WF3 1JR

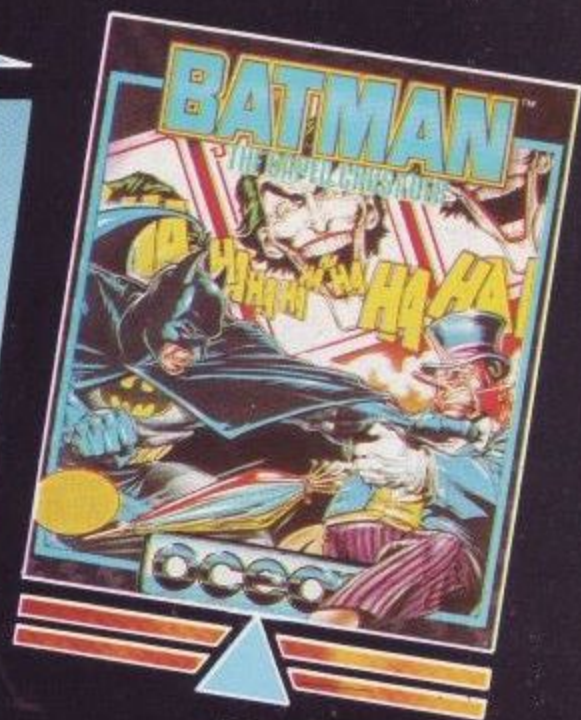
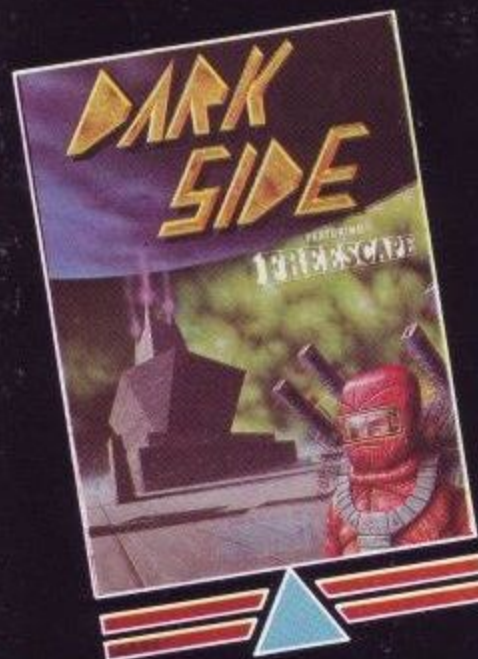
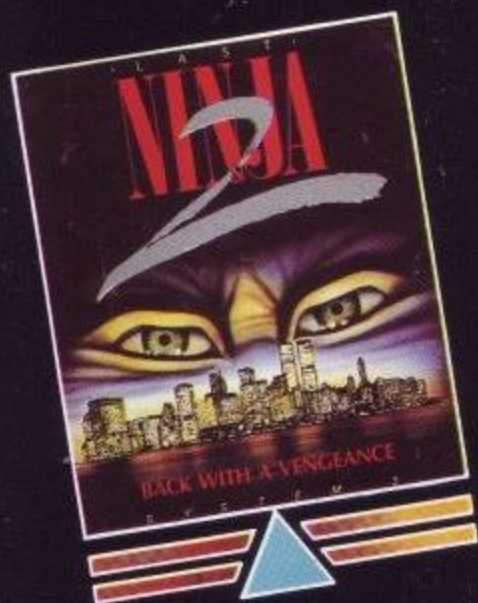
TELEPHONE (0532) 537 507

S. A. E. for further information



A POWERFUL PACK OF FOUR

DARK



FORCE

LAST NINJA 2

Once beaten, but not destroyed, the evil Shogun Kunitoki used all his mystic powers to transport himself through time and establish a new empire of tyranny in modern day Manhattan. In fear of Kunitoki's growing powers, the arcane gods used all their wisdom to bring you, the Last Ninja, across the abyss of time and confront your arch-enemy once more. You arrive in this frightening and awesome modern world bringing nothing with you save your intelligence, skill and cunning and a burning desire for vengeance. Will this be the final battle? Can you vanquish Kunitoki once and for all?

© System Three Software Ltd. All rights reserved.

BATMAN - THE CAPED CRUSADER

D.C. Comics' famous super hero Batman breaks onto the micro screen in a Wham! POW! Arcade adventure as you engage the forces of evil in Gotham City. Start in the Batcave and move on through the world of fun and excitement as you face the trickiest customer of all... the Penguin. Save some strength for the battles ahead with the dastardly Joker however, or you'll miss the thrilling climax!

TM & © DC Comics Inc. 1988. All rights reserved.

DARK SIDE

From the Major Developments team. Creators of the award winning Driller.

Solid 3D, the nearest yet to being there.

Mission: Locate & Destroy Zephyr. One weapon on Dark Side. Avoid Plexor tanks. Disable Matrix ECO's, use tunnel network and jet pack to best advantage. Time is short. END.

© Incentive Software Ltd.

R-TYPE

Deep in the cosmos, the ultimate terror... The Bydo Empire - evil, horrific, deadly. In the dark recesses of time and space, its terrifying creatures roam the cosmos, waging war on the Planet Earth. The desperate battle has just begun... As pilot of the R-9 fighter plane, it is your mission to crush these interstellar monsters using every sophisticated weapon at your disposal. Only your skill and reactions stand between brilliant victory - and the devastation of Mankind... At last, the arcade sensation bursts on to your home screen with several stages, terrains and a compelling scroll feature - the ultimate in thrilling gameplay.

R-Type™ ©1987 IREM Corporation. Licensed to Electric Dreams.

SPECTRUM · AMSTRAD · COMMODORE

£12.99
CASSETTE



SPECTRUM · AMSTRAD · COMMODORE

£17.99
DISK

CABAL



See us at the
PC SHOW
27th Sept - 1st Oct

The coin-op sensation that throws you deep into enemy territory with little more than a low-powered, single shot repeater for protection. With superior marksmanship and lightning reactions you can increase the odds - in your favour. Capture enhanced weaponry, including grenades, and now you can really make your mark! ... that is, until you come face to face

with the enemy gunships, tanks and submarines. Equip yourself for some stunning arcade action, load up and **FIRE!!!**

SPECTRUM	£8.99
COMMODORE	£9.99
AMSTRAD	£9.99
ATARI ST	£19.99
AMIGA	£24.99

ocean®

Ocean Software Limited
6 Central Street · Manchester
Telephone: 061 832 6633
Telex: 669977 OCEANS G
Fax: 061 834 0650