A Database Publication

Vol. 3 No. 10 October 1987 £1

COMPUTING WITH THE AMSTRAD CPC

INCORPORATING AMTIX!

The independent magazine for Amstrad CPC users

Tiffany's hands-on guide to EXOLON

Create your own computer landscapes

Exclusive map: Exploring Thrust II

Play Four-in-a-Row on your CPC

COMPETITION

TEN of Cheetah's digital drum kits to be won

ROMANTIC ROBOT present

WHAT IS THE ANSWER TO LIFE, THE UNIVERSE, AND EVERYTHING ?

forty two = multiface two

???

YES, FORTY TWO POUNDS IS THE SPECIAL SUMMER PRICE OF THE MULTIFACE TWO.

Q: WHY WOULD I NEED THE MULTIFACE TWO?

A: Basically to make back-ups of programs on a CPC 464, 664 or 6128 and also to enable you to study, alter and customize them.

Q: OH, DO I NEED TO UNDERSTAND THE PROGRAMS OR EVEN ALTER THEM TO MAKE BACK-UPS?

A: NO! – NOT with the MULTIFACE TWO – it is in fact the ONLY product on the market which works FULLY automatically. You load any program as usual, run it for as long as you like and when you wish to make a copy you just press the MULTIFACE's red button and follow the menu and on-screen instructions.

Q: HOW DOES IT WORK THEN? IS IT EASY? USER-FRIENDLY? ERROR-TRAPPED? IDIOT PROOF? GUARANTEED?

A: YES! It works a treat and it could not be easier. The menu gives four basic options – to **SAVE** a program, to **RETURN** to continue it, to **JUMP** (say to your own routines – invaluable for hackers) and **TOOL** to access the MULTI-TOOLKIT set of built-in utilities. For example pressing **S** to **SAVE** will first allow you to **NAME** the back-up and then let you save a **PROGRAM** or just a **SCREEN** to **TAPE** or **DISK**. Before the saving itself, MULTIFACE compresses the program so that it takes the least amount of space on tape/disk and will re-load as quickly as possible. Once a program is saved, you can **RETURN** or **JUMP**, use the **TOOLKIT** to change it, **SAVE** it again, etc.

Q: DON'T YOU CORRUPT THE SCREEN WITH YOUR MENU, INSTRUCTIONS, PULL DOWN WINDOWS, ETC.?

A: NO. MULTIFACE TWO has its own memory (8K ROM & 8K RAM) and a lot more hardware – thus when it finishes its job or when you re-load your back-ups, everything is **FULLY** and **AUTOMATICALLY** restored. NOTHING else can do this and on all other devices you will need to try to restore the screen: its modes, colours, windows, etc. – this takes quite some time and effort and the failure rate is high...

Q: OK, SO MULTIFACE CAN COPY FROM TAPE TO DISC, BUT CAN IT ALSO COPY FROM TAPE TO TAPE OR DISC TO DISC OR DISC TO TAPE?

A: Of course it can. MULTIFACE saves either to tape or disc and it saves whatever happens to be in the computer at that time: it does not matter whether it was originally loaded from tape or disc or even typed in, so all combinations are possible.

Q: SO FAR SO GOOD. BUT CAN'T I DO ALL THIS WITHOUT THE MULTIFACE?

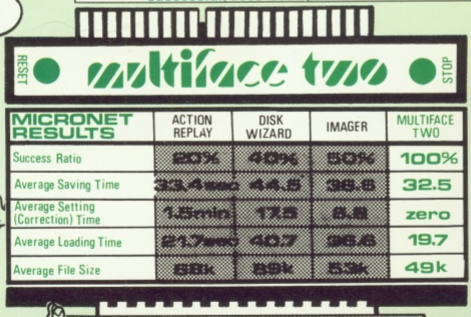
A: ABSOLUTELY NOT! First, you need a hardware device, a "magic box", to be able to stop and copy any program at any stage – no software-based copier can in principle ever do that. Any tape/disc copier will just try to copy a tape as it is – if there are unorthodox leaders, speedlocks, protections against copying, etc., you'll end up with a problem – but not with a back-up. If you wish to back-up any game at any point, be it upon loading or after going through the lenslock or half-way through, if you wish to poke infinite lives and then save, etc. – you just can't do anything like it with tape/disc copiers – you need the MULTIFACE!

Q: MULTIFACE IS NOT THE ONLY 'MAGIC BOX' ON THE MARKET – WHY SHOULD I BUT IT MORE THAN ANYTHING ELSE?

A: There are four devices on the market: Action Replay by Datel Electronics, Disc Wizard by Evesham Micros, Mirage Imager and MULTIFACE TWO. Each manufacturer would naturally argue his product is the best buy – fortunately (for you and us), MICRONET recently compared all four units and MULTIFACE TWO came out the best in literally all respects: the most successful one – 100%!, the ONLY AUTOMATIC ONE, the FASTEST ONE both in LOADING *AND* SAVING time, the one taking the LEAST ROOM when saving – and you still get a couple of EXTRAS: a RESET button and an extensive and unique MULTI-TOOLKIT.

MULTIFACE TWO SIMPLY MAKES LIFE WORTH LIVING AGAIN !

The summary of MICRONET tests: "MULTIFACE TWO from ROMANTIC ROBOT wins easily on all features! It is faster, more convenient, more successful, uses less space and has more facilities!"



MICRONET RESULTS	ACTION REPLAY	DISK WIZARD	IMAGER	MULTIFACE TWO
Success Ratio	80%	40%	50%	100%
Average Saving Time	33.4secs	44.5	36.6	32.5
Average Setting (Correction) Time	1.5mins	12.5	6.8	zero
Average Loading Time	21.7secs	40.7	25.6	19.7
Average File Size	68k	68k	52k	49k

Tape-to-disk at the touch of a button. Ridiculous, you may say, but it works every time. *Multiface* can stop any program in its tracks and save the program from memory to either tape or disk. It's completely foolproof. Similar products have had problems with screen size, colour and even sound; *Multiface* can handle all these without a second thought.

That alone would have satisfied many people, but Romantic Robot has gone one step further, incorporating a memory editor. No program is safe with this: everything is out in the open, including the Z80 registers, CRTC data and any part of memory.

Don't be fooled into thinking this will result in mass piracy, however. The *Multiface* unit itself must be plugged into your Amstrad to allow reloading of a program it saved.

Multiface II must be the cleverest hardware device at present – a necessity for disk owners who thought they were stuck with loading from tape every time.

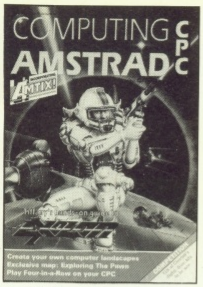
AMSTRAD ACTION JANUARY 1987

The special price of £42.00 applies strictly to mail orders received with the coupon below before the end of September 1987.

multiface two THE ESSENTIAL AMSTRAD CPC COMPANION

Please send me a MULTIFACE TWO at £42.00 plus p&p – UK £1.00, Europe £2.00, Overseas £3.00
I enclose a cheque PO for £..... or debit my [ ] [ ] No [ ] Card exp.....
Name & address .....

ROMANTIC ROBOT UK LTD 15 Hayland Close London NW9 0LH 24 hrs 01-200 8870 CWB



Vol. 3 No. 10 October 1987

Managing Editor:
Derek Meakin

Features Editor:
Alan McLachlan

Production Editor:
Peter Glover

Art Editor:
Heather Sheldrick

Associate Editor:
Roland Waddilove

Assistant Editor:
Ian Sharpe

News Editor
Mike Cowley

Advertisement Manager:
Tony Nowell

Advertising Sales:
Margaret Clarke
Jacqui Fox

Tel: 061-456 8835 (Editorial)
061-456 8383 (Admin.)
061-456 8500 (Advertising)
061-480 0171 (Subscriptions)
Telecom Gold: 72:MAG001
Telex: 265871 MONREF G
Quoting Ref. MAG001
Prestel Mailbox: 614568383

Published by:
Database Publications Ltd,
Europa House, 68 Chester Road,
Hazel Grove, Stockport SK7 5NY.

Subscription rates for 12 issues, post free:
£12 – UK
£24 – UK & Eire
£36 – Overseas Airmail

ABC 39,369 Jan-June 1986
ISSN 0952-3022

"Computing with the Amstrad CPC" welcomes program listings and articles for publication. Material should be typed or computer-printed, and preferably double-spaced. Program listings should be accompanied by cassette tape or disc. Please enclose a stamped, self-addressed envelope, otherwise the return of material cannot be guaranteed. Contributions accepted for publication by Database Publications Ltd will be on an all-rights basis.

© 1987 Database Publications Ltd. No material may be reproduced in whole or in part without written permission. While every care is taken, the publishers cannot be held legally responsible for any errors in articles, listings or advertisements.

"Computing with the Amstrad CPC" is an independent publication and neither Amstrad Consumer Electronics plc or Amsoft are responsible for any of the articles in this issue or for any of the opinions expressed.

News trade distribution: Europress Sales and Distribution Limited, Unit 1, Burgess Road, Ivyhouse Lane, Hastings, East Sussex TN35 4NR. Tel: 0424 430422.

Contents

FEATURES

5 NEWS
Read all about it. All the latest events and happenings in the Amstrad world.

22 10-LINERS
Dazzle us with brilliance – more programming gems and your chance to win up to ten pounds.

30 CASE STUDY
Water, water everywhere ..... down the drain with Domark. Will The Sewer be flushed with success?

41 LOGO
Continuing our guide to this fascinating language. You can interrogate your keyboard and meet some real characters.

45 LANDSCAPES
Grow some trees and use your Amstrad to investigate what you can do with computer art.

47 COMPETITION
Answer three simple questions correctly and one of ten digital drum kits could be yours.

59 POSTBAG
The part of the magazine you write yourselves – the pick of our bulging mailbag.

61 ORDER FORM
Subscriptions, back issues and special offers all on one easy-to-use form.

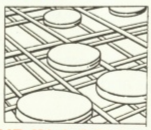
REVIEW

43 TAS-SIGN
Want to get yourself noticed? We put Tasman's new sign writer package to the test.

UTILITY

53 FAST PRINT
Put some zip into AMS' Stop Press (Pagemaker) with this quick page printer.

GAME



35 FOUR IN A ROW
In our version of the ever-popular Connect 4 you can play against a friend or take on your CPC.

Get it right!

All major listings in this issue are accompanied by checksums to help overcome typing mistakes. For how they work see the article in the June issue and the comments in July's Postbag.

AMTIX!

9 GAMES REVIEWS
- Mask
- Paperboy
- Wizball
- Convoy Raider
- Joe Blade
- Slap Fight
- Raging Beast
- F-15 Strike Eagle
- Deathscape
- Quartet
- Championship Baseball, Football, Basketball
- Cholo
- Game Over
- Z
- Black Magic
- Road Runner
- Killer Ring

25 ADVENTURES
More words of wisdom from our wonderful wizard. He also provides a map of Dungeons, Amethysts, Alchemists 'n' Everythin' and reviews Rick Hanson.

49 AMTIPS
Tiffany takes over – Exolon made easy, Stormbringer poked, infinite Scoobies and more.

The 8th official

AMSTRAD COMPUTER SHOW

Organised by Database Exhibitions

10am-6pm Friday October 23
10am-6pm Saturday October 24
10am-4pm Sunday October 25

G-Mex Centre, Manchester

The fastest growing computer show of them all is now moving North – to the most innovative, prestigious exhibition centre in Britain.

This magnificent building will play host to all the major companies in the Amstrad market – including Amstrad themselves, showing the complete range of machines.

Whether you own an Amstrad CPC, PCW or PC – or just thinking of buying one – there will be lots for you to see and enjoy

FREE presentations in the Amstrad Theatre.

We've set aside a huge area to meet the heavy demand for seats during the non-stop presentations. You'll see demonstrations of new products, hear about all the latest developments, and be able to grill the experts.

How to get there

Situated in the heart of the city centre, G-MEX is only one mile from the M602, and there's ample parking space beneath the hall.
Within easy reach of Victoria and Piccadilly railway stations.

THIS ADVANCED TICKET SAVES **£1** A HEAD – AND CUTS THE QUEUES

Advance ticket order

Please supply:

☐ Adult tickets at £2 (save £1) ..... £.....

☐ Under-16s tickets at £1 (save £1) ..... £.....

Total £.....

☐ Cheque enclosed made payable to Database Publications Ltd.

☐ Please debit my credit card account

☐ Access ☐ Visa

☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Admission at door: £3 (adults), £2 (under 16s)

Advance ticket orders must be received by Wednesday, October 14, 1987

AMSTRAD COMPUTER SHOW

THE G-MEX CENTRE MANCHESTER

October 23-25

POST to: *Amstrad Show Tickets, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.*

Name.....

Address.....

.....

Signed.....

PHONE ORDERS: Ring Show Hotline: 061-480 0171
PRESTEL ORDERS: KEY *89, THEN 614568383
MICROLINK ORDERS: MAILBOX 72:MAG001
Please quote credit card number and full address + Ref A127

New games galore for the CPC

AS the countdown to Christmas speeds up, a welter of new games for the Amstrad CPC has come pouring from the software houses.

The festive season floodgates are once again about to open after an abnormally busy summer for software sellers.

And the CPC's versatility and superb game playing capabilities are shown in the vast variety of products on offer.

One house alone – Gremlin – has seven new games on the starting blocks.

Others, like Martech and Activision are boasting latest licensing deals, and newly-written work is being presented by Incentive, Digital Integration, CRL and Electronic Arts.

All of which goes to show the continued popularity of the CPC in this highly competitive market.

A NUMBER of popular cartoon and real-life characters feature in the offerings from Gremlin (0742 753423). World Cup hero Gary Lineker has put his name to Superstar Soccer, claimed to be "a completely innovative and original genre of a football game".

From the television cartoon, Mask II features the hero Matt Trakker and has two main elements: The selection of team and vehicles and the completion of four missions.

Also from the small screen, another youngsters' favourite, Masters of the Universe, has been tapped to produce The Feature Movie as He-Man takes on Skeletor.

Disney hero

Basil The Great Mouse Detective comes from the big screen and is the latest Disney hero. From his study at 221b Baker Street, he sets out to find his faithful companion Dr Dawson in elementary fashion.

Blood Valley is a Gremlin fantasy adventure based on the Duelmaster series of fighting books, while Alternative Games is a simulation including sack racing, log flogging, running up walls and boot throwing.

Compendium is described as a whacky adaptation of a series of traditional board games.

Slaine, the 2000 AD cult hero has been licensed by Martech (0323 768456) and turned into a game of the same name featuring Reflex – said to be a totally different type of control.

The player is required to take over Slaine's mind so that as each situation arises, the brain races to make sense of what is before it.

Interactive 3D graphics

Driller from Incentive Software (07356 77288) features Freescape, a 3D environment simulator. Looking in any direction will produce a view in solid interactive 3D graphics.

The latest adventure from CRL (01-533 2918) – Book of the Dead – is the first from a young group of programmers called Essential Myth.

The hero is an Egyptian godling called Kteth whose father's attack on the gods leaves him banished from the heavens.

Fantasy adventure – The Bard's Tale – is among the pre-Christmas offerings from Electronic Arts (0753 49442).

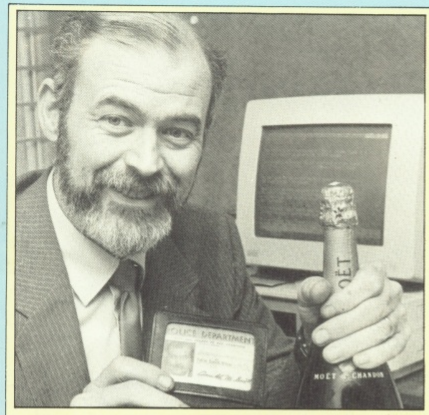
Spreading evil

The action takes place in the country town of Skara Brae where a small group of unproven warriors must fight to stop the spread of evil from the wizard Mangar.

Arcticfox is an Electronic Arts combat simulation based on a supertank designed for polar combat.

A head-up display mimics control movements on screen. The view from the tank reveals targetable alien resources and the hostile polar terrain.

The software house is releasing another combat simulation, PHM Pegasus. Here a hydrofoil missile craft travels the oceans battling with numerous enemy vessels in any of eight different combat assignments.



CHAMPAGNE HANGOVER

A NATIONWIDE electronic mail competition offering a magnum of champagne as the star prize resulted in a giant hangover when the winner unwittingly caused the software in the central computer to crash.

When ex-San Francisco police officer Cameron (Cam) Lacey posted the 10,000th message on the MicroLink bulletin board from his office in Grimsby via his CPC6128, all that should have happened was that he received a three litre bottle of Moet & Chandon to mark the milestone achievement.

Unfortunately what no one realised at that time was that the BBS system was only designed to cope with a data field of four characters – up to and including 9,999.

So when just one additional message was received, it was as if a giant fuse had blown.

When the crash came there was consternation at MicroLink headquarters. What made matters worse was that technical chief Tim Clarkson was on holiday and all attempts by his staff to revive Britain's biggest bulletin board were unsuccessful.

After two hours of frantic transatlantic telephone calls, the American authors of the bulletin board software finally traced the problem.

They were, however, unable to make the message numbering system accept a figure larger than 9,999. All they could do was make room by deleting the first 5,000 messages.

In fact, the only person left with a grin on his face was Cameron Lacey.

According to MicroLink boss Derek Meakin, it should have been a sheepish one. For it seems that Cam cheated a little bit.

"He'd obviously written a program that started sending identical messages just as the number of messages on the board was approaching the 10,000 mark".

All the messages said was: "Is this the one?"

"So he ended up with the drink while we got left with the hangover".

BrunWord update

BRUNNING Software has produced an upgraded version of its word processor, BrunWord, for the CPC6128. It features a screen update more than twice as fast as its predecessor.

Brunning (0245 252854) say that other additions include ten special user defined characters and the fact that words and phrases can now be replaced.

BrunWord 6128 costs £25, complete with BrunSpell and DataFile. Back-up copies cost £7.50.

Crammed chat

A PROGRAM which can compress English text by as much as 50 per cent is being marketed by Ballinderry Software of Northern Ireland.

Txtpak is supplied on a 27128 eprom and its 30 plus RSX commands are installed when the machine is booted. Two commands are concerned with text compression, the rest enable the user to store and manipulate text data in a ram file.

Tom Kirk of Ballinderry (0846 651320) said: "Text compression is something which has intrigued me for many years.

"When the cost of eproms fell significantly a couple of years ago I decided to begin work on such a program for the CPC.

"I think this is an ideal eprom program since it allows more text to be held in ram without using up appreciable memory.

"I have achieved my aim of an average 50 per cent compression of English text", he said.

Show goes North

NEW attractions have been organised for the Amstrad Computer Show in Manchester.

For the first time outside London the show will include the Amstrad Theatre – scene for non-stop presentations of all that's new for the CPC and its sister machines.

The large theatre area includes seating enabling 150 to watch and listen in comfort while experts demonstrate the latest hardware and software and conduct question-and-answer sessions.

In addition, there will be no fewer than eight huge feature stands occupied by major suppliers, Amstrad itself and the Official Amstrad Users Club.

These impressive feature areas – contributing to a total of 70 individual exhibitors – are made possible by the show's location at G-Mex in central Manchester.

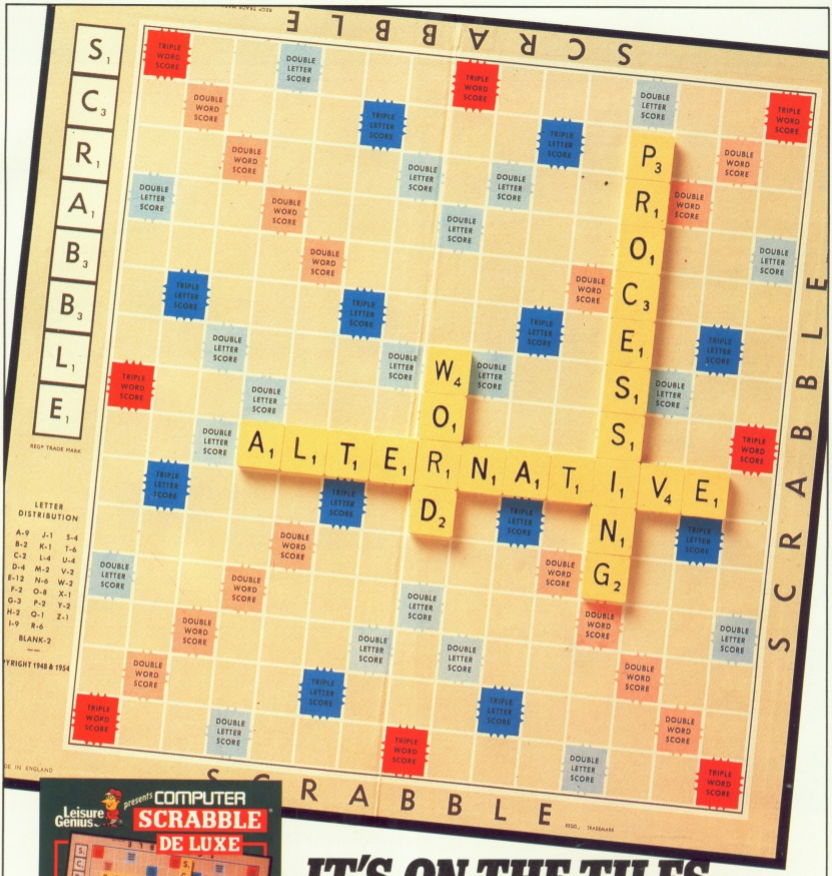
The 100,000 sq ft Greater Manchester Exhibition Centre was specially chosen to house the UK's biggest computer specific show ever held outside London.

It runs from Friday to Sunday, October 23 to 25.

Among the many suppliers working on new CPC developments for release at the show is Siren Software.

The firm is launching an eprom programmer for the CPC range, price £49.99, and will also have a disc-based CPC sound system called Ultrasound on offer for £12.99.

Money-saving advance ticket details are given on Page 4.



IT'S ON THE TILES.

Leisure Genius presents this classic word game elegantly translated to computer. SCRABBLE® is available for most home computers and now a new De-luxe version is available for Commodore 64/128, Spectrum 128 and Amstrad CPC 6128.

Computer SCRABBLE® faithfully follows the board game rules and has a large vocabulary. The computer provides you with intelligent computer 'opponents', a clock and 8 skill levels.

Commodore 64/128 cass ☐ £12.95
disc ☐ £15.95

Spectrum 128 cass ☐ £10.95
disc ☐ £15.95

Amstrad CPC 6128
disc only ☐ £15.95

Name _____

Address _____

Please make cheques or postal orders payable to **Virgin Games Ltd** and send to **2/4 Vernon Yard, Portobello Road, London W11 2DX.** (Please do not post cash)

SCRABBLE® Trade Mark and Copyright licensed by J.W. Spear and Sons PLC. Leisure Genius® is a registered trademark of Winchester Holdings Ltd, a wholly owned subsidiary of Virgin Games Ltd.

Leisure Genius®

STOP PRESS!

Desktop Publishing comes to the Amstrad CPC

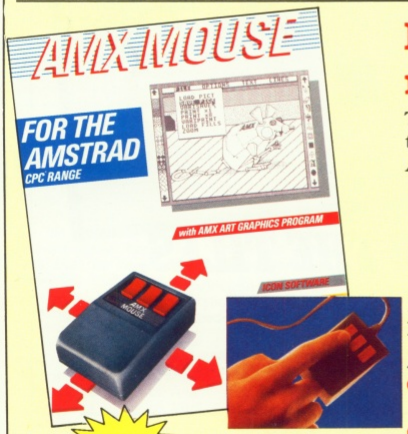
Now you can design your own magazine or newsletter – using either keyboard, joystick or mouse.

AMX Pagemaker is overflowing with features:

- 16 typefaces in a range of sizes – or you can design your own
- Flow text round your artwork
- Crop graphics images – or stretch them to fit
- Built-in painting and spraying facilities
- Zoom option for detailed editing . . . and much more!

This highly acclaimed package normally costs **£49.95.**

For a limited period you pay only **£39.95** – a saving of **£10!**



Bring the power of the mouse to your CPC

This is what reviewer Gabriel Jacobs said in the June 1986 issue of *Computing with the Amstrad:*

> *'The bundled software is magnificient, I can't think of another add-on in the same price range which will give you as much enjoyment combined with as much practical potential'*

. . . and it's the perfect complement to AMX Pagemaker

Here's what you get:

- Top quality mouse with solid rubber ball-bearing
- Interface to connect the mouse to your CPC
- AMX Art, AMX Control, Ico-Designer and Pattern Designer software included – on both cassette and disc
- Comprehensive user manual

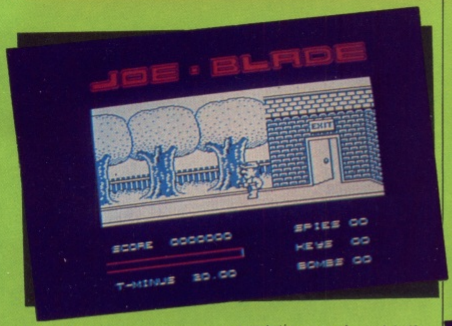
SAVE £10

Normal price £69.95

Special offer price **£59.95**

TO ORDER, PLEASE USE THE FORM ON PAGE 61

JOE BLADE



Players £1.99 tape, joystick or keys

SIX world leaders have been kidnapped by a vicious gang of terrorists led by Crax Bloodfinger, playboy, wit, raconteur and international villain.

30 billion dollars is the princely sum required to secure their release, and of course the governments concerned have refused to pay up.

That's where you come in, surprise, surprise. As Joe Blade you must penetrate Bloodfinger's fortress, rescue the leaders, activate six time bombs and evacuate before they detonate.

The fortress is displayed as a 2D side-on view spreading over 127 screens. Joe Blade is a Spectrum conversion and it shows. The graphics are detailed, humorous and reasonably well drawn, but are in Mode 1 and unimaginative in their use of colour.

Scrutinising the packaging supplied with this preproduction copy I couldn't see any difference between the Spectrum screen shots and what was on my Amstrad's monitor – a pity.

It's the old lowest common denominator syndrome that the CPCs have always suffered from and I'd hazard a guess that these are the original Spectrum graphics after being run through a conversion utility.

Anyway enough whinging, how does it play? Fairly well if you can still find interest in an average trundle-round-the-maze-and-collect-the-objects type scenario.

The fortress is crawling with Bloodfinger's private militia, gun-toting guards and knife-wielding henchmen intent on bringing an ear-to-ear smile to your throat.

Contact with any of these drains your energy unless you find an enemy uniform. This provides a temporary disguise which lets you slip past the thugs unmolested.

You're equipped with a machine gun which will despatch the opposition, but you need to find ammo dumps regularly.

Unless I missed something, the only other hazard to contend with is the bombs. Walk over one and you're faced with a letter-swapping puzzle to form the activation code. Fail to find it in the time limit and it's curtains as the booby trap traps.

As a cheapie it's good value for money and fairly entertaining, just a bit lacking in pizazz.

Ian Sharpe

Presentation 50%
Few options.

Graphics 50%
Detailed, sometimes witty, but flat.

Sound ??
The production version will have some, this copy didn't.

Playability 60%
Challenging enough.

Addictive qualities 65%
Can get a grip if you haven't played many of this type before.

Value for money 70%
OK as a budget title.

Overall 55%
With more effort could have been a lot better.

SLAP FIGHT

Ocean/ Imagine, £8.95 cass, £14.95 disc, joystick or keys

YOU are the pilot of a Slapfighter and must destroy the evil alien swarms which confront you – wave after deadly wave on the ever hostile planet of Orac. Heard this somewhere before?

The game was converted from Taito's coin-op. The left half of the screen does nothing (or at least very little), while you battle it out on the right.

The general ploy is to shoot everything in sight. Some aliens drop a star when hit and if you collect one – by flying over it – a pointer on the left of the screen moves down a list of facilities you can add to your Slapfighter.

These include increase speed, revert to original fire power status, add wings and increase fire power, throw bombs, laser fire, homing missiles and temporary shield.

The Slap Fight hint (see September Amtips) seems a reasonable strategy. It basically hinges on getting the homing missiles and increasing your firepower as quickly as you can.

Even then, the homing missiles don't automatically hit everything you think they should.

The aliens come at you fast and furious and the only way to play is to fly by the seat of your pants – and pray.

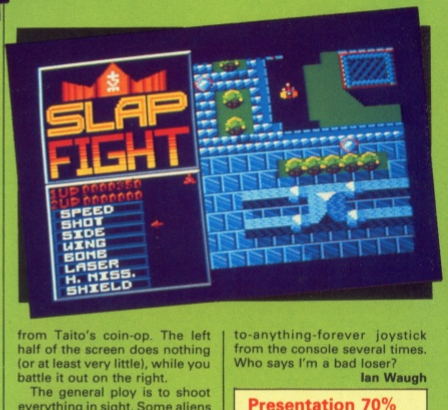
When you lose one of your five lives, all the accumulated goodies go with it. If this happens any way into the game you may as well give up there and then 'cause you're not going to get much further.

Very high frustration factor this one, and it will do a lot for the sale of blood-pressure tablets. I must learn not to take so many chances – it's probably my suicidal tendencies rising to the surface.

Whatever strategy you adopt, you've got to learn the alien's formations and fire patterns if you are to stand any chance of completing the game.

Yep! Life can get hectic out there on the planet Orac, so much so that I pulled my stick-to-anything-forever joystick from the console several times. Who says I'm a bad loser?

Ian Waugh



Presentation 70%
Plays best with a joystick but definable keys, too.

Graphics 80%
Nice backgrounds.

Sound 80%
Nice tunes.

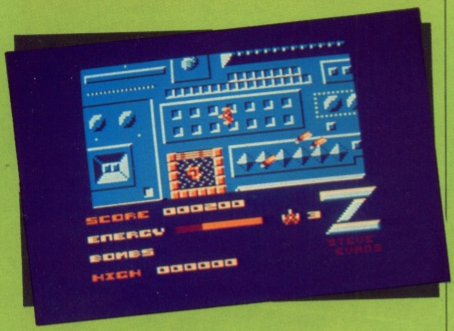
Playability 55%
You still have to wade through the first stages even after you've mastered them.

Addictive qualities 65%
If you've a good memory for alien flight formations and fire patterns make that 85%.

Value for money 70%
A fair game at a fair price.

Overall 70%
If you like yours fast and furious with a squirt (make that a dollop) of frustration you'll enjoy this.

Z



Rino
£4.99 cass
joystick only

A PLACE in the unknown where the shroud of death awaits in the land of the alien . . . That's the sum of the scenario and it's a touchingly simple introduction to a good old zap.

A couple of years ago, just at the height of the scroll-across-the-mothership type of game that reached its peak in Uridium, Z was released by Alligata on the Commodore.

Then it was a superb game on a very sought-after theme. Now it is still superb, but just a little past its prime, hence the bargain price.

There are three screens. The first is set above the alien planet, and you can move your ship in eight directions, zapping all the way.

At first confusion reigns, as all sorts of sprites troll around the cluttered screen. There seems to be an awful lot of obstacles to bump into, and your energy is drained with each encounter.

But with a bit of practice, you'll be able to sort things out – meteorites and bullets zip around at random (I think), and there are good scores to be had for knocking them off.

Meanwhile, a squadron of alien droids wanders diagonally across the screen and if you can avoid their missiles, you can pick them off one by one.

Once you've polished off 10, a sort of flying energy capsule is created. Catch this, and you'll be awarded with a bomb that you can lob towards the force field of the Hyperspace Transport Unit. Flying through the gap created will get you on to the next screen.

This is the countryside battle zone – more perils, and a different type of alien; and then on to the lunar landscape, with mother-ships and extra lives to be won.

The final encounter is night-flight, with all the aliens and the ultimate enemy – the alien control ship.

The action and mindless violence never let up. High scores are there for the taking, and it is this which will keep you coming back for more. At the asking price, Z is the A-Z of space zap'ems.

Tony Bridge

Presentation 50%
The joystick only option is a restriction.

Graphics 70%
Colourful and smooth.

Sound 50%
Nothing special.

Playability 80%
Ok for a quick blasting session.

Addictive qualities 82%
It's got a lot going for it.

Value for money 75%
Come on down the price is right.

Overall 75%
A good blast.

BLACK MAGIC

Datasoft
£9.99 cass,
£14.99 disc
joystick or
keys

DESPITE the sunny name, Marigold is not a happy place – well, how could it be, what with Zahgrim the Grim holding sway and doing evil deeds all around the place.

Your master Anakar, the last good wizard left in Marigold, has recently lost his life to the roaming demons, so it has finally come down to you to save Marigold.

The simple task ahead is to track down the six magical eyes of Anakar scattered by the evil Zahgrim. This isn't going to be easy of course, what with all the usual array of monsters infesting the scrolling landscape.

You start with nothing but the clothes you stand up in, but soon you'll come across chests of arrows, spells and stocks of food.

Your main adversaries at this point are the death-spitting plants – you can duck to avoid their fatal saliva, or shoot off a quick arrow or two to neutralise them but there'll always be more.

As soon as you pluck one of Anakar's eyes (yeuuch), all the other slimy, slithering, gibbering monsters will rise from the ground and come after you.

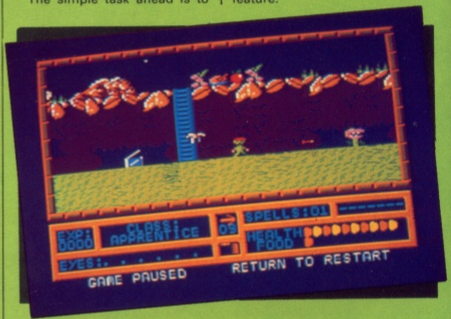
As well as the arrows, you can use your spells to avoid the monsters. As you gain experience points, you progress through the levels of wizard and sorcerer to necromancer. At each stage more spells are available.

The occasional Troll rocks around and will offer you gifts of extra spells or arrows in exchange for valuable food. A Roc also trolls around and may pick you up to drop you somewhere else.

This can be a boon if you're trapped by monsters, or a disaster if you're dropped from the frying pan into the fire.

The graphics aren't great by today's standards – there's more than the look of stickman about some of the monsters, and sound is confined to spot effects only as you pick up objects and so on.

As the game relies on building up experience, it would be nice to have a save game feature.



Despite all this, the gameplay is totally addictive and will have you coming back time and time again..

Tony Bridge

Presentation 60%
Good instructions. Colourful title screen. Let down by the lack of a Save game feature.

Graphics 50%
Not brilliant.

Sound 45%
Negligible – not worth the effort.

Playability 70%
Plenty to do.

Addictive qualities 90%
I couldn't leave it alone.

Value for money 40%
Overpriced.

Overall 70%
If this is your cup of tea, it's a fun game.

ROAD RUNNER

US Gold £9.99 cass, £14.99 disc, joystick or keys

BEEBEEP, wooooossh! Road Runner has arrived from the arcades, hotly pursued by Wile E. Coyote, eager for a dinner date. This must be one of my all-time favourite cartoons, narrowly beaten by the original Tom and Jerry. Though not the greatest ever, the arcade game isn't bad either and it translated well to the Atari ST.

You have to pilot RR along a twisty desert road which scrolls past while Wile E. Coyote gives chase. Along the way are heaps of corn to be eaten for points and the occasional bus or fireball can turn your feathered friend into sandwich filling.

RR can outdistance an unassisted coyote who soon disappears off the right side of the screen, only to come zooming back a few moments later on a jet-powered skate board. This makes him difficult to avoid at the best of times and well nigh impossible on the narrower sections.

On some screens he's equipped with one of a rocket, pogo stick, autogyro and probably other things as well if you make it far enough. When RR gets caught Wile E. carts him back a way and a life is lost – a bit tame, the programmers should have made a meal of this bit.

The Amstrad version looks similar to the others but only one layer scrolls and the playing area is a window set in a wide border. The graphics are bright and cartoonish but there's a lack of attention to detail. For instance, on a screen where the two characters can get burnt, in the best traditions of the art they instantly turn black from head to toe. Great, but you get the same effect when they do anything else suicidal like stepping off the edge of a cliff.

After a couple of evenings spent playing it I got fed up. The infectious sense of fun in other versions seems to have gone rather flat. Perhaps it could have been more inspiring if they'd spent another month on it and hadn't tried to be so faithful to the original, with all the compromises that inevitably entails. As it is, try before you buy.

Andy Jackson

Presentation 55%
No definable keys but you can start the game on the section where you last died.

Sound 20%
Just a few feeble FX in this preproduction version.

Reasonably close to the original, but could have been better.

Addictive qualities 50%
'Fraid not.

Playability 50%
Too easy in places but other parts seem designed to frustrate.

Value for money 40%
Lacks staying power.

Overall 55%
Not this month's best buy.

KILLER RING

Reaktor/ Ariolasoft £4.99 cass, joystick or keys

WHEN you're tired of playing serious games or working out complex riddles, or you've finished typing out your latest novel on your word processor, you sit back from the steaming keyboard and you start to dream of how nice it would be to go back to the simple straightforward games of yesteryear.

That's what this latest release from Reaktor is. Remember Space Invaders or Galaxians? This is a cross between the two and at the price it's not bad!

Your base is a kind of soap bubble, and the object is to shoot anything and everything. You can move over the whole of the lower two thirds of the screen and the laser beam when fired emits from the top and the bottom of your bubble.

So once the invaders have started to move around the screen it is possible to hit two at the same time, one above and one below. Naturally they don't sit passively, but drop bombs on you.

Opening screens start off easy of course and get progressively harder. You need quite a good aim to hit the invaders and on later screens when you must hit other bubble types, a direct hit at the centre is the only way to eliminate them.

Also on later screens, strange objects (which look like squashed marshmallows) move around in fours and these must be eliminated too.

The object is to reach the spaceman, once he's eliminated its back to the start again – only harder of course.

There are two difficulty levels – under your control from the opening title screen. The easiest is a normal shoot-'em-up; the hardest enables a moving force field line that rotates from the top of the screen to the bottom throughout the game. You are unable to shoot through this so must move above or below it in order to hit the invaders.

I found the game a bit slow and a little easy to reach the Spaceman.

Paul Shearrard

Presentation 88%
Easy to use and understand.

Graphics 50%
Nothing special.

Sound 50%
Just spot effects or music (the choice is yours).

Playability 90%
Easy to play.

Addictive qualities 55%
A good mixture of Space Invaders and Galaxian – although perhaps only for high-score addicts.

Value for money 50%
For a range of cheap games for summer – it could be cheaper.

Overall 63%
Not bad, but nothing to rave about.

MASK

Gremlin Graphics £9.99 cass, £14.99 disc, joystick or keys

IN Gremlin's latest release you assume the role of Matt Trakker as he sorts out a spot of bother at Boulder Hill. This is a tie-in with Kenner Parker Toys's Mask characters, of which I must confess complete ignorance.

The scene is set by a comic strip forming part of the instructions. To cut a long story short, Venom has attacked Matt's base at Boulder Hill and after dropping a time bomb, a vortex has opened in the time-space continuum.

Mask agents and their accoutrements have been scattered throughout time and it's your job to find them and nail Venom.

Part one takes place on Boulder Hill and it's thick with an unending supply of armoured opposition. You are in Thunderhawk, one of those Ferrari cum jet aircraft convertibles.

The view is from on high and the playing window scrolls smoothly as you move. Thunderhawk can fire missiles and plant bombs which can be picked up at various points. Now pay attention men, because the next bit gets complicated.

On every screen, apart from the first where there is only one, two hidden agents must be rescued. The process for locating an agent goes like this:

Find the scanner and the two masks. Collect the scanner keys, not all of which are useful but only six can be held at once. When you've found at least four try and assemble them into the letter S.

If they don't, drive round swapping keys for others not collected until they do. When you've got an S the scanner will be activated and it will lead you to the agent. Got that?

As you scoot round, the enemy will inflict damage on Thunderhawk. Too much and you're dead. Repair kits will patch up the damage but there are only a limited number.

Later parts, which I couldn't reach, are in the future, prehistory and at the Venom base which must ultimately be destroyed.

Overall, it was too much like hard work to be real fun. As I played my feeling was one of frustration – the level of difficulty varies too much from one game to the next.

If you buy this game you'll probably find it addictive enough to entertain for a week or two but I wouldn't make it my first choice.

Ian Sharpe

Presentation 50%
You have to physically disconnect roms and there's no redefinable keys.

Graphics 75%
Bright and colourful with smooth scrolling.

Sound 50%
Skimpy.

Playability 60%
Tricky handling lets it down.

Addictive qualities 70%
Yes, but they've done better.

Value for money 50%
Should have been £3 cheaper.

Overall 65%
Competent, but doesn't stand out.

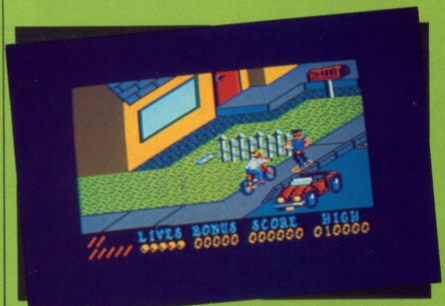
PAPERBOY

Elite £8.95 cass, 14.95 disc, joystick or keys

BMX at the ready, it's time to start your new job as the local paperboy. This latest offering from Elite is a cracking conversion of the arcade smash hit.

Your boss, a rather unscrupulous businessman, has instructed you not only to deliver newspapers to his customers, but to do as much damage as possible to the property of non-customers.

As the non-customers' houses lack mailboxes you are forced to throw the papers through their windows!



Paperboy is a diagonally scrolling extravaganza, and the characters used are highly detailed and brightly coloured. Unfortunately the sound is not of the same standard, – the game is played in absolute silence.

Thinking there was a fault on my 6128, I removed all peripherals and tried again, not a peep. I even ran it on a friend's 464.

A phone call to Elite confirmed there was no sound.

Paperbag brimming with ammunition, you cycle along the pavement as fast as possible. Stab the fire button at the right moment to hit the mailbox and "250" will flash on it.

Hitting the door scores 100 points, putting it through the window gets you 50 points – just don't forget that missing the mailbox loses you the customer. Once this happens you can't get him back again – drastically reducing the number of points you can score. Lose every customer and you join the three million in the dole queue.

It's tough on the streets, especially when you're being hassled by drunks, mad dogs, stray hovermowers and punks on skateboards – that's just on the pavement!

If you're forced into the road watch out for the grates, oncoming cars and crossroads. As your skill and confidence increases you can earn extra points by belting these hazards with a copy of the Sun.

If you make it to the end of the paper round you are given a shot at the BMX park. This consists of a series of dirt tracks, jumping ramps, ditches, walls, and targets – a chance to race against the clock while practising your sharpshooting.

Paperboy has all the makings of an excellent game – it's fast, it's exciting and incredibly addictive.

Nev Astly

Presentation 89%
A multitude of options.

Graphics 91%
Cartoon style graphics and animation.

Sound 0%
Not even a bleep!

Playability 90%
The more you play, the better you get.

Addictive qualities 89%
A very refreshing game to play.

Value for money 85%
Get your hand in your pocket.

Overall 89%
But for the lack of sound it would have been an Accolade.

▲ JOIN THE CLUB · SCOOP THE SAVINGS ▲

THE OFFICIAL AMSTRAD USERS CLUB

BY JOINING the Official Users Club you can buy a whole range of new software at fantastically low prices to make your Amstrad even more versatile and useful than ever.

By taking advantage of the savings you will recoup your membership fee in only weeks! Look what else you get:

- ▲ The widest range of branded Amstrad approved products stocked in depth all at substantial discounts of up to 15%.
- ▲ HELP HOTLINE for any technical advice you need.
- ▲ 12 MONTHS FREE subscription to Amstrad Computer User.
- ▲ 24 hour telephone ordering facility.
- ▲ FREE monthly newsletter, packed with hints tips and reviews.
- ▲ Exclusive products for club members.
- ▲ Privileged previews of new products.
- ▲ Big prize competitions.
- ▲ Products delivered direct to your door.

CLUB MEMBERS ALWAYS SAVE

▲ CPC OWNERS ▲

We always have in stock a large selection of products at highly competitive prices including, the complete AMSTRAD range, dozens of ARNOR products, the Top 20 games, plus a huge catalogue of bargain games, and exclusive special offers at discount prices.

▲ HARDWARE & UTILITIES ▲

When it's time to widen your computing horizons — the club has printers, modems, leads, interfaces and complimentary software at incredible discount prices.

RING FOR DETAILS

FREE

When you join; either 2 top tape games or 1 game on disk. Choose from the extensive list which comes with your welcome pack!

ORDER ACTION LINE – DIAL 091-510 8787 NOW!

For extra-fast attention, order now by phone quoting Access or Visa number.

Or fill in the coupon below.

OFFICIAL AMSTRAD USER CLUB, ENTERPRISE HOUSE P.O. BOX 10, ROPER STREET PALLION INDUSTRIAL ESTATE SUNDERLAND. TYNE AND WEAR SR4 6SN

▲ HOW TO JOIN THE CLUB ▲

Simply fill in the coupon and return it to us at the address shown together with your remittance. We'll send you your special membership card and a giant list of games from which to make your FREE choice.

FOR OFFICE USE ONLY

Yes, I want to enjoy the benefits of Amstrad User's Club Membership — please enrol me today and send my welcome pack. I enclose cheque/PO. or credit card No. for £19.95.

Please send all details to: CPC 5

NAME: _____

ADDRESS: _____

_____

_____

ACCESS/VISA: _____

All offers subject to availability, all prices correct at time of going to press.

POST TO
OFFICIAL AMSTRAD USER CLUB, ENTERPRISE HOUSE
P.O. BOX 10, ROPER STREET, PALLION INDUSTRIAL ESTATE
SUNDERLAND. TYNE AND WEAR SR4 6SN

Amsoft

CHOLO

Firebird £14.95 cass, £17.95 disc, joystick or keys

BEFORE I start singing the praises of Firebird's new star for the Amstrad CPC, let me tell you about my first journey inside the city of Cholo.

The bunker air was hot and stale as I pulled a chair up to the console, but I had a job to do. The city had been invaded, the inhabitants were cowering underground, and I was their last hope for freedom.

The Imager produced a spinning picture of Rizzo, a Rat-type which I could move around the city. I looked out through the droid's electronic eyes and consulted tne map. I was in the central computer building, and it was time to do some hacking.

Soon I'd located the Cyber 1 computer and logged on. This is going to be easy, I thought, as I read the password list into my droid's first rampack.

Logging off, I left the building in search of prey. Just as I got through the door, I caught a glimpse of a droid – the chase was on! The little guy certainly could move, but the Rat was faster. A few bolts from the ion cannon and he was stopped dead in his tracks, motor circuits temporarily inoperative.

Slowly I moved up on it and logged on – best not to take any chances at this stage, though it looked harmless enough. "Enter password".

Luckily I'd made a note of the passwords the first time I ran the rampack. I was allowed three tries, but they were all unsuccessful. The interface was terminated, the little droid's repair circuits made good, and it was off.

It wasn't going to be as easy as I thought. I tracked him down and gave him another good pounding with the cannon. I logged on again, tried another password and got through. The droid's name was Igor, an odd sort of name I thought as I copied the contents of my rampack into his memory, just for safe keeping. I could have switched control to Igor, but Rat was more powerful.

I left Igor and headed off in the direction of Sladeck Robots Inc, in search of something with a bit more punch. I fancied taking control of a Guard Robot with armour and a more powerful cannon.

Turning on to Bridge Street, something more useful – a Flying Eye – floated into view. Her name was Anneka and she flew like a dream – just what I needed to spy on the bunker head.

I wasn't sure how to get there, but I decided to follow the river. I didn't get her far before ion blasters started ripping across the hull and Anneka was dead before I could turn her about. She was just a surveillance droid, too slow to be any use in that sort of danger zone. I'd have to reselect the Rat and try again...

I have not been so engrossed by any game since my first encounter with the bad guys in Elite. In fact Cholo could be described as Elite II.

In Elite your objective was to ply for trade between the star systems, make money and blast anyone who didn't agree. In Cholo your goal is much more definite and the execution is more subtle too: To free yourself and the inhabitants of the city.

To help you there is a host of slightly misguided robots. And the closer you get to finishing the game the dafter they become. In one notable encounter, a guard was so bored of shooting at me that it rammed my poor little droid into the river! Nice touch that.

In Cholo, as with every adventure game worth its salt, there always seems to be just one more obstacle around the corner, and there are plenty of corners here. The control keys are numerous with each robot having a different set.

I liked Cholo, though the sound, is a little poor. The 3D effects could be better too, as large buildings have a nasty habit of appearing right in front of you, though this does not detract from the game much and is little more than a minor irritation.

The manual is clear and concise, but due to the nature of the game, it doesn't give very much away. The novella at the back makes interesting reading.

In conclusion, I think it's overpriced for the average game-player, even with all of the extra material. But for a game that is possibly destined to become another classic it may be worth it.

The scene is set, the lights are down and the inhabitants of Cholo await you.

Mark Smiddy

Presentation 90%
Novella, instructions, map and save game feature, but no definable keys.

Graphics 75%
Fair, but not the best wire frame I've seen.

Sound 40%
Just a few spot effects.

Playability 90%
Excellent, one to get lost in.

Addictive qualities 90%
I couldn't keep away from it.

Value for money 60%
£15 for a cassette? Too much!

Overall 80%
Could have been a real winner at a more reasonable price.

GAME OVER

Imagine £8.95 cass, £12.95 disc, joystick or keys

GREMLA is the powerful, vivacious, but deranged ruler of the galaxy. For many years you, the faithful Arkos, have lead her armies to countless victories.

Recently you have begun to find her unquenchable thirst for power disturbing, and so decide to make a stand against her. Will it be Game Over Gremla or Adios Arkos?

If Arkos was so clever, why didn't he get the armed forces on his side before moving against Gremla? The game would have been much easier to play.

As it is, he has to battle his way across a planet that's crawling with Gremla's minions and metal monstrosities, find a spaceship and fly to planet number two. The fighting then resumes, but with much meaner minions. Who'd be a hero?

The planet Hypsis consists of 20 screens, arranged side by side, which are travelled from left to right. Quite unusually for this type of game you are allowed to run back to previous screens should you wish to.

You are armed with a laser pistol and 10 grenades. Loosen up your trigger finger because there's no limit to the number of times you can fire the laser.

The grenades are lobbed in a graceful arc and have a blast rating four times that of the laser. The significance of this becomes apparent as you reach the higher levels.

If you're to survive for any length of time you'll need to use the contents of the red and white barrels found on most screens. A barrel is opened by shooting it three times – not as easy as it sounds as you'll be under heavy fire from all directions.

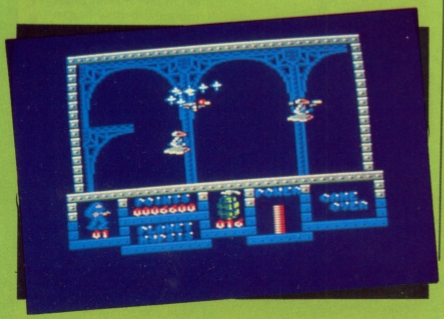
Barrels contain one of five items. Grenades increase your ammo stocks by three, "POW UP" boosts the effectiveness of your laser and also increases the range of your grenades.

Catching a floating heart recharges your energy banks. The energy shield enables you to walk through aliens and laser fire unharmed, which is a real opportunity to give the baddies some stick!

The only bad item is the mine: Step on this and you blow yourself to pieces.

Gremla's minions come in six different flavours, and that's just on the first planet. The guardian robots are airborne aliens who swoop at you, firing their lasers as they do so. These are little more than a nuisance and are destroyed with a single shot.

The Laser Shooters are a far more powerful adversary. Similar in design to a lighthouse they fire a continuous volley of laser fire very accurately



They can be de-activated with five shots to the head, but make sure you've got a fully charged power pack before deciding to take one on. It's much easier to run through the beast and forfeit the three units of energy this collision incurs.

Once you've got past the second Laser Shooter you'll find yourself out in the countryside, a beautiful tree-lined backdrop with metal platforms in the foreground. Here you encounter for the first time green monsters which materialise from nowhere and fire high-powered lasers.

Luckily they are slow, cumbersome and easily destroyed. They are often accompanied by spaceships, which are only a problem when you're on a raised platform – the rest of the time they fly over your head.

When you reach screen 11 you'll encounter the first of the mega-monsters. The Giant Orko can sustain 40 hits before he dies, and it's about now that you wish you hadn't squandered your grenades. There are more big guys on screen 19, three to be precise, each one requiring 20 hits.

Assuming the gods are with you and you make it to screen 20, you can board the spaceship and fly to the Sckunn. This planet differs from the last in that the screens are arranged both horizontally and vertically.

The grenades have been replaced by a super blaster which will destroy anything in its path, but has a maximum of 25 shots.

Sckunn is divided into forest and palace, and has just as many monstrosities prowling its lands. Upon reaching the final screen you come face to face with the Giant Guardian; this beast requires a staggering 75 hits before it is reduced to rubble.

Death is quite a pretty affair. Zapped into your constituent atoms, you swirl from the screen in a blaze of energy.

Assuming you haven't lost all three lives you'll be reincarnated on screen one. You must then fight your way back to the front lines and continue your struggle.

Most monsters are still there, but any Laser Shooters you immobilised earlier remain inactive.

Game Over is an immensely challenging one-man-against-an-army type of game. It responds quickly, looks brilliant, and fully deserves the Accolade award.

Jon Revis

Presentation 75%
The lack of both a pause button and a high-score table was most annoying.

Graphics 92%
Characters are small, but perfectly formed.

Sound 76%
No tunes and minimal sound effects.

Playability 92%
The ability to think while in full flight is essential.

Addictive qualities 91%
I know I'll beat it next time!

Value for money 89%
Can't fault it.

Overall 91%
Down with Gremla!

CONVOY RAIDER

Gremlin Graphics, £9.95 cass, £14.95 disc, joystick or keys

CONVOY Raider puts you at the helm of an advanced naval ship policing your country's coastline, armed with the latest in up-to-the-minute, lethal defence systems.

It consists of half a dozen different screens, all representing a facet of the ship's functions. These can be selected using a simple icon system that can be slow but is simple to use.

First, there is the movement screen showing you the coastline and sea on which you plot your compass heading and speed (0-31 knots).

Second, there's the radar screen which gives you positions of enemy craft and third, there's a pause screen which displays your points score and your ship damage. Finally, there are the three weapons systems around which the game essentially revolves.

Each system deals with a particular enemy threat (be it sub, ship, or plane) and is an individual action game in itself. Of the three, the Exocet missile is the hardest to control but all, though quite realistic, are fairly easily mastered.

With control of these weapons, an idea of the enemy's position, and knowledge of the local geography you are ready to patrol the seas and dispatch any malevolent craft to a watery grave.

The graphics are very good. Yes, you may have seen better sprites, more colours or more exciting effects, but the makers have sought to attain realism, something which they have achieved with ease.

The sound doesn't break new ground, yet it adds greatly to the atmosphere created – from the echoing pings of the radar screens, to the ship-shaking explosions caused by the enemy.

The only real drawback is one that saps Convoy Raider's addictive qualities – there seems little long term point to the game other than the sheer mass accumulation of points.

After getting to grips with the various weapons systems you seem to be left in the lurch with few other considerations, such as fuel, and no apparent ultimate goal.

While this would be fine for a basic shoot-'em-up effort, for a program that purports to be a strategy game it is a little disappointing.

All in all, a refreshing, interesting game just lacking that killer punch.

Clive Gifford

Presentation 80%
Good loading screen, straightforward controls.

Graphics 92%
Extremely effective.

Sound 83%
As with graphics, not stunning but added to game greatly.

Playability 86%
Smooth logical control and movement – a little slow between screens.

Addictive qualities 66%
Low strategic element and easily mastered actions lose a little here.

Value for money 69%
Not bad.

Overall 77%
Well-worked, interesting alternative.

WIZBALL

Ocean/ Imagine, £8.95 cass, £14.95 disc, joystick

OH me, oh, my!. This could have been so good. Actually it's not too bad, but it took me two hours to realise there was something wrong with the instructions, not my trek through the easy levels" syndrome.

Actually, none of the levels are particularly easy; the game is quite a challenge, and there are several surprises.

I've also played this game on the Commodore 64 and the Amstrad version, I'm afraid, suffers in comparison.

Niggles: As you move left and right the screen is updated, it doesn't scroll. Three times Wiz got stuck on a floating

computer. Okay, so I'm slow.

The evil Zark has rendered Wizworld into monochrome and ultimately your task is to put all the colour back.

You control Wiz – a ball with a face on it – and you have to shoot the baddies. Some of the baddies, however, turn into green pearls and if you pass over them, seven icons across the top of the screen are highlighted in succession.

Selecting an icon gives you more control (stops you bouncing continually up and down), bigger weapons, smart bombs, a shield and a cute mini-ball called Catelite which follows you around.

To select a flashing icon you waggle the joystick violently from left to right – don't press the spacebar as suggested in the instructions – it doesn't work!

When you shoot the nasties some of them turn into coloured droplets which you must collect with Cat. As you do you gradually fill up three cauldrons at the bottom of the screen with colour. You are told how many aliens remain on a screen which gives you an idea of how badly you're doing.

The same baddies don't always appear on the same screen at the same time which keeps you on your toes and prevents the "another (yawn) Saturn-like sphere and wouldn't budge. And there is no multi-player version hinted at in the instructions. The 64 version plays better, too.

It's still a good game, though.

Ian Waugh

Presentation 10%
Why don't they teach wizz-kid programmers to write instructions?

Graphics 80%
Nice shades of grey. Atmospheric.

Sound 10%
No music at all. It deserves more than a few beeps.

Playability 68%
Takes a while to get used to and the non-scrolling screen makes it easy for baddies to sneak up on you.

Addictive qualities 80%
It's still quite addictive. Try switching off.

Value for money 80%
If you've been itching for Wizball to arrive on the Amstrad – here it is. Buy it.

Overall 80%
A good game but it should have scored 100%.

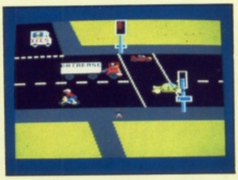
Learning CAN be fun

- Use your Amstrad to teach and amuse your children at the same time.
- Three packages crammed full of educational programs – and so easy to use!
- Each program has been educationally approved after extensive testing in the classroom.

ONLY £5.95 tape £8.95 disc

Ages 2-5

Alphabet
Colours
Counting
House
Magic Garden
Matchmaker
Numbers
Pelican
Seaside
Snap



PELICAN
Teach your children to cross the road safely at a Pelican crossing

HOUSE
Select the colours to draw a house – hours of creative entertainment

Ages 5-8

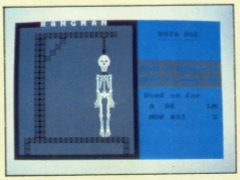
Balance
Castle
Derrick
Fred's Words
Hilo
Maths Test
Mouser
Number Signs
Seawall
Super Spell

NUMBER SIGNS
Provide the correct arithmetic sign and aim to score ten out of ten

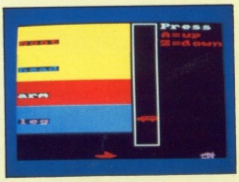
BALANCE
Learn maths the fun way. Type in the answer to balance the scales

Ages 8-12

Anagram
Codebreaker
Dog Duck Corn
Guessing
Hangman
Maths Hike
Nim
Odd Man Out
Pelmanism
Towers of Hanoi



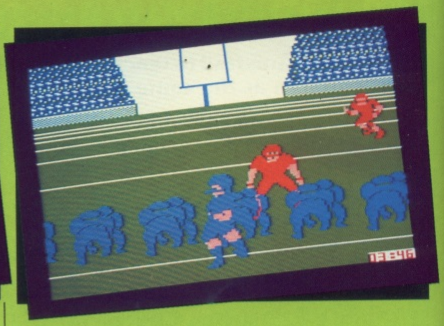
HANGMAN
Improve your child's spelling with this fun version of the popular game



ODD MAN OUT
Find the word that does not fit – before your time runs out

TO ORDER, PLEASE USE THE FORM ON PAGE 61

CHAMPIONSHIP BASEBALL/FOOTBALL/BASKETBALL



Gamestar/ Activision £9.99 cass (each), £14.99 disc (each), joystick or keys

TV companies like Channel 4 have done a great deal to bring major American sports such as football, basketball and baseball to the attention of the British viewing public.

Gamestar is cashing in on this interest by releasing three new games, each devoted to one of these sports.

The games, although sold separately, have several features in common. All can be played by one or two people, using joystick, keyboard, or a combination of both.

Another similarity is with the instructions, these are very comprehensive. Basketball came supplied with instructions in French and German only, so it was time to dust off the old 'O' level French and start to lance le ballon dans le panier!

The baseball park is the setting for the first event of the day. As opening batsman you stride purposefully to the plate. It is at this point that you realise how clever the program is.

Your entrance is viewed from above – a panoramic shot of the whole park. Yet as the pitcher prepares to loose the ball, the right hand side of the screen changes to show a large shot of both you and the pitcher.

You time your swing by observing both the aerial view and the full-size display.

Depending on the state of the game, you control pitching, batting, running, or fielding. As pitcher you have a range of eight shots to choose from, while the batsman must rely on judgement and timing.

The runner can advance, retreat, or even dive for a base. Similarly with the fielder – having stopped the ball he has to make the split-second decision which base to throw the ball to.

Good use of graphics and a large helping of skill make Baseball my favourite of the three.

It is now time for the modern day gladiators to take the field as we begin a bruising game of GFL Championship Football – you versus the computer.

During loading you are asked to select both teams from four divisions of eight. By selecting yourself a good team and the computer a set of turkeys, you can gain an edge. If you consider this to be cheating, think again – I got pummeled by the turkeys!

Each game is divided into four periods of four or seven minutes. The mega-characters used in baseball are back once more, on a full-time basis too – there's not a tiny player in sight.

The computer kicks off and the ball sails high through the air as you, the receiver, try desperately to get your hands underneath it.

With the ball safely in your hands you charge up the field, trying to gain as much ground as possible. Weaving left and right avoiding the diving gorillas, eventually your luck runs out and you come face to face with 300 pounds of accelerating muscle.

From here on the game takes on the usual format – the team with the ball has four attempts (or downs) to gain 10 yards.

Championship Football is challenging, both tactically and manually, but it hasn't the addictive qualities of Baseball.

The final game of the trilogy is Basketball, a game for the seven footers out there.

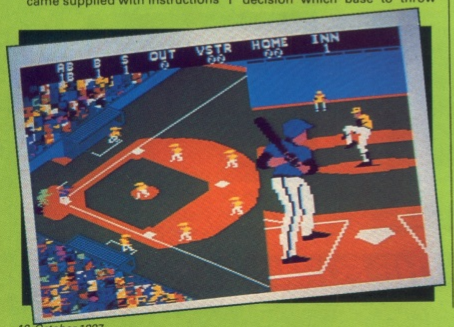
The scoreboard and one half of the court are displayed on the screen. Skipping merrily around the court are four players, two of them are yours and two are not.

You control one of your two players, and there is no facility to switch control to the other. This isn't strictly necessary as he shoots automatically whenever you pass him the ball.

If you have difficulty playing games which require a great deal of skill Basketball may be of interest to you – it requires very little indeed.

It failed to hold my attention for more than half an hour and I soon found myself reaching for the Baseball tape again.

Nev Astly



Presentation 89%
Very full instructions, even the French ones!

Graphics 85%
Large characters are used whenever possible (except Basketball).

Sound 65%
None of the games use sound to any great effect.

Playability 88%
This score is for Baseball, Football's not too bad, but Basketball is a bit of a duffer.

Addictive qualities 83%
A thorough read of the instructions is invaluable if you are to get the best from any of the games.

Value for money 85%
Baseball . . . definitely,
Football . . . possibly,
Basketball . . . no chance!

Overall 88%
Purchase in the Value for money order.

DEATHSCAPE

Starlight £8.99 cass, £14.99 disc, joystick or keys

SUBTITLED The Warzones of Terra, this game takes you into the future when political disputes are settled by gladiatorial combat. The arena is a network of tunnels in which the two combatants, given one ship each, engage in battle.

This time it's the Sol Federation and the treacherous Vargs who must fight it out. Representing the former, it's your job to engage in deadly combat. This would have been a fair challenge but for the fact that the Vargs have sent a whole range of ships to destroy you.

The main screen displays the view from your cockpit. The instrument panel shows the usual equipment: Shield status, fuel gauge, proximity indicators (to show whether you are touching the tunnel wall) and so on.

At the top of the screen a scrolling window transmits important messages, not least of which is your score. At the bottom of the screen two hands imitate the movement you are probably making with your own joystick.

With a choice of four speeds, you travel through the Deathscape tunnel, confronting the range of Varg ships out to get you. At various points along the tunnel you can turn left or right (and even up and down on occasions).

To get an overview of your progress you must access the grid which shows your position, and that of fuel dumps, generators and fortresses. The destruction of these results in extra missiles and fuel for your own ship.

The fortresses are particularly important as each of them contains a special code. It is only by destroying all ten and collecting their codes that you can have a shot at the Varg mothership.

As a shoot-'em-up Deathscape is disappointing as you are forced to zap and blast without discrimination or any special dexterity.

The game's strategic element does compensate for this a little, though not enough to make The Warzones of Terra much more than bright and colourful.

Tony Flannagan

Presentation 65%
Definable keys, on/off music, shame about the verbose playguide.

Graphics 70%
Colourful 3D, loved the hands at the controls!

Sound 63%
Close your eyes and it's a bit like Custer's last stand.

Playability 60%
As a shoot-'em-up it gets very monotonous; the strategy helps.

Addictive qualities 63%
Not one that's going to give you any sleepless nights.

Value for money 60%
If money's no object yes. Otherwise, think about it.

Overall 61%
There have been too many games like this recently. Yawn, yawn.

QUARTET

Sega/ Activision £9.99 cass, £14.99 disc, joystick or keys

SPACE colony 619 has been captured by terrorists. An all out attack would result in the deaths of many hostages – this is a job for.... the Quartet!

Sounding very much like a folk group, Lee, Joe, Mary and Edgar are the foremost anti-terrorist squad in the galaxy.

Each team member is a specialist in one particular field. Edgar is a powerful jumper, Lee is quick on the draw with his wide beam laser, Mary is the team's bazooka expert, and finally there's Joe, a guy who makes Carl Lewis look like a non-starter.

The game's preliminaries require you to select one or two members of the squad for your assault upon the colony. Any combination of joystick and keyboard can be used for control.

To complete a level you need to fight your way past numerous defence droids and locate the controller robot. Several well placed laser blasts vaporise the robot, leaving a key in its place. Just grab it and head for the exit – easy!

In order to relieve the inevitable boredom you will occasionally encounter a bouncing ball. Catching one which displays your initials will boost the power of the gun you are carrying.

If they're not your initials, shoot it and they will change. Other goodies include shields for temporary protection, clocks to immobilise the droids and jet packs for better manoeuvrability.

The standard of the sprites is very disappointing. They are all simple, single colour designs. Minimal sound is used throughout the game, nothing so grand as a title tune, just the odd bleep when you fire a gun.

Actually the game is far too easy. The first time I played it I got straight through to level 13, and I would have gone further were it not for a tactical error which necessitated my pressing the abort button. There is a total of 15 different levels through which you cycle continuously.

I suggest you play it wearing a blindfold while your partner taps out instructions in morse code.

Steve Brook

Presentation 75%
Wide variety of options, but no high-score table.

Graphics 55%
The backgrounds are adequate, the sprites disastrous.

Sound 42%
To say the effects are minimal is being kind.

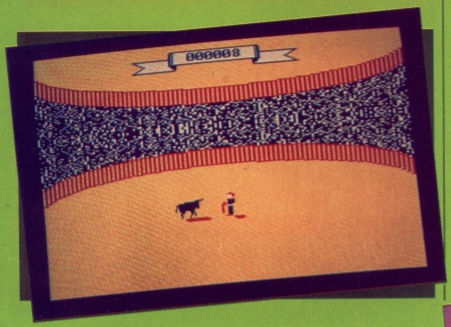
Playability 36%
Anyone with an ounce of skill will find the game too easy.

Addictive qualities 32%
None that I can remember.

Value for money 35%
This should be a £1.99 budget game!

Overall 48%
Very mediocre by today's standards.

RAGING BEAST



Firebird Silver £1.99 cass, joystick and keys

AT first Raging Beast sounds like yet another combat game, but in fact it's fairly original. I presume it was originally titled Ole, since this is emblazoned across the loading screen.

As if that were not a sufficient clue, the instructions spell it out: The game casts you as a matador in Plaza del Toros.

Your brief is clear – to last long enough in the ring with, wait for it, Alfonso the bull, so that the crowd throw you a loop with which you are supposed to lasso the Raging Beast.

Sounds easy? Well, no matter how many space invaders you may have destroyed in your time, this here bull is not too prone to defeat.

I must confess I have still not managed to succeed at this, and I consider myself a reasonably hardened game player.

The demo mode is quite good; there's some, scene-setting music which gets the adrenalin pumping before play starts, and several demo screens. One niggle is that it is far from clear when the game actually begins.

Still, what of game play? Graphics are primitive, and nowhere near the quality of many current budget offerings.

Somehow it's hard to be frightened by a sprite about two character spaces high by three long. It might have been more convincing if there were not so much empty space on the screen – but you and Alfonso are alone in the middle of the arena.

The sides are lined with crowds – but these are poorly drawn. This is disappointing when so many games in the past have excelled with very similar backgrounds. One of the interesting features of the Ninja-type games is the superb background graphics; not so here.

However the real drawback is that moving around is well-nigh impossible. It seems to take ages for your character to respond to both joystick and keys.

This made it hard to manoeuvre, which is needed at times even if the bull does move rather sedately. All in all, one of the definitely missable of the latest budget crop.

David Lester

Presentation 50%
Great inlay picture, clear instructions.

Graphics 30%
Small and jerky.

Sound 50%
Appropriately energetic backing tune.

Playability 25%
Very, very hard to move where you want to, when you want to!

Addictive qualities 30%
Playability and small graphics make this one to forget.

Value for money 35%
Loads of better games around, even for two pounds.

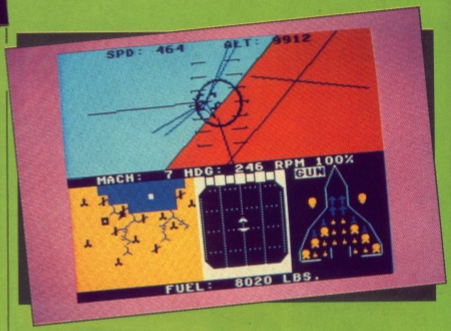
Overall 40%
Only for those with either a raging hatred of bulls, or Spanish blood.

F-15 STRIKE EAGLE

Microprose £9.95 cass, £14.95 disc, joystick or keys

THIS Microprose release places you in the ejector seat of one of America's most advanced fighter planes, the F-15, ready to embark on a choice of seven different missions over enemy territory.

A graphic display split into



REWD (radar electronic warfare display), WSD (weapons status display), HSD (horizontal situation display) and, of course, the pilot's view out over the rolling horizon gives you an overall perspective of the job in hand.

Using the joystick to control pitch attitude of the aircraft, fire guns, launch missiles and drop bombs, and the keyboard to adjust the throttle, with a bit of practice, you can soon achieve basic manoeuvrability.

After choosing your mission, your first task is to plan your flight path, using the HSD to identify your current position and the location of the primary target.

The navigation cursor has to be placed on target, and the steering cue will guide you to it. Under typical war conditions, heat-seeking missiles will attack, together with radar-guided missiles and enemy aircraft.

To summarise all the options available would probably take as long as the normal USAF training course for fighter pilots.

In terms of attempting to cram all the possible control variants into one program, Microprose has indeed succeeded.

But technical accuracy does not equal realism, and I would have thought the whole purpose of such a game would be to convey the feeling of excitement and tension that must affect F-15 pilots.

In this respect, the program simply fails to generate anything other than boredom: After a while I became oblivious to the mass of keyboard options presented and was simply content to blast away at anything that approached my craft.

With a jerkily updated vector-graphic style presentation, and the most basic of sound effects, F-15 Strike Eagle represents a lost opportunity to really put you in the pilot's seat.

Victor Laszlo

Presentation 65%
Very detailed instructions with masses of controls.

Graphics 60%
Jerky; leave a lot to the imagination.

Sound 50%
There is sound.

Playability 70%
Responsive controls and plenty of action, but too many keyboard options.

Addictive qualities 60%
Reasonable, but won't get you overheated.

Value for money 65%
Try before you buy.

Overall 50%
An average shoot-'em-up; ignore the complicated instructions.

TAS-SIGN

THE SIGN MAKER FOR THE CPC 6128 AND PCW 8256/8512

Produce and print your own signs, posters, banners and large notices to get your message across with maximum impact.

- *Four distinctive lettering styles*
- *Characters at any height from one inch to the full width of the paper*
- *Italic printing*
- *Underlining*
- *Constant or proportional letter spacing*
- *Automatic kerning*
- *Line centering*
- *Eight shading patterns*
- *Print either across the paper in the usual direction, or along the length of the paper to produce large eye-catching banners and notices*
- *Print a border around the sign, in one of the optional shading patterns if required*
- *A range of options to select print quality*

The illustrations on this page are reduced from full-size TAS-SIGN output.

Tas-sign drives nearly all dot-matrix printers including those made by:

Admate	Canon	Mannesmann Tally	Shinwa
Amstrad	Citizen	NEC	Smith Corona
Astech	Datech	Newbury	Sord
Brother	Epson	Panasonic	Star
C. Itoh	Kaga-Taxan	Seikosha	

TAS-SIGN £29.95

FOR THE CPC 6128 AND PCW 8256/8512

PC

TASWORD PC The Word Processor	£29.95
TASWORD PC Demonstration Disc	£2.00
TASPRINT PC with twenty five fonts and a font designer	£29.95

PCW

TASWORD 8000 The Word Processor	£24.95
TAS-SPELL 8000 The Spelling Checker	£16.50
TASPRINT 8000 The Style Writer (with 8 fonts)	£14.90

All prices include VAT and post and packaging

Tasman SOFTWARE

Available from good stockists and direct from:

TASMAN SOFTWARE LTD., SPRINGFIELD HOUSE, HYDE TERRACE, LEEDS LS2 9LN. TEL: LEEDS (0532) 438301

If you do not want to cut out this magazine, simply write out your order and post to: TASMAN SOFTWARE, DEPT WCP, SPRINGFIELD HOUSE, HYDE TERRACE, LEEDS LS2 9LN.

I enclose a cheque/PO made payable to TASMAN SOFTWARE Ltd OR charge my ACCESS/VISA number

NAME _____

ADDRESS _____

ITEM	PRICE
	£
	£
	£
	£

Outside Europe add £2 00 per item airmail.

TOTAL £

Telephone Access/Visa orders. Leeds (0532) 438301

VISA

Please send me a FREE Tasman brochure describing your products for: IBM/Amstrad PC ☐ Amstrad PCW ☐ Amstrad CPC ☐ Spectrum ☐ QL ☐ MSX ☐ Commodore 64 ☐ Tatung Einstein ☐ WPC

Overseas: The following distributors of Tasman products may be contacted for the address of local suppliers. Many products are supplied in translated form: FRANCE & SWITZERLAND: Semaphore Logiciels, CH-1283 La Plaine, Geneva. SCANDINAVIA: Postbox 192, 1371 Asker, Norway. NETHERLANDS: Ideasoft, PO Box 1253, 9701 BY Groningen, GERMANY: Profisoft, Talstrasse 59, 5057, DAHLEM, Deutschrott. BELGIUM: Easy Computing, Avenue Guillaume Lehman 30, 1160 Brussels. PORTUGAL: Intersoma, Campo Grande 28A4, 1700 Lisbon. AUSTRALIA: Dolphin Computers, Unit 2, 7 Waltham Street, Artarmon, New South Wales 2064. NEW ZEALAND: Software Supplies, PO Box 865, Christchurch. USA: Raines International, 17620 76 Mile Road, Washington MI 48094. ITALY: Omega Soft, Via G. Pascoli 3, 24100 Bergamo. SPAIN: Ofisis Informatica, Avda. Isabel II 16-B, 20K San Sebastian.

10 LINERS

WIN up to £10!

Send YOUR 10-liners to: *Computing with the Amstrad CPC*, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.

HERE'S another selection of the best 10 liners to come our way over the last month. We never cease to be amazed at your inventiveness. Don't forget an adequately sized stamped addressed envelope if you want your tape or disc returned.

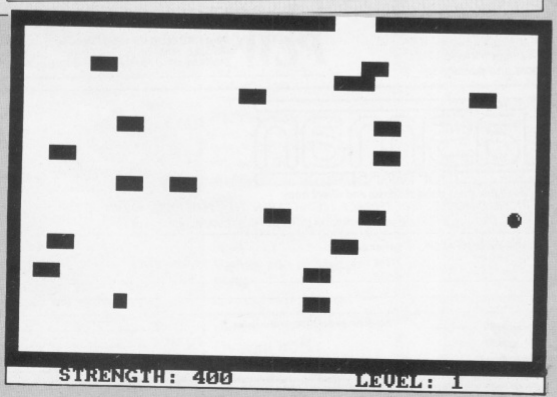
The bouncer

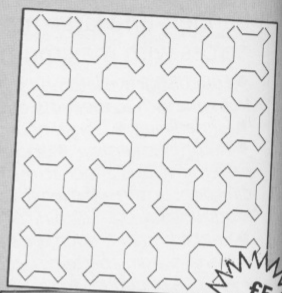
by Ken Braggles

£5 WINNER

THE object of this game is to get your ball through the hole at the top of the screen before your strength runs out. It's not as easy as it looks. Use Z and X for left and right and the spacebar to jump.

```
10 MODE 1:INK 0,0:INK 1,26:INK 2,24:I
NK 3,8:PAPER 0:BORDER 0:CLS:PEN 3:LOC
ATE 10,23:PRINT "PRESS SPACE BAR TO P
LAY":WHILE INKEY(47)=-1:WEND:FOR scre
en=1 TO 30:lstr=0
20 INK 0,0:PAPER 0:BORDER 0:CLS:PEN 3
:DIM r$(40,25):CLS:FOR n=1 TO 23:LOCA
TE 1,n:r$(1,n)="b":r$(40,n)="b":PRINT
 CHR$(143):LOCATE 40,n:PRINT CHR$(143
):NEXT:LOCATE 1,1:PRINT STRING$(40,14
3):LOCATE 1,24:PRINT STRING$(40,143)
30 SYMBOL AFTER 150:PEN 3:FOR n=2 TO
23:FOR m=2 TO 39:LET r$(m,n)=" ":NEXT
 m,n:FOR n=4 TO 20 STEP 2:FOR m=1 TO
2:mx=INT(RND*34)+3:LOCATE mx,n:PRINT
CHR$(143):LOCATE mx+1,n:PRINT CHR$(14
3):r$(mx,n)="b":r$(mx+1,n)="b":NEXT m
,n
40 ex=INT(RND*25)+5:LOCATE ex,1::PRIN
T "  ":FOR e=0 TO 2:r$(ex+e,1)=" ":N
EXT e:LOCATE ex,5:PRINT CHR$(143);CHR
$(143);CHR$(143);:r$(ex,5)="b":r$(ex+
1,5)="b":r$(ex+2,5)="b":SYMBOL 200,60
,122,253,253,255,255,126,60
50 PEN 2:x=10:y=20:xx=x:yy=y:fx=1:str
=400:WHILE dumm=0:LOCATE x,y:PRINT CH
R$(200):IF xx<>x OR yy<>y THEN LOCATE
 xx,yy:PRINT " ":xx=x:yy=y
60 WHILE (INKEY(47)<>-1)AND r$(x+fx,y
-1)=" ":LET y=y-1:LET x=x+fx:LOCATE x
,y:PRINT CHR$(200):LOCATE x-fx,y+1:PR
INT " ":LOCATE x,y:PRINT " ":WEND:IF
r$(x+fx,y-1)<>" " AND x+fx>1 AND x+fx
<40 THEN str=str-20:SOUND 1,1,10,15
70 IF y=1 THEN 100 ELSE IF r$(x,y+1)<
>" " THEN 80 ELSE FOR n=y+1 TO 23:IF
r$(x,n)=" " THEN LOCATE x,n:PRINT CHR
$(200):LOCATE x,n-1:PRINT " ":NEXT n:
LOCATE x,23:PRINT " ":y=n-1:x=x ELSE
LOCATE x,n-1:PRINT " ":y=n-1:xx=x:yy=
y:LOCATE x,y:PRINT " ":GOTO 100
80 IF (INKEY(71)=0)AND r$(x-1,y)=" "
THEN x=x-1:fx=-1 ELSE IF (INKEY(63)=0
)AND r$(x+1,y)=" " THEN x=x+1:fx=+1 E
LSE fx=0
90 IF lstr<>str THEN PEN 1:LOCATE 1,2
5:PRINT USING "    STRENGTH:####
    LEVEL:##";str,screen:lstr=str:PEN
 2
100 IF y<>1 AND str<>0 THEN WEND ELSE
 IF y=1 THEN FOR m=1 TO 26:INK 0,m:BO
RDER m:FOR n=1 TO 70:NEXT n:NEXT m:CL
S:INK 1,0:PEN 1:LOCATE 10,10:PRINT "W
ell Done-Try screen";screen+1:FOR n=1
 TO 1500:NEXT n:ERASE r$:INK 1,26:NEX
T screen:END ELSE CLS:RUN
```





Square curves

by Bill Hamley

£5 WINNER

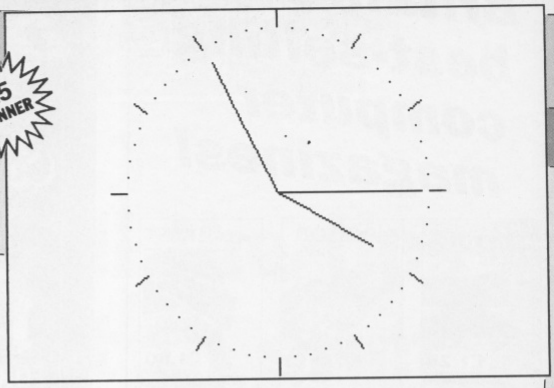
BILL has sent us a huge selection of 10 liners, all of them excellent. Last month we saw his doily drawer, now here's a clever recursive program which generates Sierpinski curves.

```
10 MODE 2:INPUT "Order ";order:IF ord
er>6 THEN PRINT"Sorry! Too Large":GOT
O 10
20 DIM f(order),r(order),t(order),b(o
rder):FOR p=0 TO order:f(p)=p:r(p)=p:
t(p)=p:b(p)=p:NEXT p
30 size=(2↑order-1)*4+2:h=INT(400/siz
e):h2=h*2:CLS:MOVE 120,h+((2↑order)-1
0)
40 GOSUB 50:WHILE INKEY$="":WEND:IF I
NKEY(67)=0 THEN END ELSE RUN
50 p=order+1:GOSUB 60:DRAWR h,h:GOSUB
 70:DRAWR h,-h:GOSUB 80:DRAWR -h,-h:G
OSUB 90:DRAWR -h,h:RETURN
60 p=p-1:IF f(p)=0 THEN p=p+1:RETURN
ELSE GOSUB 60:DRAWR h,h:GOSUB 70:DRAW
R 0,h2:GOSUB 90:DRAWR -h,h:GOSUB 60:p
=p+1:RETURN
70 p=p-1:IF t(p)=0 THEN p=p+1:RETURN
ELSE GOSUB 70:DRAWR h,-h:GOSUB 80:DRA
WR h2,0:GOSUB 60:DRAWR h,h:GOSUB 70:p
=p+1:RETURN
80 p=p-1:IF r(p)=0 THEN p=p+1:RETURN
ELSE GOSUB 80:DRAWR -h,-h:GOSUB 90:DR
AWR 0,-h2:GOSUB 70:DRAWR h,-h:GOSUB 8
0:p=p+1:RETURN
90 p=p-1:IF b(p)=0 THEN p=p+1:RETURN
ELSE GOSUB 90:DRAWR -h,h:GOSUB 60:DRA
WR -h2,0:GOSUB 80:DRAWR -h,-h:GOSUB 9
0:p=p+1:RETURN
100 GOSUB 90:DRAWR -h,h:GOSUB 60:DRAW
R -h2,0:GOSUB 80:DRAWR -h,-h:GOSUB 90
:p=p+1:RETURN
```

Watch it

by Pete Davenport

£5 WINNER



THIS horological shortie is for all the clock watchers out there. It keeps surprisingly good time so all you need now is a big, strong wrist strap and a battery pack.

```
10 REM Pete Davenport's utility for c
lock watchers
20 MODE 1:INPUT"What's the time? Hour
s,Mins :",hrs,mins:IF hrs>12 OR hrs<1
 OR mins>59 OR mins<0 THEN PRINT CHR$
(7)"Ho hum, if you can't tell the tim
e there wasn't much point typing this
 in, was  there?":FOR i=1 TO 3000:NEX
T:RUN
30 hrs=hrs+mins/60:EVERY 50 GOSUB 50:
DEG:r=178:MODE 1:BORDER 10:INK 0,10:I
NK 1,1:INK 2,26:INK 3,6:DRAW 639,0,1:
DRAWR 0,398:DRAW 0,398:DRAW 0,0:ORIGI
N 320,200:FOR i=0 TO 360 STEP 6:x=r*S
IN(i):y=r*COS(i):PLOT x,y,2:IF i MOD
30=0 THEN DRAWR x/10,y/10
40 NEXT:WHILE 1:WEND
50 SOUND 7,0,7,7:secs=(secs+1) MOD 60
:mins=mins+1/60:hrs=hrs+1/3600:mins=-
(mins<60)*mins:hrs=-(hrs<13)*hrs
60 MOVE 0,0:DRAW r*0.95*COS(90-((secs
-1)*6)),r*0.95*SIN(90-((secs-1)*6)),0
:MOVE 0,0:DRAW r*0.95*COS(90-(secs*6)
),r*0.95*SIN(90-(secs*6)),3
70 MOVE 0,0:DRAW 0.9*r*COS(90-(6*(min
s-1/60))),0.9*r*SIN(90-(6*(mins-1/60)
)),0:MOVE 0,0:DRAW 0.9*r*COS(90-(6*mi
ns)),0.9*r*SIN(90-(6*mins)),1
80 MOVE 0,0:DRAW 0.7*r*COS(90-((hrs-1
/3600)*30)),0.7*r*SIN(90-((hrs-1/3600
)*30)),0:MOVE 0,0:DRAW 0.7*r*COS(90-(
hrs*30)),0.7*r*SIN(90-(hrs*30)),1
90 RETURN
```

X-Graph

by Thorsten Konetzko

£10 WINNER

HERE'S a superb graphic design package that'll entertain you for hours. The program is written to work with a joystick but if you haven't got one, don't despair.

Simply replace the JOY(0)>=16 in line 40 with INKEY$="" '' and in line 50 change the four JOY statements into INKEY(0)=0, INKEY(2)=0, INKEY(1)=0 and INKEY(8)=0 respectively. The cursor keys and spacebar can then be used instead of the joystick and fire button.

After choosing the screen mode you'll see a summary of the commands.

Press Return to get into the editing screen and you will have these facilities at your disposal:

- B – Box. Use Fire to fix the lower left and upper right corners. You will then be asked whether you want an outline or filled box.
- C – Circle. First fix the centre and then a point on the circumference.
- K – Copies one area to another. Define the corners of the area as with the box function. Move the cursor to where you want the bottom left corner to be copied to and press Fire again.
- Ł – Line. Mark the start and end of the line. You can also use Return or Enter.
- G – Loads a screen from tape or disc.
- S – Saves screen.
- I – Changes ink values.
- P – Changes plotting colour.
- R – Sets the border colour.
- E – Clears screen.

```
10 CALL &BC02:MODE 2:INPUT"MODE >",M:
CLS:C$=CHR$(10)+CHR$(10)+CHR$(13):PRI
NT "INSTRUCTIONS : "C$"B-BOX (LOWER L
EFT/UPPER RIGHT)"C$"C-CIRCLE (CENTER/
ONE OTHER)"C$"K-COPY (LOWER LEFT/UPPE
R RIGHT/LOWER LEFT)":M(0)=20:M(1)=40:
M(2)=80:S(0)=4:S(1)=2:S(2)=1
20 PRINT:PRINT "L OR <CR>-LINE (START
/END)"C$"G-GET PICT."C$"S-SAVE"C$"I-I
NK"C$"P-PEN"C$"R-BORDER"C$"E-CLS"C$"U
SE JOY TO MOVE + 'FIRE' TO SET POS.":
CALL &BB06:MODE M:LOCATE 1,25:WINDOW
1,M(M),25,25:W$="BCKLGSIPRE":F=1:ORIG
IN 0,0,0,640,16,400
30 DEG:IF FLAG=0 THEN X=320:Y=200:FLA
G=1:GOTO 30 ELSE SOUND 1,200,10:PRINT
 W$;:INPUT ' >",Q$:Q$=UPPER$(Q$):IF Q
$="R" THEN INPUT "INK >",IK:BORDER IK
:GOTO 30 ELSE GOSUB 60:GOTO 30
40 PRINT CHR$(23);"1";:PLOT X,Y,1:PLO
T X,Y,1:IF JOY(0)>=16 THEN PRINT CHR$
(23);"0";:SOUND 1,300,10:RETURN
50 IF JOY(0)=1 THEN Y=Y+2:GOTO 40 ELS
E IF JOY(0)=2 THEN Y=Y-2:GOTO 40 ELSE
 IF JOY(0)=8 THEN X=X+ROUND(S(M)/2):G
OTO 40 ELSE IF JOY(0) THEN X=X-ROUND(
S(M)/2):GOTO 40 ELSE 40
60 IF Q$="B" THEN GOSUB 40:GOSUB 100:
O=X:P=Y:GOSUB 40:GOSUB 100:INPUT "(F)
RAME-(S)OLID";U$:IF UPPER$(U$)="S" TH
EN FOR N=0 TO X STEP S(M):PLOT N,P,F:
DRAW N,Y:NEXT ELSE PLOT O,P,F:DRAW X,
P:DRAW X,Y:DRAW O,Y:DRAW O,P
70 IF Q$="K" THEN GOSUB 40:GOSUB 100:
O=X:P=Y:GOSUB 40:GOSUB 100:K=X:L=Y:GO
SUB 40:FOR A=0 TO K STEP S(M):FOR S=P
 TO L STEP 2:PLOT A+(X-O),S+(Y-P),TES
T(A,S):NEXT S,A ELSE IF Q$="L" OR Q$=
"" THEN GOSUB 40:GOSUB 100:O=X:P=Y:GO
SUB 40:MOVE X,Y:DRAW O,P,F
80 IF Q$="C" THEN GOSUB 40:GOSUB 100:
O=X:P=Y:GOSUB 40:R=SQR((O-X)↑2+(P-Y)↑
2):MOVE O,P+R:FOR K=0 TO 360 STEP 5:D
RAW O+R*SIN(K),P+R*COS(K),F:NEXT ELSE
 IF Q$="E" THEN INPUT "CLS ";U$:IF UP
PER$(U$)<>"Y" THEN 100 ELSE MODE M:WI
NDOW 1,M(M),25,25:RETURN
90 IF Q$="S" THEN INPUT "NAME-SAVE >"
,N$:NS=N$:SAVE N$,B,&C000,&4000 ELSE
IF Q$="G" THEN INPUT "NAME-LOAD>",N$:
NS=N$:LOAD N$,&C000 ELSE IF Q$="I" TH
EN INPUT "NO,INK >",N,I:INK N,I ELSE
IF Q$="P" THEN INPUT "PEN >",F
100 WHILE JOY(0)<>0 OR INKEY$<>"":WEN
D:RETURN
```

Britain's best-selling computer magazines!

On sale NOW at your newsagents or call

Diamond-Europress
0424 430422/422928

SEE
DRILLER
AT
The UK Personal Computer World Show
23-27 SEPTEMBER 1987
OLYMPIA LONDON
Sponsored by Personal Computer World and PC Week
PCW SHOW STAND No. 3052
FEATURING
FREESCAPE™
FORGET WIRE-FRAME 3D.
FREESCAPE IS SOLID!
incentive SOFTWARE LTD
2 MINERVA HOUSE, CALLEVA PARK, ALDERMASTON, BERKSHIRE RG7 4QW (07356) 77288

DOODLEDISC DISC UTILITY

FOR AMSTRAD CPC COMPUTERS
OPALSOFT presents . . .
DOODLE DISC
DISC UTILITY

For Amstrad CPC 464/664/6128
Only £9.95 (Disc)
Full instructions included
Contains all these features
in one package:-

IDENTI-DISC * The ultimate backup-disc utility, and more than one step ahead of current protection methods. In fact we think we've thought of everything. Don't wait for your expensive, protected, commercial software to crash – back it up **now** before it's too late.
DISCED * A powerful screen based disc sector editor. Read or write anywhere on disc, including the directory. Edit in HEX or ASCII. Hide files, rename files, make files 'read only' etc.
UNERASE * Recover accidentally erased files **safely**. Displays allocation map of all erased files and highlights any re-used blocks.
ERASE * Erase files quickly with this screen based file eraser. Displays allocation map of all current files.
HEADER * Display header information for disc files.
DEPROT * Deprotect and 'LIST' protected BASIC programs.
FASTFORM * A very fast formatter which supports all the usual formats including a new BIGFORM format.
BIGFORM * Format your discs to a massive 416k (208k per side).
TXFER * A file transfer routine which supports the BIGFORM format

Please send cheque or PO for £9.95 to:-
(Overseas orders please add £1.00)
(Existing customers return disc with £3.00 for upgrade.)

OPALSOFT
Dept CWA
PO Box MT 10
Leeds LS17 8TY

All the tips fit to print

Gandalph has the answers

THERE has been a noticeable upsurge in the number of ex-Amtix readers who have written in recently with comments, criticisms and praise about this column. I'd like to welcome them and say that they should feel free to write in and raise any points they like. As regular readers will know, I welcome any correspondence and will print anything relevant.

Alf Hughes is one of these new readers and he has enclosed many excellent tips and solutions. I'd like to thank him and reply to a comment in his letter about his lack of knowledge about the solutions published in past columns.

To help ALL new readers and possibly even regulars, I am going to compile a list of all solutions and maps published since May 1986, the month I first started printing them.

I hope to compile this in time for next month's column. Should there be any maps or solutions that interest you as a result, back issues can be obtained using the order form on Page 61.

Phillip Mann has written in to say that he has seen the part solution to Mordon's Quest published earlier this year and would like help in reaching the adventure development area. The first part of the solution, which details how to reach this area, can be found in the June 1987 issue.

D. Worthington wants help with Lord of the Rings part I. He's reached the location East of the hedge where the game seems to crash. I met this location within a few minutes of starting to play the game and as far as I know this is definitely a bug. If any reader has managed to pass this point I would be interested to know.

I'd like to thank Paul Whittingham for his excellent map and solution to Dungeons, Amethysts, Alchemists 'n' Everythin'.

I published a solution to it in the September issue but have made use of Paul's map to help any adventurers still in difficulties.

Next month, I'll be starting a series of maps of the Pawn to complement Graham Wheeler's solution that ends in this issue.

READERS' HALL OF FAME

Adventure Quest – Part 2 of a solution by Glynn White. (Part 1 last month).

Go to the tower, get the eye and the rope then return to the cave and throw the eye. Tie the rope to the stalagmite – note the white dot on the roof.

Climb down to the ledge which gives way and precipitates you into an underground river. Keep trying to go up and you will eventually get on to a ledge. Get the lung fish token you find there and then keep dropping and getting it until you are told that you can't breathe. The lung fish changes your metabolism so that you can either develop gills to breathe underwater or have your lungs to breathe normally. Dropping and getting it toggles between the two states.

Go down and up until you arrive on a beach. Revert to your lungs, make sure the lamp is lit then examine your surroundings. You will discover all the possessions you threw away earlier and a net.

With the net, bag and trident only, switch back to gills, enter the water, find the church and catch the jelly fish. Make your way to the West end of the deep trench, then go down and note the hole. Anything dropped here will be carried away to a later location. Find the cave, enter it and open the bag to scare away the octopus. Drop the net and note the white dot on the wall. Go out, up and back to the shore and revert back to lungs.

With the bottle and lung fish, swop back to gills and cross the lake. Revert again to lungs and go West into the cave with the black dot. You are now in the building.

Get the keys and the medallion, refill your bottle and go back to the wadi. Drink to quench your thirst then fill the bottle with oil and return to the beach.

Taking the lung fish, keys, lamp and oil, cross the lake and light the lamp then oil and unlock the door. Drop the keys – you won't need them anymore.

Leaving everything but the lung fish, return across the lake for the trident, the medallion and the stick. Recross the lake – opening the clam on the way.

Go down to the hole noted earlier and drop the medallion and stick down it. Get the eye from the South side of the lake, drop the trident down the hole and go to the North side. Revert to lungs and fill the bottle.

With the eye, bottle of water and lamp, enter the cave. And, avoiding the arrows, find the statue and give the eye to it in exchange for a sword. Find the dragon, throw the bottle at it then discard the bottle – you won't need it again.

Turn to Page 27 ▶

CPC Classifieds

Use this space to sell your unwanted CPC products to our 100,000 readers. They're all looking for a bargain!

● Amstrad CPC 6128 colour with Pace RS232 including Commstar, Racal CP2123 Modem, Pace Nightingale modem, 256k dk'Tronics silicon disc, a selection of games/utils. £500. Tel: 0395 267883.

● DK'Tronic 256k ram expansion for CPC6128. Will exchange for Utopia eprom plus two CF-2 discs or will consider offers. Tel: 0752 346052

● CPC664 with green screen and 3" disc drive. Tons of software, books, magazines, add-ons, About 2 years old. Very good condition. £250 or nearest offer. For full details tel: 0734 345408 Andy.

● Database CPC6128 only: 45k program, 43k manual on disc, 64k data in ram disc, full professional features supplied on disc, £7. Rev. Alan Sharp, Middlefield Parish Church, 73 Manor Avenue, Aberdeen AB2 7UT.

Ads will be accepted under the following conditions:

- This service is EXCLUSIVELY for the use of private readers. No trade ads will be allowed.
- To avoid encouraging software piracy, all ads will be carefully vetted before they are accepted.
- Ads can only be accepted on this form (or a photocopy of it).
- There is no maximum to the number of words you inclúde. If there is insufficient room on the form, continue on a separate sheet of paper.
- The cost is 20p per word, with a minimum of 10 words.
- *We GUARANTEE your ad will appear in the November issue (on sale October 21) providing it is received by September 21.*

AN ADDED BONUS

Your advert will be automatically displayed on MicroLink, the electronic mail service operated in conjunction with Telecom Gold. This means it will be seen by thousands of computer enthusiasts who can send an instant response.

PLEASE PRINT THIS AD IN THE NEXT ISSUE

Cheque enclosed for £_____ (minimum £2 for 20 words), payable to Database Publications Ltd.

Name_____

Address_____

_____

_____

POST TO: CPC Classifieds, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.

TMC

نظام امستراد العربي

كمبيوتر امستراد الثماني اللغة عربي ـ إنجليزي :
هو الجهاز الأول والأكثر تطورا للغة البيسك العربية
والذي يفرد به كمبيوتر امستراد باعتباره الكمبيوتر
المرغوب والأكثر إنتشارا في العالم

● إنه حقا الكمبيوتر المثالي لجميع النواحي
التعلمية والتجارية والترفيهية

المواصفات العامة :

يمكن تحويل كمبيوتر امستراد إلى كمبيوتر مزدوج يعمل باللغة العربية بالإضافة
إلى اللغة الأصلية الإنجليزية

يمكن البرمجه بلغة بيسك العربية بالإضافة إلى لغة بيسك الإنجليزية

يمكن ترجمة سيل من البرامج الإنجليزية إلى اللغة العربية بتعديلات طفيفة

يمكن خلق برامج عربية جديدة عن طريق البرمجة بلغة بيسك العربية أو بلغة
بيسك الإنجليزية

يمكن الطباعة عن آلة الطابعة باللغة العربية الإنجليزية مباشرة وبسهولة
فالله حمل آن [TMC — 100] يحتوي على ٨ بايت بدلاً من ٦ بايت المزودة في جهاز
امستراد

TMC 100

AMSTRAD 464/6128

Amstrad Bilingual
Arabic / English
The most advanced
in both languages

9 ST JAMES'S TERRACE, NOTTINGHAM NG1 6FW
TELEPHONE: (0602) 483440
TELEX: 37369 TMC UK

ARE YOU THROWING YOUR MONEY OUT OF THE WINDOW?

HAVE YOUR FABRIC RIBBONS RE-INKED FOR ONLY £1.50

or re-ink your own DMP 2000 Printer/DMP 3000 Printer by using our kit comprising of 1 Spare Ribbon, 1 Bottle of Special Ink and Full Instructions. Each Ribbon will re-ink on average 40 times.

ONLY ~~£12.95~~ £10.00

Over 1,000 units sold already

Continuous Paper & Disc Labels	Our Price	Disc Storage Boxes	Our Price
2000 Sheets 60gm Draft	14.95	AMS 20L Holds 20 x 3" Discs + Boxes	9.95
1500 Sheets 80gm	12.95	MD 100L Holds 100 x 3.5" Discs.20	9.95
500 Address Labels	4.95	DD 100L Holds 100 x 5.25" Discs	10.95
100 3" 3" Floppy Disc Labels 69 x 70	3.00		
100 Standard Disc Labels 55 x 35	1.86	AMX Mouse + Art + Op System	~~69.96~~ 62.95
100 Cassette Labels 89 x 41 with hole	3.00	AMX Pagemaker Disc	~~49.96~~ 44.95

FREE SOFTWARE VOUCHER WITH EVERY COMPUTER

PC 1512 Single Disc Drive with 12" Mono Monitor	+ £50.00 Software Voucher £516.35
PC 1512 Single Disc Drive with 14" Colour Monitor	+ £70.00 Software Voucher £711.85
PC 1512 Double Disc Drive with 12" Mono Monitor	+ £64.00 Software Voucher £642.85
PC 1512 Business Pack Double Disc Drive + DMP 3000 Printer + Wordstar & Supercalc £976.35	£803.85
PC 1512 Double Disc Drive with 14" Colour Monitor	+ £83.00 Software Voucher £838.35
PCW 9512 Disc based Word Processor with Daisywheel Printer	Price on Application
PCW 8256 Disc based Word Processor with Monitor & Printer	+ £45.00 Software Voucher £458.85
PCW 8512 Twin Disc Drive Word Processor with Monitor & Printer	+ £57.00 Software Voucher £573.85
CPC 464 Cassette based Computer with Green Screen & Games Pack	+ £20.00 Software Voucher £199.95
CPC 464 Cassette based Computer with Colour Screen & Games Pack	+ £30.00 Software Voucher £299.95
CPC 6128 Disc based Computer with Green Screen	+ £30.00 Software Voucher £299.95
CPC 6128 Disc based Computer with Colour Screen	+ £40.00 Software Voucher £399.95
DPM 2000 over 100 Typeface Combinations including NLQ	+ Our Ribbon Re-Ink Kit Free £159.00
DPM 3000 will operate with Amstrad PC or any IBM PC	+ Our Ribbon Re-Ink Kit Free £194.35
DPM 4000 15" Carriage Draft Quality Speed 200 CHRS/NLQ Speed 50 CHRS per second	£401.35

Send for our Catalogue of over 3,000 Titles for Amstrad CPC/PCW/CPC, Commodore, Spectrum, Atari, Atari ST, BBC, MSX, Electron, Apple Series 2/Apple Macintosh all at Discount Prices
All prices include VAT, Post & Packaging/UK only. Export orders welcome

COMSOFT

Appointed Amstrad Business Computer Dealer
Coldstream Computer Centre, 48 Duke Street, Coldstream, Berwickshire TD12 4LF
Shop open Mon-Sat 9.30-12.00 & 1.00-5.30. Tel.: 0890 2979. 24-hour Order Service on 0890 2854

READERS' HALL OF FAME

The Pawn – Part 2 of a solution by Graham Wheeler. (Part 1 last month)

With the clue in mind, make your way to the clearing in the forest and examine the stump. Get, open and look inside the pouch. Mix the blue, red and green to get 'white' – your light source. Now go to the tree, climb it then use the wooden key to unlock the door. Enter and close it behind you then push the planks. You will find a route down inside the tree and must use it.

Go to the passage near the crossroads and open and enter the door you find there. Examine the hook to get and wear the hard hat then examine the settee and the resultant cushion to get the coin.

Travel next to the lift and push the button. When you hear the lift arrive, pull the door, go North and get the rope. Press the second button and go to the workface. Once there, get the lumps (of lead) with the trowel. Leave the tree and visit Trader John.

Buy some ale and whisky with the coin then go to the caves near the rocks. Find the cave with the Rem statement and drop all your possessions. Go East to the Lava river cave then up until you get to the riverside chamber. Break the wall and you will be swept back to the cave by a torrent. Get all your possessions and return to the Lava cave and you will find that it is now possible to head North over the Lava river.

Once over, examine and move the pedestal then examine the niche to get the blue key. Go to the alchemist's laboratory and give him the rice and lead. Now go to the store room, get the aerosoul then cast a spell on the tomes and read them – they tell of a pact between Kronos and the Devil.

Make your way to the room with the paper wall and cut the wall with the trowel. Drop the trowel and pull the cupboard. Tie the rope to the hook, climb down the rope then drop it. Go South to the double doors and keep knocking until the porter opens them. When he does, give him the whisky and drop your light.

Go through the doors, down the shaft and visit Jerry in the annex. Give him the ale then pay the Devil a visit. Ask him about the wristband and he tells you he'll remove it if you kill Kronos and then transports you to the rope bridge.

Get the potion bottle then return to the room with the paper wall and get and climb down the rope. Take the light and go back up the rope to the dragon's chamber to examine the shadows. Point at the hobbits then shine your light at them. The dragon can now see them and will eat them instead of you.

You can now go North into Kronos' workshop and throw the bottle at him. Point the aerosoul at him and press the nozzle. Take and wear the hat and cloak then take the wand. You will now be disguised and able to get back past the dragon.

Travel to the plateau and melt the snowman with your light. You are now free to enter the tower but should note that doing so doesn't score you points, even for freeing the princess. Mind you, if you are at all chivalrous I expect you to do so anyway. Be careful not to open the top tower door with the blue key. If you do, you will lose the key and the opportunity to vote later.

Go back into the tree and down into the office. Lift the rug and unlock the safe with the blue key, (it then vanishes). Open, examine then search the safe to get the papers. Take them to the voting booth and put them in the large ballot box.

Return to Hell via the rope in the room with the paper wall, remembering to leave your light outside the double doors, and give the aerosoul to the Devil who will remove your wristband.

Make your way back, collecting the light, and climb back up the rope to the cream door. Knock on it and you will be asked if you are wearing a wristband. Answer and when it is opened, enter. You will be given a listing to correct and should find your score is 350 points. The game is now completed.

Red herrings: The carrot, tea pot, top hat, rabbit, armour, green bottle, chit, rose, wheelbarrow, princess, prism and – if you don't climb the stairs in the tower – the boots.

The Pawn points table.

Getting note from Kronos	5
Putting plant in pot with trowel	5
Entering shed	5
Giving note to guards	5
Climbing rocks	5
Finding pouch used to mix 'white'	5
Finding coin	5
Asking Devil about wristband	5
Getting guru to give you bowl	10
Giving bowl of water to guru	10
Going down inside tree	10
Levering boulder with rake and hoe	10
Using trowel to get lumps of lead	10
Giving rice to alchemist	10
Giving ale to Jerry	10
Finding blue key under pedestal	10
Getting ballot papers from safe	10
Killing adventurer by giving chest	15
Melting snowman with 'white'	15
Getting rope from within lift	15
Climbing down rope in room with paper wall	15
Giving whisky to porter	15
Giving lead to alchemist	20
Putting papers in ballot box	30
Getting soul of Kronos into aerosoul	45
Having Devil remove wristband	50
Total	**350**

CAN YOU HELP?

Peter Van Cauwenbergh has written from Belgium for help with Heavy on the Magick. He has Aleatoire's map from the November 1986 issue but still requires further assistance.

He would like to know; what the passwords for the three exits are, the password for entering room 2.53 (practicus – philosophus), how to pass the cyclops in 1.63, how to get past vampires, the meanings of the garlic in room 1.19, the pellet in 3.1, the snake in 2.5, the egg in 2.13 and the mirror in 3.29, what you do with the number of magick, the shell in room 1.38 and how to reach the nest in 1.54 (how to pass fire). I hope this makes sense to owners of the game and if you can help, please write in.

Paul Sawye is in difficulty with Lord of the Rings Part I. Can anyone help him to get across the ferry at Buckleberry?

Stephen Lawson, a regular contributor to these pages, is having problems with Questprobe 3. He can't seem to manage to get anywhere as the Thing keeps drowning in the tar pit. I haven't seen this game (A hint for the competition perhaps?), so can't help.

Has any intrepid adventurer overcome this problem?

Rick Hanson

Robico
£9.95 cassette

IN this text-only conversion from the BBC Micro you play the part of an assassin (the original title of the game) and your task is, in true Mission Impossible style, discovered by playing a tape recorder found near the opening location of the game. If you manage to successfully play and then dispose of it, you will discover you are expected to find and kill General Garantz, a criminal whose activities are becoming too much of a menace to Society.

Finding a route out of the station is the first problem you face and choosing the conventional method results in your speedy demise. Hitching a ride provides a solution provided you don't let the guard throw a spanner in the works.

Your arrival at the next village down the line should be succeeded by careful exploration. Since you need to spend the night, a suitable hostelry must be searched for. Finding it is easy but using it presents a problem. Taking a gamble is rewarding and should help you settle down for the night.

The following morning sees the mysterious appearance of a coded letter. Making sense of it requires you to start with your room number and work backwards to a solution.

Having freshened up, you are now in a position to visit the bookshop and ask for the book referred to in the letter. The title of the book has the same significance as your room number and a final visit to the church should see an addition to your inventory as well as your intellect.

You are now in a position to leave the village for the confrontation with Garantz.

Several advanced features are built into the game including; saving and restoring to and from ram, brief or verbose text description, an OOPS command and the facility to switch between a black and white or colour display.

The game features 230 locations, a complex parser that allows you to enter multiple commands (does anyone actually use this type of feature?) and, as far as I can discover, no red herrings.

The game is packaged with an adventurer's notebook for your own use and a very comprehensive booklet giving details of the adventure and including a help section.

I am in an advantageous position to review this adventure as I have already seen the other two games in the trilogy.

Overall, a very complex game that is definitely for the more seasoned adventurer. The inclusion of a comprehensive help section, (to which I referred to more than once), would enable a beginner to tackle it – with difficulty.

Presentation 87%
Black and gold packaging – very sexy!

Atmosphere 71%
Tends not to take itself seriously sometimes.

Frustration factor 92%
Very convoluted. The a help section in the booklet is going to be put to a lot of use.

Value for money 61%
Ten quid for a conversion? At eight this game would be exceptional value.

Overall 78%
A very complex game that forms the first part of the best cassette-based trilogy I have ever seen. A couple of quid cheaper and Level 9 will have to watch out.

DISCOUNT SOFTWARE

DISC GAMES

ADV. ART STUDIO	19.95
ADV MUSIC SYSTEM	25.95
BIG LEAGUE SOCCER	10.95
BARBARIAN	10.95
BARRY McGUIGAN BOXING	10.95
CHOLO	15.95
COLOSSUS CHESS 4	11.95
DOGFIGHT 2187	11.95
ELITE	10.95
EXOLON	11.95
F15 STRIKE EAGLE	11.95
HOLLYWOOD HI-JINKS	20.95
KONAMI COIN HITS	11.95
LEADERBOARD GOLF	11.95
LEADER TOURNAMENT	7.95
LIVING DAYLIGHTS	11.95
MOONMIST 6128	20.95
MONOPOLY	11.95
PAPERBOY	11.95
PLANETFALL 6128	19.95
SENTINEL	11.95
PROHIBITION	11.95
SCRABBLE	11.95
STARGLIDER	16.95
SEASTALKER 6128	19.95
SILENT SERVICE	11.95
TRIVIAL PURSUITS	16.95
THE FINAL MATRIX	11.95
THING BOUNCES BACK	11.95
THE PAWN 6128	16.95
WORLD GAMES	11.95
ZYNAPS	11.95

DISC SERIOUS

MAXAM cass/disc	21.95
PROTEXT	21.95
PROSPELL	20.95
PROMERGE	20.95
FRENCH MISTRESS	16.95
GERMAN MASTER	16.95
MATRIX SPREADSHEET	24.95
SPANISH TUTOR	16.95
TASWORD 6128	19.50
TASPELL	12.95
TASPRINT	10.95
TASCOPY	10.95
TASDIARY	10.95
TAS SIGN 6128	23.95
MASTERFILE III	32.95
MASTERCALC 128	28.95
MINI OFFICE II	15.95

CPM BASED

CRACKER 2	41.95
SUPERCALC 2	41.95
MAXAM II	39.95
DR DRAW	39.95
DR GRAPH	39.95
NEVADA FORTRAN	35.95
NEVADA COBOL	35.95
DEVPAC 80 V2	35.95
PASCAL 80	35.95
HISOFT 'C'	35.95
TWO FINGERS TYPING	21.95
CRASH COURSE TYPING	21.95

CASSETTE BASED

GERMAN MASTER	14.95
FRENCH MISTRESS	14.95
SPANISH TUTOR	14.95
ITALIAN TUTOR	14.95
TURBO BASIC	13.95
TASWORD 464	15.95
TASPRINT 464	8.50
TASCOPY 464	8.50
MAXAM	16.95
PROTEXT	16.95
MINI OFFICE II	11.95

ROM BASED

MAXAM	32.95
PROTEXT	32.95
BCPL	32.95
UTOPIA	24.95
PROSPELL	29.95
PROMERGE+	29.95
ROMBO ROM BOARD	33.95
ROMBO with any ROM	29.95

BOOKS/MANUALS

M/CODE FOR BEGINNERS	6.95
PROGRAMMING THE Z80	19.95
128 FIRMWARE SPEC	17.95
DDI FIRMWARE SPEC	9.50
AMSTRAD CPM+ BOOK	12.95
AMSTRAD CPM+ BINDER	16.95

ACCESSORIES

CL1 CASSETTE LEAD	3.50
SECOND DRIVE LEAD	7.95
PRINTER LEAD 1M	8.95
PRINTER LEAD 1.5M	9.95
464 MON EXT LEAD	6.95
6128 MON EXT LEAD	7.95
DMP 2000 RIBBONS	3.95
DMP 8K BUFFER KIT	5.95
MONO SCREEN FILTER	12.95
COLOUR FILTER	14.95
GUNSHOT JOYSTICK	6.95
QUICKSHOT TURBO	12.95
6128 LIGHT PEN	26.95
DKT 64K EXPANSION	35.95
DKT SPEECH SYNTH ROM	37.95
DKT TV TUNER	65.95
1000 FANFOLD LABELS	5.95
SPIKE PROTECTOR	11.95
SINGLE CF2 DISC	2.95
DISC BOX HOLDS 20	11.95

HARDWARE

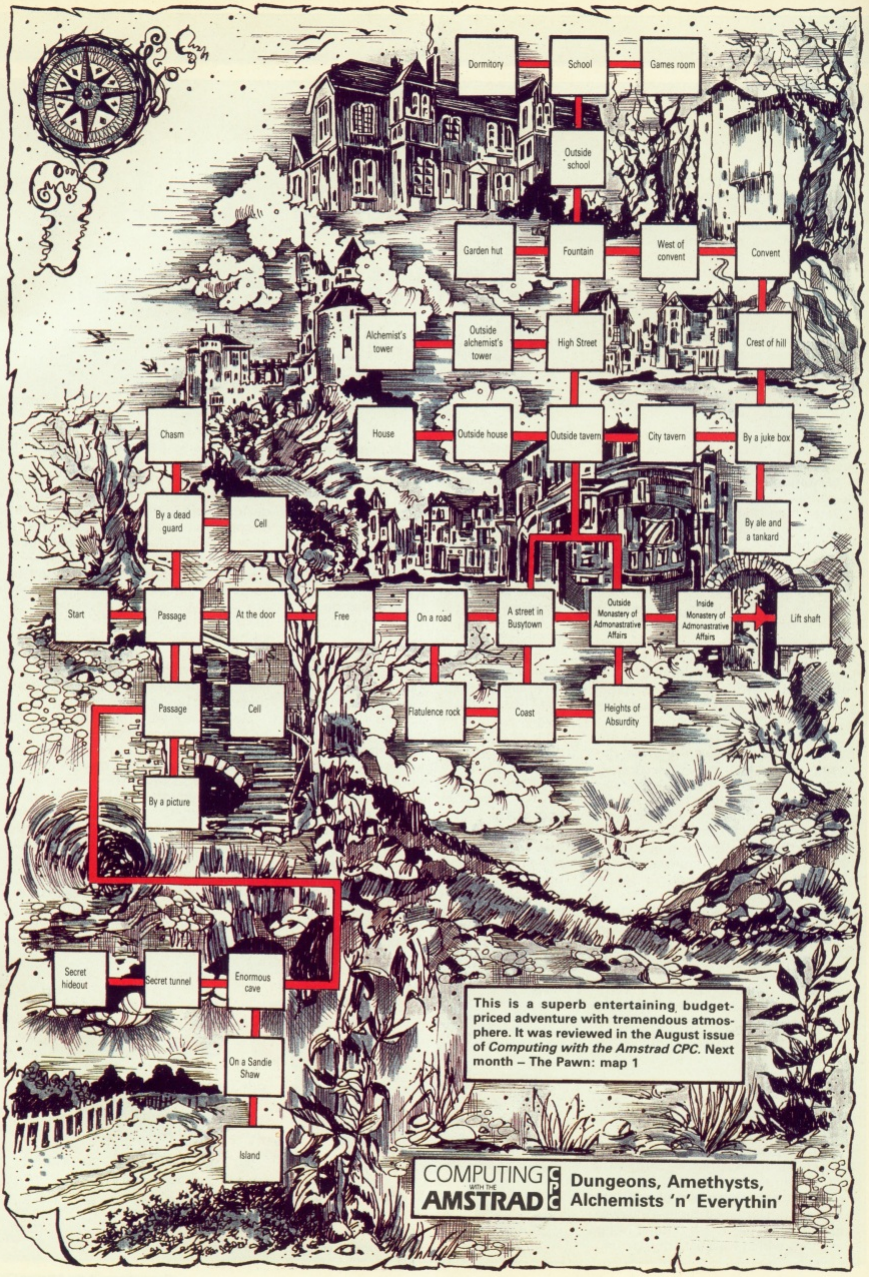
AMSTRAD MODEM	95.95
RS232 INTERFACE	55.95
FD1 DISC DRIVE	99.95
DD1 DISC DRIVE	159.95
DMP 2000 PRINTER	159.95

AMSOFT CF2 DISCS
BOX OF 10 JUST **£25.95**

All prices include postage, packing and VAT in the U.K. Overseas orders welcome – Please write for prices. Please send Cheques/P.O.'s to:

M.J.C. SUPPLIES, (CWA)

'SCOJA', London Road, Hitchin, Herts. SG4 9EN
Tel: (0462) 32897 for enquiries/Access orders


Dormitory
School
Games room
Outside school
Garden hut
Fountain
West of convent
Convent
Alchemist's tower
Outside alchemist's tower
High Street
Crest of hill
Chasm
House
Outside house
Outside tavern
City tavern
By a juke box
By a dead guard
Cell
By ale and a tankard
Start
Passage
At the door
Free
On a road
A street in Busytown
Outside Monastery of Admonastrative Affairs
Inside Monastery of Admonastrative Affairs
Lift shaft
Passage
Cell
Flatulence rock
Coast
Heights of Absurdity
By a picture
Secret hideout
Secret tunnel
Enormous cave
On a Sandie Shaw
Island
This is a superb entertaining budget-priced adventure with tremendous atmosphere. It was reviewed in the August issue of *Computing with the Amstrad CPC*. Next month – The Pawn: map 1
COMPUTING with the AMSTRAD CPC
Dungeons, Amethysts, Alchemists 'n' Everythin'

Another dash down the drain

JOHN MINSON provides a progress report on The Sewer

WHEN they warned me I was going down the drain again, I was rather pleased. The Sewer in question is no ordinary sluice, but the brainchild of Martin Lee, winner of Domark's Design a Game contest, and I reckon it's destined to make its teenage author a big name in software.

A big name, yes – but not an overnight success. It was almost six months since the initial meeting between Martin, Domark and Design Design, the Manchester coding wizards who are turning the blueprint into a program.

My article in the June issue gives full details of that winter meeting and the decisions made that were to have a resounding effect on this young designer.

Since then Domark has moved to a new, more spacious HQ, Martin Lee has continued with his college courses, and Martin Welch has started work on the code.

Eventually the call came and we gathered in the Domark boardroom one Monday afternoon to see what we had got, and what we had got was water – flowing water! Now it may not sound a dramatic development, but this one brief routine had been causing Martin Welch endless headaches, as he explained.

"The problem is to get it to go round things," he said, as he submerged the screen again. "If you just have it spreading out it will fill just the screen sideways when it reaches a ledge, instead of flowing down." None of us could think of a game which had tackled this free-moving problem before. Martin had made one false start and scrapped everything before he hit on the solution.

The game now uses linked lists which divide the water into a series of groups, depending on where it is in the maze. As the maze fills up the surfaces are linked together by the water. And if you don't fully understand that, don't worry – neither did most of us around the table. We just nodded sagely and admired the effect.

Program development is often a case of cracking certain problems and developing units of code which can then be strung together to give an impression of the game. This means that though the initial progress may appear to be very slow, suddenly things will race ahead.

The process is also one of constant refinement. Domark's Richard Naylor quoted the case of The Living Daylights, which was just approaching its final stages. "A single screen was taking up almost all the memory, but then compression techniques reduced it to a tenth of that size."

The water routine was considerably overweight, taking up a massive 20k but there were no worries about putting it on a crash diet. The only regrets were that, in the end, the general public will never realise just how clever and compact a piece of code is. As Richard put it, "They'll say, Water – so what?"

This led quite naturally to the question of how big the game could be. After all, you can only compress so far. The original idea had called for 16 levels, each three screens by three, and this still looked possible, providing large building blocks were used to conserve memory and each level had the same dimensions.

Then somebody asked about scrolling. Martin Welch turned white. While Graham Stafford, top man at Des-Des had agreed to this feature at the first meeting, the news had failed to filter back to the programmer. But everything happens in memory before it's transferred to the screen display, and Martin assured us he could handle it, providing the player character, the Manipulator, wasn't in action at the time.

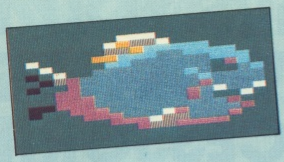
Now there was some code, it was necessary to discuss the original design again in the light of what could or could not be achieved. The way the rocks would behave caused considerable consternation.

For starters, Martin Lee wanted to know whether they would sit rather artificially on top of each other or tumble and pile naturally. Then somebody else asked whether you could trap yourself with falling rocks, and if so, what would happen if the Manipulator had nowhere to throw them.

Martin Lee had a solution to the last problem – crumbling rock. At this stage it seemed a wise idea to define the types of stone you might encounter while you clear The Sewer. Dave Carlos, head of Inter-Mediates, who handle Domark's PR, suggested four types – permanent, collapsible, a type that can be eaten by acid, and crumbly rock which should look quite innocent until you tried to land on it.

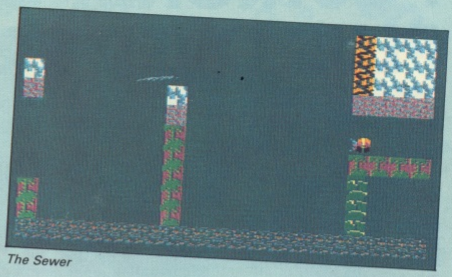
But this led to its own series of problems. For instance there was the question of how permanent rock would behave when thrown by the Manipu-

The men behind the Sewer: The production team in action



The Fish

The Rat



The Sewer

lator. The complexities of calculating trajectories meant that we'd just have to have an extremely powerful Manipulator that can shoot it as far as you want.

It was also okay to have acid-eating rock – a few flashing pixels could provide a satisfactory erosion effect – but Martin's plans called for a hungry fish. There would have to be a separate type of stone, so there could be a rule about what was edible, and Martin Welch reckoned he'd need four frames of animation to gobble a boulder.

But fish were nothing compared to the snails that leave a trail which can be used like glue. That meant each block of rock would need an extra flag to indicate whether it was sticky – and each block has four sides! So a block needs two bytes, one for the display and one for how it behaves. "It's getting quite complex, isn't it?" Richard Naylor sighed.

As if to confound things further, Martin asked about pipe-laying. Being a sewer, there are a number of pipes, and these can be used to direct the flow of water – "Perhaps to siphon it," somebody suggested. The problem is that though the Manipulator has to be able to build pipes, it can also drown. "Isn't that a bit illogical?" Dave Carlos asked, only to be cried down.

So everyone thrashed around for a while with various ideas such as taps, until it was decided that you can only extend an existing pipe, which is capped while you're working on it.

This was further developed at the next meeting, and it now looks as if you'll be able to use the pipes as a safe transport system. That's really a case of going down the tube!

"Will you have to rescue all the men on a level?" we wondered. If Martin put too many workers in peril it's possible some would have to drown. "How about having some who can't be rescued anyhow, so players only waste their time if they try?" The person who voiced this ruthless suggestion will remain nameless.

After several hours of hard slog it looked as if the meeting was about to break up, with a general agreement to get together again in a month's time for another progress report, when it was hoped there would be more graphics to see.

Martin had also thought of some puzzles, but needed to create a complete screen, working on graph paper with each square representing a character block.

As we filtered out I asked Martin's Dad, who had come down with him and sat in on the meeting, what he'd thought. "I'm in social work," he told me, "and I thought our case conferences were tricky and detailed, but this..."

"But you're dealing with people", Dave Carlos laughed. "We're dealing with these horrible things", and he indicated the micro, "which don't do what you say".

A month later there was rather more to see. Design Design's graphics artist, David Fish, had come down and we all tramped into Domark's programming room to take a look at some of the characters he'd come up with.

Code was downloaded from a PCW to a CPC, complete with a system which allows the sprites to be animated at different speeds and blown up or reduced to their game size.

It was quite a thrill to see the menaces that will populate The Sewer come to life after all this time. Everyone was extremely pleased with the results too. There's a vicious snapping fish, which has a fantastic, wriggly swimming motion and we all liked the rat, but as Martin Lee points out, it's missing its ears. David promised to sort these out.

There was also a sample screen to watch. The Manipulator could move around it, pushing blocks, as the water trickled in, slowly filling the space. At last the game looked as if it was getting somewhere.

Back in the boardroom it transpired that all the worries about rock types, from a month earlier, had become redundant. Rock can have any combination of characteristics, which include whether it's affected by gravity, if it crumbles or if acid eats it. Dave Carlos even suggested there could be a sort of liquid rock or slurry.

All in all, this leaves room for 16 variations – seven more than the original plan called for. When Design-Design provide Martin with a screen designer he'll have a lot more leeway in creating ingenious puzzles.

With the programming progressing so well it was time to look ahead to the next steps in the process and to think about a release date. Though it couldn't be finalised without further discussions with Domark, DesignDesign were able to suggest a completion date. That meant Dave Carlos could set his press campaign into action, advertisements would have to be planned, and packaging could be designed.

Dave wanted Martin Lee to meet one of the buyers for a major software supplier. "When will you have a version we can show people?" he asked Martin Welch. The target date was set as mid-August. As Dave said, "We could carry on programming for ever. We have a very complex program. But there has to come a point when we say stop".

That point has now been reached. The programming is near an end. The next item on the agenda is the selling of The Sewer!

● *We will be returning to The Sewer once more to see its completion and launch. Will the deadline be met? Will the end result justify all the effort? Read the final instalment of this fascinating story – soon!*

POSTRONIX OFFERS YOU TH
PLUS OVER £200 WORTH OF
AND ACCESSORIES
FOR ONLY

★OFFER APPLIES TO U.K. MAINLAND ONLY
ALL PRODUCTS GUARANTEED FOR 12 MONTHS.

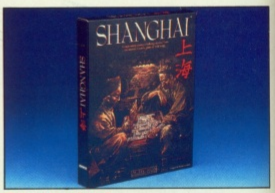
£450
+YOUR OLD COMPUTER

(ANY MAKE OR MODEL ACCEPTED AS PART EXCHANGE £550 WITH NO PART EXCHANGE).

Diskette Storage Box
This compact and sturdy storage box holds 40 Amiga discs, offering protection and safe keeping to your valuable collection of Amiga software.
RRP....£10.99

10 Blank Discs
High quality, double sided double density discs (pack of ten). A must for any Amiga owner and a real saving for all new users.
RRP....£25.99

Deluxe Paint
This graphic art and paint package compliments the Amiga's capabilities totally and will add hours of sheer delight to your Amiga activities.
RRP....£90.99



Shanghai
A captivating strategy challenge derived from the ancient Chinese game of Mah Jongg. The exceptional 3D graphics of the Amiga add realism never before experienced on home computers.
RRP....£24.99

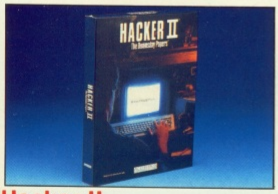
HOW TO ORDER
SIMPLY FILL IN THE COUPON AT THE BOTTOM OF THE PAGE AND SEND IT TO **POSTRONIX LTD 8, FARADAY COURT, PARK FARM, WELLINGBOROUGH, NN8 3XY.**
TOGETHER WITH YOUR REMITTANCE OF **£450** + **£5** CARRIAGE PLUS THE COMPUTER YOU WISH TO PART EXCHANGE. (ENCLOSE **£550** IF NO PART EXCHANGE). YOU MAY PAY BY ACCESS, VISA, CHEQUE OR POSTAL ORDER, ALLOW 28 DAYS FOR DELIVERY.

NAME
ADDRESS
CARD NO
OR ENCLOSE CHEQUE
SIGNATURE
AMIGA 500 + SOFTWARE AND ACCESSORIES. PRICE £450
PART EXCHANGE DESCRIPTION
EXTRAS
CARRIAGE £5.00
TOTAL

Priveliged Purchaser Card
When you participate in this unique offer from Postronix, you will also receive a priveliged purchaser card enabling you to add to your collection of Amiga software, accessories and hardware plus many other products available from Postronix, all at incredible discount prices.

THE AMIGA 500™ OF SOFTWARE

SAVE OVER £200 WHEN YOU PART EXCHANGE YOUR OLD COMPUTER.



Hacker II

A popular strategy game simulating the infiltration of a high security complex somewhere in Siberia. Exciting and realistic when experienced on the Amiga.

RRP....£24.99

The Music Studio

This piece of software has been especially included in this pack, as it fully exploits the outstanding musical capabilities of the Amiga 500, giving you all the benefits of a professional sound synthesiser. Midi compatable.

RRP....£34.99

Joysticks

2 high quality joysticks included, enabling full use of your Amiga and software from the very start.

RRP....£5.99 EACH

ALSO AVAILABLE OPTIONAL EXTRAS

- **AMIGA A1081 COLOUR MONITOR (STEREO) - £375.00**
- **AMIGA A1010 EXTERNAL DISKDRIVE - £285.00**
- **AMIGA A501 512K RAM EXPANSION - £112.00**
- **AMIGA A521 TV MODULATOR - £24.00**

postronix Ltd

A Prestwich Holdings plc Company

IF YOU'RE THINKING OF BUYING AN AMIGA CAN YOU AFFORD NOT TO BUY IT FROM POSTRONIX?

ALL PRODUCTS GUARANTEED FOR 12 MONTHS. WE RESERVE THE RIGHT TO SUBSTITUTE SOFTWARE WITH A COMPARABLE PRODUCT.

Link your Amstrad CPC to the outside world with...

MicroLink

Electronic mail – The cheapest and fastest form of communication possible. It costs the same to send a message to one mailbox as to 500!

Telex – Link up with 96,000 telex subscribers in the UK and 1.5 million worldwide. You can even send and receive telexes after office hours or while travelling.

Telemessages – Type in your message before 8pm and delivery is guaranteed by first post the next day (except Sunday), anywhere in the UK and USA.

Tele-booking – Reserve train and theatre tickets, check flight details worldwide, or order from a vast range of products – from flowers to floppy discs.

Advice on a team of professional legal and financial advisors as and when you need them, for both business and personal problems.

Company – Obtain facts about any British limited company in seconds, and fully analysed financial information on over 100,000 major companies.

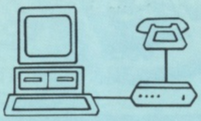
Typesetting – Send copy from your word processor together with details of type size and style, and you'll receive pages ready for printing within 24 hours.

News – Use the powerful search commands to pinpoint vital business information from the world's leading news services, newspapers and periodicals.

Radiopaging – If you also have a pocket radiopager you'll be alerted each time an urgent message arrives in your mailbox. So you're always in touch.

Gateways – Get through to New York in just five seconds – or key into the EEC computer in Luxembourg, which links you to 600 databases throughout Europe.

When you join MicroLink you've got the whole business world at your fingertips – 24 hours a day. You'll have immediate access to ALL the facilities offered by Telecom Gold ... and a great deal more besides.



Typical comms packages	
A	*Cirkit: Acoustic V23 modem + RS232 interface + tape or disc comms software (£35.40)*
B	*KDS: Minimax V21, V23 autodial modem + RS232 interface + comms rom (£99)*
C	*Pace: Nightingale V21, V23 manual dial modem + RS232 interface + Commstar rom (£159)*
D	*Pace: Linnet V21, V23 autodial modem + RS232 interface + Commstar rom (£213)*

All you need – apart from your Amstrad – is a modem, which plugs into your telephone wall socket, an RS232 interface and suitable communications software.

We have provided a list of possible combinations (left), ranging from the very cheapest to ones which can automatically dial the MicroLink telephone number and connect you directly to the service – all you have to do is type in your personal security password.

Whichever equipment you use, you will be able to call MicroLink, open your mailbox, save to disc any messages waiting for you, and disconnect in as little as two minutes.

More than 90 per cent of subscribers can connect to the MicroLink computer at local call rates.

TO FIND OUT MORE
Fill in the coupon and send it to the address below. You will receive full details of services and costs, together with an application form. Complete this and within days you and your Amstrad will be able to use all the services of MicroLink and Telecom Gold.

Please send me full details about MicroLink, and information sheets about the following hardware and software options (please circle):

A B C D

Name_____

Address_____

_____

Postcode_____

Send to: MicroLink, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.

CPC/CA10

Four in a Row

DUDLEY BROOKE adapts Connect 4

FOUR in a row is a computer adaptation of the well known game Connect 4. You can play either a human opponent or the computer. If you prefer you can even sit back and watch the computer compete against itself.

To get started just follow the on-screen prompts to identify the players. Once into the game all you need to do to place a counter is select a column by positioning the arrow using the cursor keys, then press Copy to confirm your choice.

Lines 1490-2370 contain the algorithm for choosing the computer's move, and it can be a ruthless opponent. The routine only changes one major variable *col*, so it would be fairly easy for anyone wishing to write their own algorithm to implement it within the framework of the rest of the program.

The "check against arrays" routine (lines 1950-2130) searches the arrays for an offered string *tst$*. If a match is found it returns with *col* set to the appropriate column in which to drop the counter.

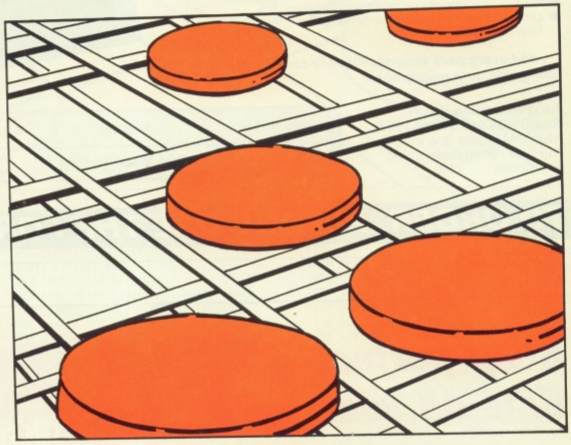
The program has been designed for speed, and the computer will not take more than 10 seconds to arrive at a decision.

To achieve this the position of each counter is stored four times in four string arrays and these correspond to the four directions in which a winning line may be made – either in a column, a row or diagonally. This allows the speed of the INSTR command to be used to search for a match.

In general, single letter variables are not passed to other routines, the notable exception being *p* which is either 1 or –1 and identifies the current player.

The program is quite complex, especially the routines which handle the selection of the computer's move, and particularly the arithmetic expressions which access the strings storing the game position.

Any typing errors with these could be quite difficult to debug, but given this little clue and the checksums, you have some advantage.



MAJOR VARIABLES

cols$() row$() ned$() sed$()	The position of the counters in the frame. An empty space is represented by 0, and the players' counters by + and – depending on the sign of *p*
col	The column in which to enter counter
hgt()	The height of given column
p	Current player
ctrl$()	Determines human or computer

```
10 REM          Four in a Row
20 REM (c) Computing with the Amstrad
30 REM ------------ CPC ------------
40 MODE 1:BORDER 0:GOSUB 300
50 GOSUB 870
60 GOSUB 430
70 GOSUB 700
80 GOSUB 340
90 GOSUB 1010:GOSUB 1150
100 GOSUB 670:GOSUB 1370
110 GOSUB 570:ON win GOTO 150
120 go=go+1:p=-p:REM next player
130 IF go=42 THEN win$="The game is a dr
aw !":GOTO 170
140 GOTO 100
150 win=0:gam((p+1)/2)=gam((p+1)/2)+1
160 win$=p$((p+1)/2)+" has won"
170 CLS #1:PEN #1,p+2:LOCATE #1,14-(LEN(
win$)/2),1:PRINT #1,win$
180 FOR s=50 TO 100 STEP 10:SOUND 4,s*2,
s,7:NEXT
190 FOR d=1 TO 3000:NEXT
200 LOCATE #1,2,1:PRINT #1,"PRESS A KEY
TO CONTINUE"
210 WHILE INKEY$<>"":WEND:CALL &BB18
220 GOSUB 430:MODE 1:CLS:PEN 0
230 RESTORE 2380:FOR n=1 TO 7:READ a$
```

Make fabulous music on your Amstrad

SAVE £5

For the first time you can create sounds, write music, add drums, and even control other instruments – all from one single, easy-to-use system.

- Record ANY external sound, alter it and play it through the keyboard
- Create exciting rhythm patterns with up to three sampled drum sounds on any beat
- Write your own music using the on-screen facilities
- Plug in headphones or listen through your hifi
- Link to other musical instruments using the built-in Midi interface

. . . and every pack includes an easy-to-understand user guide, and microphone.

As reviewer Ian Waugh found (*CWACPC* July 1987), Music Machine is a lot of fun and remarkable value for money.

Suitable for	Product	Format	RRP	Special reader offer	YOU SAVE
CPC range	Ram Music Machine	Tape Disc	£49.95 £59.95	£44.95 £54.95	£5 £5

TO ORDER, PLEASE USE THE FORM ON PAGE 61

Keep perfect time on your CPC

Here's a highly-accurate quartz-controlled clock from dk'tronics which plugs into the back of your computer.

- **You can set the alarm to ring from once per second to once per day – perfect for reminding you of appointments when you're engrossed in typing.**
- **There's a built-in calendar with days of the week, date, month and year – and it recognises leap years.**
- **Now you can automatically date stamp your CP/M files so you know the exact time and date that each file was updated.**
- **There's also 50 bytes of battery-backed ram in the interface for you to use for other purposes.**

The unit is powered by a rechargeable Ni-cad battery which should never need replacing, and there's a through connector so you can attach other interfaces.

Normally £34.95

Offer price £29.95

TO ORDER, PLEASE USE THE FORM ON PAGE 61

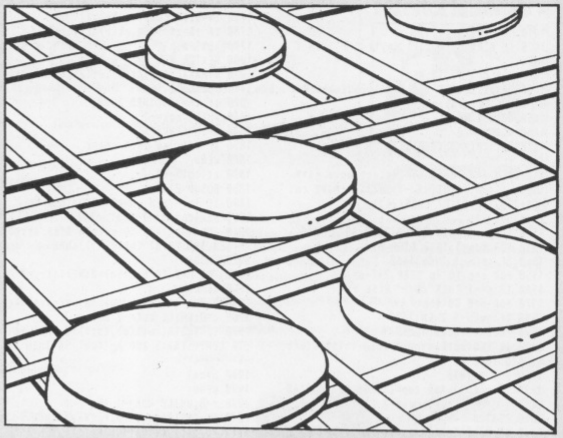
◀ From Page 35

```
240 LOCATE 3,n*2:PRINT a$:NEXT
250 a$="":WHILE a$="":a$=INKEY$:WEND
260 IF a$<"1" OR a$>"3" THEN 250
270 p=-p:ON VAL(a$) GOTO 80,70,280
280 CALL &BC02:PEN 1:PAPER 0:MODE 1
290 END
300 REM  **** dims + functions ****
310 DEFINT a-z:DIM sed$(11),ned$(11)
320 DEF FNde(a,b)=a+1+(7-(12-b))*(b>5)
330 RETURN
340 REM  **** Set up variables ****
350 FOR c=0 TO 6:col$(c)="000000"
360 hgt(c)=0:NEXT
370 FOR r=0 TO 5:row$(r)="0000000"
380 NEXT
390 FOR n=0 TO 11
400 t=-(n+1)*(n<6)-(12-n)*(n>5)
410 t$=STRING$(t,"0"):sed$(n)=t$:ned$(n)
=t$
420 NEXT:go=0:RETURN
430 REM  **** Set up colours ****
440 INK 0,0:INK 1,24:INK 2,13:INK 3,6:BO
RDER 0
450 PAPER #1,3:PAPER #2,3:PAPER #3,3
460 RETURN
470 REM  **** Update strings ****
480 IF p=1 THEN z$="+" ELSE z$="-"
490 col$(col)=LEFT$(col$(col),n-1)+z$+RI
GHT$(col$(col),6-n)
500 row$(hgt(col))=LEFT$(row$(hgt(col)),
col)+z$+RIGHT$(row$(hgt(col)),6-col)
510 r=col+hgt(col):e=FNde(col,r)
520 sed$(r)=LEFT$(sed$(r),e-1)+z$+RIGHT$
(sed$(r),LEN(sed$(r))-e)
530 clm=6-col:r=clm+hgt(col)
540 e=FNde(clm,r)
550 ned$(r)=LEFT$(ned$(r),e-1)+z$+RIGHT$
(ned$(r),LEN(ned$(r))-e)
560 RETURN
570 REM **** check for winner ****
580 IF p=1 THEN chk$="++++" ELSE chk$="-
---"
590 FOR r=0 TO 5
600 IF INSTR(row$(r),chk$)>0 THEN win=1
610 NEXT:FOR c=0 TO 6
620 IF INSTR(col$(c),chk$)>0 THEN win=1
630 NEXT:FOR d=0 TO 11
640 IF (INSTR(sed$(d),chk$)>0) OR (INSTR
(ned$(d),chk$)>0) THEN win=1
650 NEXT:RETURN
660 REM **** select move ****
670 IF ctrl$((p+1)/2)="C" THEN GOSUB 149
0 ELSE GOSUB 1270
680 RETURN
690 REM ***** set up player status *****
700 PAPER 2:LOCATE 1,2:PRINT CHR$(20)
710 LOCATE 10,3:PRINT"PLAYERS :-"
720 LOCATE 5,23:PRINT "Entering 'C' mean
s that you wish":LOCATE 5,24:PRINT"Amstr
ad to play for this player."
730 FOR n=0 TO 1:gam(n)=0
740 IF n=0 THEN n$="1st" ELSE n$="2nd"
750 LOCATE 3,5+n*3:PRINT n$;
760 LINE INPUT " Name ( max 8 letters )
",p$(n)
770 IF LEN(p$(n))<1 OR LEN(p$(n))>8 THEN
 LOCATE 30,5+n*3:PRINT USING "&";STRING$
(LEN(p$(n)),32);:GOTO 750
780 p$(n)=UPPER$(p$(n))
790 IF p$(n)="C"  THEN ctrl$(n)="C" ELSE
 ctrl$(n)="P"
800 IF p$(n)="C"  THEN p$(n)="AMSTRAD":I
F n=1 AND p$(0)="AMSTRAD" THEN p$(n)="RO
LAND"
810 LOCATE 30,5+n*3:PRINT p$(n):NEXT
820 n=INT(RND*2):p=n+2-1:nam$=p$(n)
830 LOCATE 3,11:PRINT nam$" will play fi
rst"
840 LOCATE 3,14:PRINT CHR$(20) "Press an
y key to continue"
850 CALL &BB18:RETURN
860 REM  ***** Redefine Symbols *****
870 SYMBOL 254,0,0,0,0,0,7,63,127,255
880 SYMBOL 253,0,0,0,0,0,224,252,254,255
890 SYMBOL 252,0,0,0,0,0,0,0,128
900 SYMBOL 251,3,3,7,7,7,15,15,15
910 SYMBOL 250,192,192,224,224,224,240,2
40,240
920 SYMBOL 249,15,15,15,7,7,7,3,3
```

This is one of hundreds of programs now available FREE for downloading on MicroLink

```
930 SYMBOL 248,240,240,240,224,224,224,1
92,192
940 SYMBOL 247,1,0,0,0,0,0,0,0
950 SYMBOL 246,255,127,63,7,0,0,0,0
960 SYMBOL 245,255,254,252,224,0,0,0
970 SYMBOL 244,128,0,0,0,0,0,0,0
980 SYMBOL 241,24,24,24,24,24,126,126,60,24
990 RETURN
1000 REM  ***** Draw screen *****
1010 PAPER #1,0:PAPER #2,0:PAPER #3,0:CL
G 0:CLS:CLS #1:CLS #2:CLS #3:PEN 0
1020 WINDOW #0,7,34,2,25:WINDOW #1,7,34,
1,1:WINDOW #2,35,40,1,25:WINDOW #3,1,6,1
,40
1030 bd$=STRING$(4,8)+CHR$(10):qr$=CHR$(
32)
1040 FOR n=254 TO 252 STEP -1:qr$=qr$+CH
R$(n):NEXT
1050 qr$=qr$+bd$
1060 qr$=qr$+CHR$(251)+STRING$(2,143)+CH
R$(250)
1070 qr$=qr$+bd$
1080 qr$=qr$+CHR$(249)+STRING$(2,143)+CH
R$(248)
1090 qr$=qr$+bd$
1100 FOR n=247 TO 244 STEP -1:qr$=qr$+CH
R$(n):NEXT
1110 PRINT qr$
1120 FOR x=1 TO 27 STEP 4:FOR y=1 TO 21
STEP 4
1130 LOCATE x,y:PRINT USING "&";qr$;
1140 NEXT y,x
1150 REM **** Write names ****
1160 FOR n=0 TO 1:MOVE n*544,1
1170 DRAWR 0,398,(n*2)+1:DRAWR 95,0:DRAW
R 0,-398:DRAWR -95,0
1180 TAG:IF n=0 THEN MOVE 2+48-(12*LEN(p
$(n))/2),300-48+(12*LEN(p$(n)))/2) ELSE M
OVE 546+48-(12*LEN(p$(n))/2),300-48+(12*
LEN(p$(n)))/2)
1190 FOR d=1 TO LEN(p$(n))
1200 PRINT MID$(p$(n),d,1);
1210 MOVER-5,-17:NEXT
1220 MOVE (n*544)+8,96:PRINT "GAMES";
1230 g$=STR$(gam(n)):g$=RIGHT$(g$,LEN(g$
)-1)
1240 MOVE (n*544)+48-(LEN(g$)*8),76:PRIN
T g$;
1250 TAGOFF:NEXT:RETURN
1260 REM  **** move cursor ****
1270 PLOT -1,-1,p+2
1280 TAG:MOVE col*64+12,398:PRINT CHR$(
241);
1290 cl1=col+(INKEY(8)=0 AND col>0)-(INK
EY(1)=0 AND col<6)
1300 IF (INKEY(9)=0) AND (hgt(col)<>6) T
HEN 1350
1310 IF cl1=col THEN 1290
1320 st=(col>cl1)-(col<cl1)
1330 FOR n=col+64 TO cl1*64 STEP st:MOVE
 n+12,398:PRINT CHR$(241);:NEXT:col=cl1
1340 GOTO 1290
1350 TAGOFF:RETURN
1360 REM  **** place token ****
1370 n=6
1380 PAPER 2:PEN p+2
1390 LOCATE (col*4)+1,25-(n)*4:PRINT USI
NG "&";qr$;
1400 IF n=1 THEN 1460
```

Turn to Page 38 ▶



◀ From Page 37

```
1410 nn=-(n-1)*(n>1)
1420 IF MID$(col$(col),nn,1)<>"0" THEN 1
460
1430 FOR d=1 TO 50:NEXT
1440 PEN 0:LOCATE (col*4)+1,25-(n)*4:PRI
NT USING "&";qr$;:n=n-1
1450 GOTO 1380
1460 GOSUB 470
1470 hgt(col)=hgt(col)+1
1480 RETURN
1490 REM **** computer select move ****
1500 cl1=col:PLOT -1,-1,p+2:TAG:MOVE col
*64+120,398:PRINT CHR$(241);
1510 col=-1
1520 IF go<2 THEN GOSUB 2300:GOTO 1900
1530 FOR top=3 TO 2 STEP -1
1540 IF col>-1 THEN 1660
1550 FOR s=p TO -p STEP 2*(-p)
1560 IF s=-1 THEN z$="-" ELSE z$="+"
1570 FOR n=0 TO top
1580 IF col>-1 THEN 1620
1590 tst$=STRING$(n,z$)+"0"
1600 IF LEN(tst$)<top+1 THEN tst$=tst$+z
$:GOTO 1600
1610 GOSUB 1950
1620 IF col>-1 AND top=2 THEN GOSUB 2140
:IF inv THEN inv=0:col=-1
1630 NEXT n
1640 IF col=-1 THEN tst$="0"+z$+z$+"0":G
OSUB 1950
1650 NEXT s
1660 NEXT top
1670 IF col>-1 THEN 1900
1680 FOR c=0 TO 6
1690 IF p=-1 THEN z$="-" ELSE z$="+"
1700 IF hgt(c)=6 THEN ct(c)=-1:GOTO 1800
1710 t=hgt(c)-1*(hgt(c)<6)
1720 b=hgt(c)+1*(hgt(c)>1)
1730 g=c+1*(c>0)
1740 d=c-1*(c<6)
1750 FOR h=b TO t
1760 FOR w=g TO d
1770 t$=MID$(col$(w),h+1,1)
1780 IF t$=z$ THEN ct(c)=ct(c)+1
1790 NEXT w,h
1800 NEXT c
1810 m=MAX(ct(0),ct(1),ct(2),ct(3),ct(4)
,ct(5),ct(6))
1820 IF try>25 THEN 1900
1830 WHILE col=-1
1840 c=INT(RND*7)
1850 IF ct(c)=m THEN col=c
1860 WEND
1870 ct(col)=-1
1880 GOSUB 2140
1890 IF inv THEN inv=0:GOTO 1810
1900 st=(col<cl1)-(col>cl1)
1910 FOR n=cl1*64 TO col*64 STEP st:MOVE
 n+120,398:PRINT CHR$(241);:NEXT
1920 TAGOFF
1930 FOR n=0 TO 6:ct(n)=0:NEXT:try=0
1940 RETURN
1950 REM **** check against arrays ****
1960 c=0:WHILE col=-1 AND c<7
1970 IF INSTR(col$(c),tst$)>0 THEN col=c
:IF LEN(tst$)=3 AND hgt(col)>4 THEN col=
-1
1980 c=c+1
1990 WEND
2000 r=0:WHILE col=-1 AND r<6
2010 IF INSTR(row$(r),tst$)>0 THEN col=I
NSTR(row$(r),tst$)+INSTR(tst$,"0")-2:IF
hgt(col)<>r THEN col=-1
2020 r=r+1
2030 WEND
2040 d=3:WHILE col=-1 AND d<9
2050 pne=INSTR(ned$(d),tst$)
2060 pne=-(pne+INSTR(tst$,"0")-1)*(pne>0
)
2070 IF pne>0 THEN col=(-(7-pne)*(d<6)-(
12-d-pne)*(d>5)):ht=-(d-(6-col))*(d<6)-(
6-pne)*(d>5):IF hgt(col)<>ht THEN col=-1
2080 pse=INSTR(sed$(d),tst$)
2090 pse=-(pse+INSTR(tst$,"0")-1)*(pse>0
)
2100 IF pse>0 THEN col=(pse-1)-(d-5)*(d>
5):ht=(d-pse+1)+(d-5)*(d>5):IF hgt(col)<
>ht THEN col=-1
2110 d=d+1
2120 WEND
2130 RETURN
2140 REM **** Giving game away ****
2150 try=try+1
2160 IF (hgt(col)+col>10) OR (hgt(col)+(
6-col)>10) THEN 2290
2170 IP p=-1 THEN z$="+" ELSE z$="-"
2180 FOR n=0 TO 3
2190 IF inv THEN 2280
2200 tst$=STRING$(n,z$)+"0"
2210 IF LEN(tst$)<4 THEN tst$=tst$+z$:GO
TO 2210
2220 k=INSTR(row$(hgt(col)+1),tst$)
2230 IF k>0 AND k+INSTR(tst$,"0")-2=col
THEN inv=1:GOTO 2280
2240 r=col+hgt(col)+1:e=FNde(col,r):k=IN
STR(sed$(r),tst$)
2250 IF k>0 AND k+INSTR(tst$,"0")-1=e  T
HEN inv=1:GOTO 2280
2260 clm=6-col:r=clm+hgt(col)+1:e=FNde(c
lm,r):k=INSTR(ned$(r),tst$)
2270 IF k>0 AND k+INSTR(tst$,"0")-1=e TH
EN inv=1
2280 NEXT
2290 RETURN
2300 REM **** Opening play ****
2310 IF go<3 THEN col=INT(RND+RND+RND+RN
D+RND+RND+RND):GOTO 2370
2320 col=INT(RND*7):IF p=-1 THEN z$="-"
ELSE z$="+"
2330 col=INT(RND*7)
2340 IF INSTR(col$(col),z$)=0 THEN 2330
2350 col=col+(INT(RND)*3)-1
2360 IF col>6 OR col<0 THEN 2330
2370 RETURN
2380 DATA "             OPTIONS :-"
2390 DATA "-----------------------------
----------
2400 DATA "  1 - Play again with same pl
ayers"
2410 DATA "  2 - Play again with other p
layers"
2420 DATA "  3 - End game"
2430 DATA "-----------------------------
----------
2440 DATA "  Select number of option"
```

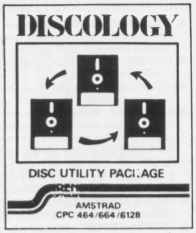
10 = 38208	290 = 00064	570 = 46688
20 = 06560	300 = 63392	580 = 10112
30 = 58112	310 = 14880	590 = 48608
40 = 16352	320 = 14208	600 = 35360
50 = 31104	330 = 27008	610 = 58016
60 = 22016	340 = 62816	620 = 30048
70 = 15936	350 = 48736	630 = 15904
80 = 34592	360 = 02144	640 = 10976
90 = 13792	370 = 04000	650 = 42880
100 = 13568	380 = 42400	660 = 17856
110 = 16320	390 = 53504	670 = 34912
120 = 53376	400 = 59616	680 = 27008
130 = 12288	410 = 51840	690 = 15360
140 = 30912	420 = 18112	700 = 59968
150 = 28448	430 = 60992	710 = 48896
160 = 44768	440 = 11520	720 = 55872
170 = 28000	450 = 04736	730 = 05792
180 = 14912	460 = 27008	740 = 45408
190 = 33888	470 = 15776	750 = 45152
200 = 52224	480 = 58016	760 = 45248
210 = 59136	490 = 55328	770 = 31040
220 = 45280	500 = 49440	780 = 03360
230 = 32896	510 = 33856	790 = 13376
240 = 34496	520 = 25696	800 = 51456
250 = 60864	530 = 07552	810 = 52288
260 = 46272	540 = 53344	820 = 08960
270 = 21440	550 = 33056	830 = 26816
280 = 22848	560 = 27008	840 = 32448

850 = 26144	1130 = 57376	1410 = 07488
860 = 00544	1140 = 53280	1420 = 27296
870 = 35200	1150 = 13600	1430 = 14656
880 = 64000	1160 = 64384	1440 = 09952
890 = 43072	1170 = 27328	1450 = 33376
900 = 60064	1180 = 39136	1460 = 22560
910 = 08128	1190 = 08928	1470 = 16480
920 = 44288	1200 = 12832	1480 = 27008
930 = 52800	1210 = 02304	1490 = 10208
940 = 23808	1220 = 05952	1500 = 01408
950 = 20032	1230 = 05920	1510 = 42944
960 = 08000	1240 = 64864	1520 = 08032
970 = 37312	1250 = 02240	1530 = 35712
980 = 55168	1260 = 18080	1540 = 52352
990 = 27008	1270 = 07200	1550 = 01056
1000 = 51840	1280 = 08864	1560 = 40000
1010 = 48992	1290 = 13152	1570 = 13248
1020 = 25568	1300 = 43360	1580 = 51552
1030 = 39840	1310 = 08992	1590 = 18304
1040 = 26688	1320 = 35808	1600 = 27840
1050 = 59712	1330 = 31072	1610 = 03168
1060 = 49152	1340 = 27360	1620 = 30496
1070 = 59712	1350 = 36704	1630 = 39104
1080 = 58016	1360 = 54976	1640 = 02624
1090 = 59712	1370 = 36896	1650 = 61728
1100 = 17312	1380 = 52320	1660 = 20096
1110 = 00544	1390 = 07584	1670 = 44224
1120 = 49280	1400 = 24768	1680 = 27424

1690 = 23104	1970 = 06720	2250 = 20064
1700 = 32608	1980 = 24000	2260 = 37024
1710 = 09152	1990 = 12864	2270 = 44384
1720 = 36992	2000 = 35136	2280 = 42400
1730 = 12448	2010 = 23296	2290 = 27008
1740 = 02464	2020 = 55296	2300 = 13504
1750 = 16800	2030 = 12864	2310 = 28896
1760 = 52352	2040 = 53856	2320 = 15328
1770 = 41344	2050 = 31936	2330 = 26144
1780 = 37760	2060 = 52224	2340 = 35776
1790 = 10880	2070 = 42656	2350 = 00448
1800 = 58176	2080 = 54208	2360 = 53376
1810 = 29984	2090 = 00864	2370 = 27008
1820 = 59680	2100 = 26208	2380 = 18784
1830 = 64704	2110 = 55264	2390 = 60672
1840 = 21600	2120 = 12864	2400 = 14848
1850 = 22816	2130 = 27008	2410 = 57408
1860 = 12864	2140 = 32160	2420 = 15136
1870 = 39360	2150 = 00096	2430 = 60672
1880 = 38144	2160 = 11456	2440 = 19072
1890 = 31456	2170 = 05888	
1900 = 55552	2180 = 45056	
1910 = 05856	2190 = 50976	
1920 = 64192	2200 = 18304	
1930 = 40832	2210 = 20000	
1940 = 27008	2220 = 40768	
1950 = 61952	2230 = 63680	
1960 = 05824	2240 = 62272	

SIREN SOFTWARE

DISCOLOGY NEW



This is the ultimate in disc utilities. Discology consists of 3 programs, a disc editor, a disc explorer and a disc copier.

The copier
* At the time of going to press, we could not find a disc that Discology could not back up (except itself). This really is the most powerful copier ever written for your Amstrad.
* Makes full use of all 128K on a 6128.
* Highly intelligent, compresses, data allowing whole discs to be copied in one go.
* Full file copier, copy multiple files in one go. Will cope with files of any length.
* Copies files from disc to tape.

The Editor
* Edit any sector, including funny formatted sectors.
* Display in Z80 disassembly, basic listing, hex, ASCII, binary, octal & decimal.
* Search disc for a given string.
* Dump page to printer.
* Built in full floating point calculator, hex to decimal conversion etc.
* Exceptionally easy to use.

The Explorer
* A new concept in disc utilities.
* Graphically maps discs and files.
* Shows how many sectors on each track and displays on which sectors files are stored.
* Displays full sector information and file information.

Discology makes comprehensive use of all pull down menus and is a superb addition to any disc owners software collection. Discology makes extensive use of all 128K on a 6128 and all 64K on a 464. This 100% machine code program offers everything you could dream of plus more

Discology on disc only £14.99 CPC464/664/6128

Upgrades:- Master Disc owners, return your Masterdisc to us, and we will put Discology onto side B of your Masterdisc. Upgrade price is just £9.99 plus your Master Disc.

PLEASE ADD £1.00 PER PROGRAM FOR OVERSEAS POSTAGE

Access VISA

SIREN SOFTWARE 2-4 OXFORD ROAD, MANCHESTER M1 5QA.
TELEPHONE: 061-228 1831

ROMBOARD OFFERS SAVE £30

8 SOCKET ROM BOARD ~~£34.95~~ **£24.90**
(FOR 6128, 664 & 464)

PLUS EITHER
a) TOOL BOX & BASIC EXT. ROM.
or
b) DISC USERS UTILITIES ROM
(NORMALLY £19.95 EACH)

FREE!!!

464 OWNERS ONLY — 7 SOCKET Rom Card (old price £25)
Now only £19.90 including one Rom-based program as above. (Limited stock!!)
Uncased board incl. one Rom as above ONLY **£16.50**

BUY ALL THE LATEST GAMES DIRECT AND SAVE £££'s

CHOLO CASSETTE	~~£14.95~~	**£11.25**
CONVOY RAIDER CASSETTE	~~£9.99~~	**£7.50**
EXOLON CASSETTE	~~£8.95~~	**£6.70**
BLACK MAGIC CASSETTE	~~£9.99~~	**£7.50**
COIN-OP CLASSICS CASSETTE	~~£9.99~~	**£7.50**
THE EDGE CLASSICS CASSETTE	~~£6.99~~	**£5.24**
WHIZ BALL CASSETTE	~~£8.95~~	**£6.70**
WORLD CLASS LEADERBOARD CASSETTE	~~£9.99~~	**£7.50**
DR. WHO CASSETTE	~~£8.95~~	**£3.95**
EXOLON DISC	~~£14.95~~	**£11.25**
BLACK MAGIC DISC	~~£14.99~~	**£11.25**
THE EDGE CLASSICS DISC	~~£12.99~~	**£9.75**
WHIZZ BALL DISC	~~£14.95~~	**£11.25**
WORLD CLASS LEADER BOARD DISC	~~£14.99~~	**£11.25**
DR. WHO DISC	~~£13.95~~	**£6.95**

PLEASE ADD 0.95p P&P

SUPER POWER

ORDER NOW FROM

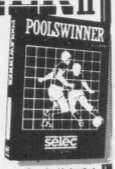
SOFTWARE BARGAINS DEPT CW
8/A REGENT STREET
CHAPEL ALLERTON
LEEDS LS7 4PE
TELEPHONE: 0532 687735

ANSAPHONE OUT OF OFFICE HOURS

VISA

POOLSWINNER II

THE ULTIMATE POOLS PREDICTION PROGRAM



Boxed, with detailed instruction booklet

- **MASSIVE DATABASE** Poolswinner is a sophisticated Pools prediction aid. It comes complete with the largest database available – 22000 matches over 10 years.
- **PREDICTS** Not just SCOREDRAWS, but AWAYS, HOMES and NO SCORES.
- **SUCCESSFUL** SELEC guarantee that Poolswinner performs significantly better than chance.
- **ADAPTABLE** Probabilities are given on every fixture – choose as many selections as you need for your bet. The precise prediction formula can be set by the user – you can develop and test your own unique method.
- **SIMPLE DATA ENTRY** All team names are in the program. Simply type in the reference numbers from the screen. Or use FIXGEN to produce fixture list automatically (see below).
- **LEAGUE AND NON-LEAGUE** All English and Scottish League teams are supported, and also the non-league sides often used on pools coupons.
- **PRINTER SUPPORT** Full hard copy printout of data if you have a printer.

PRICE £15.00 (all inclusive)

FOOTBALL FOLLOWER

RESULTS DATABASE SYSTEM

Boxed, with detailed instruction booklet

- **THE PERFECT PROGRAM** for everyone interested in Football – Soccer Fans, Pools Punters, amateur league secretaries and team managers.
- **POWERFUL DATABASE** designed to store league results and all important statistics for all clubs.
- **SET UP** to handle English and Scottish league matches, but can be easily converted to non-league, amateur and Australian football.
- **FULL PRINTER SUPPORT:** Fixture lists, results, league tables, statistical records etc. can be printed out if you have a printer, or copied from the screen.
- **UPDATED:** The package is supplied with this season's football results already entered into the program.
- **INTEGRATED** with POOLSWINNER and FIXGEN: information can be exchanged between programs. (Can be used to update Poolswinner.)

PRICE £15.00 (all inclusive)

FIXGEN 87/8

AT LAST: No more struggling for hours to get the fixture list into the computer. FIXGEN has been programmed with all English and Scottish League fixtures for 1987/8. Simply type in the date, and the full fixture list is generated in seconds. Fully compatible with Poolswinner and Football Follower. Yearly updates available. (Published under licence from the Football League and Scottish Football League.)

POOLSWINNER with FIXGEN £16.50 (for both)
FOOTBALL FOLLOWER with FIXGEN £16.50 (for both).

SPECIAL COMBO PACK

FOR SOCCER FANS, the best combination is Football Follower with Fixgen.
FOR POOLS PUNTERS who want a ready made system, Poolswinner with Fixgen is the best combination.
FOR POOLS PUNTERS who want to do more detailed analysis and develop their own system, the complete suit of all three programs is available at a special price:

POOLSWINNER+FOOTBALL FOLLOWER+FIXGEN
£26.50 (all inclusive) (ask for "COMBO PACK")

Boxed, with detailed instruction booklet

COURSEWINNER V3

THE PUNTERS COMPUTER PROGRAM

NOT JUST A TIPSTER PROGRAM, Coursewinner V3 can be used by experts and occasional punters alike. You can develop and test your own unique winning system by adjusting the analysis formula, or use the program in simple mode. Coursewinner V3 uses statistical analysis of major factors including past form, speed ratings, course statistics, prize money, weight, going, trainer and jockey form etc, etc. It outputs most likely winners, good long odds bets, forecasts, tricasts etc. The database includes vital course statistics for all British courses. You can update the database – never goes out of date. *FULL PRINTER SUPPORT.*

PRICE £15.00 (all inclusive) Includes Flat AND National Hunt versions.

AVAILABILITY . . .
All programs available for:
AMSTRAD CPC's, PCW's, PC1512
All BBC's
All SPECTRUMS
COMMODORE 64/128
All programs supplied on tape, but automatically transfer to disc or microdrive.
AMSTRAD PCW and PC1512 supplied on disc (add £3.00).

Send Cheques/POs for return of post service to . . .

VISA phone 24 hrs

selec SOFTWARE

phone 24 hrs

37 COUNCILLOR LANE, CHEADLE, CHESHIRE SK8 2HX. ☎ 061-428 7425

(Send for full list of our software)

VERY HIGH QUALITY VERY LOW PRICES

5.25" COMPUTER DISKS - BULK PACKED - TOP QUALITY

QTY	SS 48TPI	SS 96TPI	DS 48TPI	DS 96TPI	DS 48 C/R	DS 96 C/R
10	£5.95	£6.95	£6.95	£7.95	£8.95	£9.95
25	£10.99	£11.99	£11.99	£12.99	£14.99	£17.99
50	£19.99	£20.99	£20.99	£21.99	£27.99	£32.99
100	£36.99	£37.99	£37.99	£41.99	£45.99	£57.99
150	£52.99	£55.99	£55.99	£57.99	£63.99	£80.99
250	£85.99	£87.99	£87.99	£91.99	£103.99	£126.99

C/R = Coloured or reversible disks - reversible disks have two holes and two notches!
Boxes of 10 disks are supplied in plastic cases (worth £1.49).
These disks are packed with a protective jacket (envelope) and come with a full user set, including a label and a write protect tab. The disks are manufactured to top international standards and have a hub ring for added protection.

3.5" COMPUTER DISKS - BULK PACKED - with labels etc . . .

QTY	SS 135TPI	DS 135TPI
10	£14.95	£16.95
25	£29.95	£35.95
50	£55.95	£62.95
100	£105.95	£119.95
150	£149.95	£169.95
250	£239.95	£269.95

STORAGE BOXES

THE BEST RANGE!

Lockable Storage Boxes from Centec

3.00" Lockable–Holds 60	£9.95
3.50" Lockable–Holds 40	£7.99
3.50" Lockable–Holds 90	£9.95
5.25" Lockable–Holds 50	£7.99
5.25" Lockable–Holds 100	£9.95

COMPUTER MONITORS – FULL RANGE STOCKED – BEST

Philips CM 8833 – Colour Monitor IRGB for Nimbus/BBC/Atari etc	£269.95
Philips CM 8852 – Colour/RGB/TTL/Linear Inputs	£299.95
Philips BM 7502 – High Res Green Screen Monitor – Composite	£79.95
Philips BM 7522 – High Res Amber Screen Monitor – Composite	£89.95
Philips BM 7542 – High Res White Screen Monitor – Composite	£89.95
Microvitec 1431 – Standard Resolution Colour Monitor	£179.95
Microvitec 1451 – Medium Resolution Colour Monitor	£229.95
Microvitec 1441 – High Resolution Colour Monitor	£379.95

REMEMBER – All Monitors are delivered free by Securicor! No extras to pay!

CENTEC ELECTRONIC SYSTEMS LTD
UNIT 3, THE METRO CENTRE
BRIDGE ROAD, ORPINGTON
KENT BR5 2BE
TEL: (0689) 35353 (24 hours)
Remember - all prices include VAT and delivery !
There are no hidden extras to pay!

VISA

MIDCOMM INTERNATIONAL

COMPUTER REPAIRS

Communications and Computer Specialists

Midcomm International Ltd is a company that specialises in computer repairs and can offer you the following 5 STAR service.

- ★ Repairs carried out to manufacturers requirements. using the most up to date diagnostic and test equipment available
- ★ Skilled technical staff
- ★ Modern customised workshops
- ★ 4 hour soak test on rack repair.
- ★ All repairs guaranteed.

For a fast, efficient, reliable and professional service, call with or send your computer together with a brief description of fault to:
(If the computer is to be sent by mail please insure it at the Post Office)

Midcomm International Ltd.
Unit F, Birch Industrial Estate,
Whittle Lane, Birch, Heywood,
Lancashire OL10 2RB.

Telephone: 0706 625 166

VISA

A pressing appointment

IAN SHARPE on Logo's conditional and keyboard input commands

I EXPLAINED last month how variables are used to store a value for later use in a program. I also left you with the tasks of writing two procedures, one that would take two parameters and use them to draw a regular polygon; the other to return the average of two numbers.

The most obvious way of writing **poly** is like this:

```
to poly :sides :size
repeat :sides
    [
    fd :size
    rt 360 / :sides
    ]
end
```

and typing:

```
cs
poly 4 100
```

will draw a square with sides 100 units long. A circle is a polygon with an infinite number of sides but a computer screen has a limited resolution so you can approximate circles by specifying a large number of sides:

```
cs
poly 50 10
```

You've probably noticed how slow Logo is. In **poly** the angle is calculated each time round the loop in the fifth line of the procedure. For a given value of *sides* the result of the calculation is always the same.

So by calculating the angle every loop cycle the program is doing unnecessary work. If we do the calculation once before the loop starts, it

```
to poly :sides :size
make "a 360 / :sides
repeat :sides
    [
    fd :size
    rt :a
    ]
end
```

should run faster.

Try timing how long it takes to draw a circle with the two methods, you'll find the second **poly** is quicker.

With a little thought it's often possible to improve a procedure so that it either runs faster or uses less memory, sometimes both.

Things that stand out about procedures or programs that can be improved in this way, are that they tend look untidy, cluttered and use lots of instructions to do a simple task.

Moving on to the average number problem, the following will serve as an example of this same point. I suspect those of you who haven't programmed before will have spent some considerable time coming up with the first of these **average** procedures, or something like it.

```
ts
to average :num1 :num2
make "var :num1 + :num2
make "var :var / 2
op :var
end
average 1 2
to average :num1 :num2
op (:num1 + :num2) / 2
end
```

The second version, however, gives the same result using less memory and is quicker because there are fewer instructions. It also looks neater and is easier to understand.

If you haven't already guessed, the round brackets (or parentheses) change the order in which an expression is evaluated. If you miss them out here, Logo will work out *:num2 / 2* first and add the result to *:num1*.

We can write a program where a particular set of instructions is only executed if a given condition is true, otherwise it skips over them or perhaps executes an alternative sequence.

In this way we can give programs rules so that different courses of action are taken according to the circumstances. Logo has a powerful command to cater for this – **if** which can be used in two ways, as the following procedures will illustrate.

```
to test1 :num
if (:num=6) [ pr [that's six] ]
pr "finished
end
to test2 :num
if (:num=6) [ pr [that's six] ]
            [ pr [not six] ]
pr "finished
end
```

Type those in and enter:

```
test1 6
test1 7
test2 6
test2 7
```

The rule for **if** is: If the condition in round brackets is true, Logo executes the list of instructions in the square brackets that follow. So in either of the procedures, if you type its name followed by 6 you'll see *that's six* printed on the screen, followed by *finished*.

If the condition isn't true – the number isn't six – there are two possibilities. In **test2** there's an alternative set of instructions – also in square brackets – executed when the condition is false. So with **test2**, passing a parameter other than 6 will print the second message.

When you do pass 6, the first message is printed and execution skips over the alternative instructions and starts again at the finishing message.

In **test1** when the condition is false there isn't an alternative set of instructions, so Logo jumps over the list in square brackets and carries on.

Having demonstrated the principle let's look at some more examples and use the opportunity to read input from the keyboard. Before we do, however, you'll be wondering about the square brackets after **pr** in the last two procedures.

Up to now we've been feeding **pr** with the output from a variable, a word preceded by a single quote, a number or the output from another procedure. If you want to print a message consisting of several words supply **pr** with several words in a form that constitute one object. I said in a previous article that putting square brackets round a group of objects makes them into a list. A list is a single object that may contain several items, so putting the message in square brackets:

```
pr [hello there fred]
```

will cause **pr** to print out the list with a carriage return at the end – just what

Turn to Page 42 ▶

◀ *From Page 41*

we want.

Right, back to the keyboard. Programs often need to get information from whoever is using the computer and of course Logo has commands to handle keyboard input. The simplest is **rc** which is short for read character. This waits for you to press a key and when you do it outputs the character typed.

```
to test
make "char rc
pr :char
end
```

In the second line **rc** waits for you to press a key and the typed character is put into the variable *char*. The third line simply prints *char* on the screen. Let's develop that a bit further.

```
to test
pr[Gimme an "a"]
make "char rc
if (:char="a)
   [ pr[Thanks very much] ]
   [ pr[Can't you read?] test ]
end
```

The first three lines are self explanatory. The **if** statement is the type that has alternative sets of instructions. If you press the A key (unshifted), the condition in parentheses is true, so the first set of square brackets is executed.

If you didn't press the right key, the second set of instructions is taken instead. In this case, when the rude message has been delivered the procedure is run again until you get it right.

Here's another example, this time using graphics. It waits for you to press L, R or F (for left, right and forward) and moves the turtle accordingly.

The only new features here are **label** and **loop**. These provide a means of jumping to another part of a procedure, so when the three **if** statements have been dealt with, Logo jumps back to the point identified by **label**.

Instead of the procedure running just once, the instructions between **label** and **go** are executed endlessly because **end** is never reached. If you want to stop the procedure, press Escape.

```
to doodle
cs
pr[press l,r or f]
label "loop
make "char rc
if(:char="l) [ lt 6 ]
if(:char="r) [ rt 6 ]
if(:char="f) [ fd 8 ]
go "loop
end
```

You can't jump to another procedure. When it finds a **go** command Logo only looks inside the current procedure for a corresponding **label**. It's possible to have several **go**s and **label**s, but the fewer there are the better.

Perhaps you can add to **doodle**? How about a means of lifting and lowering the pen, backing up the turtle, clearing the screen and so on?

Experiment with a **go "loop** after **lt 6** and **rt 6** and see how it speeds things up. How about commands which use **poly** to draw triangles, squares and circles?

● *Next time we'll meet other ways of reading the keyboard, and have a preliminary look at lists.*

K & M COMPUTERS DISCOUNT SOFTWARE

NEW LOWER PRICES

ADVENTURE	CASS	DISC
Murder on the Atlantic	£11.95	£15.95
The Pawn 6128 Only	–	£15.95
Shadows of Mordor	£8.99	* –
Hitch Hikers Guide	–	£21.95
The Hobbit	£11.95	–
Passengers on the Wind	£10.95	£12.95
Silicon Dreams	–	£17.95
Jewels of Darkness	–	£15.95
Mystery of Arkham Manor	£6.99	–
Bureaucracy	–	£29.95
COMPILATIONS		
Comp. Hits Five	£6.95	£10.95
Comp. Hits 6 Volume II	–	£11.95
Comp. Hits 6 Volume III	–	£11.95
Hit Pack Six	£7.99	£11.95
5 Star Vol 2	£7.99	£11.95
Comp. Hits 10 volume III	£7.99	–
Triple Gold	£7.99	£11.95
Sold a Million II	£7.99	£11.95
Sold a Million III	£7.99	£11.95
Amtix Accolades	£7.99	£11.95
Hit Pack	£7.99	–
Konami Coin Op Hits	£7.99	£11.95
Now Games 4	£7.99	–
Classic Collection	£7.99	£11.95
Durell Big 4	£7.99	£10.95
Trio (Elite)	£7.99	£11.95
STRATEGY/SIMULATION		
Footballer of the Year	£7.99	–
F15 Strike Eagle	£7.99	£12.95
Scalextric	£7.99	£11.95
Silent Service	£7.99	£11.95
Ace	£7.99	£11.95
Acrojet	£7.99	£11.95
Strike Force Harrier	£7.99	£11.95
World Class Leaderboard	£7.99	£11.95
T T Racer	£7.99	–
Leaderboard (Tournament)	£4.50	£9.50
Battlefield Germany	£10.95	£14.95
Trivial Pursuit	£11.95	£15.95
Brian Clough F.F.	£11.95	£14.95

ARCADE	CASS	DISC
Tai Pan	£6.99	£11.95
Academy	£7.99	–
Convoy Raider	£7.99	£11.95
Dr. Livingstone	£6.99	–
Quartet	£7.99	£11.95
Head over Heels	£6.99	£11.95
Enduro Racer	£7.99	£11.95
Leviathan	£6.99	£11.95
Tank	£6.99	£11.95
Elite	£10.50	£13.95
Starglider	£11.95	£15.95
Sky Hunter	£7.99	£11.95
Wonderboy	£7.99	£11.95
Mario Bros	£6.99	£11.95
Dogfight 2187	£7.99	£11.95
Rana Rama	£6.99	£11.95
Game Over	£6.99	£11.95
Metrocross	£7.99	£11.95
Army Moves	£6.99	£11.95
Slapfight	£6.99	£11.95
Last Ninja	£7.99	£11.95
Paperboy	£6.99	£11.95
Mutants	£6.99	£11.95
Arkanoid	£6.99	£11.95
World Games	£7.99	£11.95
Asphalt	£7.99	£11.95
Super Soccer	£6.99	£11.95
Road Runner	£7.99	£11.95
Prohibition	£7.99	£11.95
Samurai Trilogy	£7.99	£11.95

ACCESSORIES

Amsoft 3" Discs £27 for 10 each £2.75
AMX Mouse & Art Package £59.95
Cover Set PCW £11.95
Cover Set DMP 2000 ..... £4.50
MP2 Modulator £28.95
Amstrad DMP2000 Printer Ribbon £5.50

JOYSTICKS

Cheetah Mach 1 ..... £14.50
Konix Speeding £10.95

BUS/UTIL	DISC
Art Studio 6128 only	£15.95
Mini Office II	£15.95
Plan It	£15.95
Adv. Art Studio	£20.95
Adv. Music System	£24.95
Protext	£21.95
Masterfile III	£34.95
Tasprint	£10.95
Tascopy	£10.95
Bibliomagic (Sinel)	£11.95
Pagemaker/StopPress	£42.95
Tas Sign 6128/PCW	£25.95

PCW SOFTWARE

Head over Heels	£11.75
Datafile I	£25.95
Batman	£11.75
Cyrus II Chess	£12.75
Newsroom	£59.00
Tomahawk	£15.75
Strike Force Harrier	£15.75
Jewels of Darkness	£15.75
Silicon Dreams	£15.75
Starglider	£19.99
Arkanoid II	£99.00
Trivial Pursuit	£15.75
The Pawn	£20.75
Locoscript II	£18.50

PC1512 SOFTWARE

Cyrus II Chess	£15.75
Volkswriter Deluxe	£37.99
Summer Games	£15.75
Jewels of Darkness	£15.75
Pinstop II	£15.75
Silent Service	£20.75
Financial Controller	£949.99
F15 Strike Eagle	£15.75
Trivial Pursuits	£15.75
Cambase	£42.95
Starglider	£15.95

"All prices include post and packing" "In stock items sent by return" "All budget titles stocked £5.50 for 3 (£1.99)"
"We also have an extensive range of C.P.C. Software for hire-free membership – send for details"
"Cash with order or send for full lists" "EEC & Europe at no extra charge" "Other overseas add £2 (Software only)"
"British postal orders or sterling cheques" "24hrs phone 0695 29046" "All new releases on day of release"

****NEW****DIGITISING SERVICE****PHONE FOR DETAILS****NEW****

K & M COMPUTERS
40 Fairstead, Birch Green, Skelmersdale, Lancs WN8 6RD

SCHOOL SOFTWARE LTD.

FREE Catalogue Amstrad CPC, PCW, PC1512, Commodore, BBC, IBM PC
Amstrad PCW – Business Software, School Admin. PC. 24 Hr. Visa/ Access Hotline. Ring UK010353 - 6149477 (Office Hours) or 6145399 (Answerphone). (Int. 061 - 27994)

MAXI MATHS (age 9-14)
Amstrad PC, IBM PC, Amstrad 464,664,6128.
1. Triangles, 2. Angles, 3. Sin Cos Tan, 4. Rectangles, 5. Circles.
A highly interactive program such as Basic Geometry provides a very stimulating learning environment.

MAGIC MATHS (age 4-8)
CBM 64, All Amstrads, IBM PC
Addition and Subtraction " A serious challenger to similar BBC programs and a good example of its type". Primary Teaching and Micros UK.

MATHS MANIA (age 8-12)
All Amstrads/CBM 64/IBM PC
Multiplication and Division. "It appeals to the age group. My son has been moaning downstairs before breakfast to play".
BBC CEEFAX review

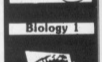
BETTER SPELLING (age 8-adult)
All Amstrads/CBM64/BBC/IBM PC
"Well Organised Lessons. Educationally it is very strong" 8000 Plus.

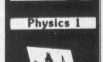
BETTER MATHS (age 12-16)
All Amstrads/CBM64/IBM PC
Rated in the top five in Amstrad Action educational survey.

CHEMISTRY (age 12-16)
All Amstrads/CBM64/BBC/IBM PC
"Very ambitious in terms of the range of topics. High standard of questions" 8000 Plus.

BIOLOGY (age 12-16)
All Amstrads/CBM64/BBC/IBM PC
"A good excuse to play with your computer and have fun while revising" Your Computer.

Mapwork Quiz (9-adult) CPC, BBC, CBM64
Playschool (3-7) CPC
Geography (12-17) CPC
Physics (12-16) CPC/PCW
School Administration PC1512/IBM £149





DISCS: £14.95 CASSETTES: £9.95
Direct MAIL ORDER 48 Hour Despatch.
Send Cheque Visa/Access/and Exp. Date
(£1.00P&P) PC Versions Check Availability.

Meadowvale Estate, Raheen, Limerick, Ireland.
Tel: (UK) 010-353-61 45399 (IRL. 061-27994)

Think BIG and get yourself noticed

IAN SHARPE finds Tas-Sign a way to get good notices

ADDING a printer to your computer can transform it from an expensive toy into a genuinely useful piece of equipment. For most people printers mean word processing, hard copy from spreadsheets or databases, graphics or program listings.

Now Tasman, author of one of the two most popular Amstrad word processors and many other printer-related programs, has added another use to the list of possibilities.

In conjunction with your CPC6128 or PCW8256/8512 and dot matrix printer Tas-Sign will enable you to produce sign writing in a variety of styles and sizes. It runs under CP/M plus and is a surprisingly versatile piece of software.

Tas-Sign differs from simple "big character" programs in the range of layout options and the quality of its output. Whatever scale of magnification you apply to the characters, slopes and curves are always drawn at the limit of resolution of your printer.

So a C eight inches high is not composed of an 8 x 8 matrix with inch tall rectangular pixels. Instead it's a smooth curve, and only if you look very closely does the stepping (or aliasing) become visible.

Tasman has achieved this by storing the character shapes as mathematical descriptions rather than matrixes as found in your CPC6128 manual. To look at it another way, a circle drawn using a formula to calculate the position of the points will be smooth if enough points are used, whereas drawing a large circle by simply magnifying one plotted in a matrix will produce a crude, chunky shape.

Four character sets are supplied: Standard, Western, Casual and Block. Casual looks as though it has been produced with a nib or brush and Block is a stencil-style font. Each can be printed in a huge range of sizes with a horizontal stretch factor, either normally or in italics and with optional underlining or inversed colours.

There is no facility to design your own character set. At first this might seem like an omission, but the complex way in which characters are stored would make writing such a utility a far from trivial task.

With this in mind, it's a pity that a set of graphics characters wasn't included as this would have greatly enhanced the package. Space is tight on the disc, but there is room for one more font, so how about it chaps?

Characters are plotted in one of a choice of fill styles, ranging from solid through various combinations of horizontal and diagonal stripes.

The patterns can be printed in single or double strike, single or double density and there's an option to have the print head make an additional pass to fill in the spaces between dots. The fill pattern can also be used to surround the finished article with a border.

The ability to draw outlines of characters, leaving the centres blank, would have been useful, because I think it might be preferable on larger signs to spare your printer ribbon and fill in the shapes with poster paint.

As well as character size, font and fill style, the program offers control over most other aspects of the finished appearance.

There are three spacing options. Characters can be printed at a regular pitch or proportionally, in other words the spacing is adjusted according to the letter involved to give a more even appearance. The latter option can be further refined to include kerning where letters that overlap, such as the combination WA, are placed closer together.

Text can be printed horizontally for smaller signs or vertically for large banners. The gaps between lines are definable and commands to centre text on the page or align it with the right edge complete the picture.

The text of your sign is input row by row in the editing screen, which is shown in Figure I. You don't design your sign on-screen – instead the final appearance is controlled by setting the various options and embedding commands in the text.

The best approach is to have your sign planned on paper with the settings and commands worked out before using the program.

The commands can be referenced either from the manual or by scrolling the Help screen to the appropriate point. As well as setting up the various options in the editing screen, the facility to embed commands can be used to turn on underlining or swap to

Turn to Page 44 ▶

◀ *From Page 43*

another font or fill style part way through printing the sign.

When you've finished inputting the information you can save it to disc and all that remains is to let Tas-Sign get on with the printing. For all but the smallest pieces this is the walk-away-and-leave-it type operation familiar to rhubarb growers and Mandelbrot set plotters the world over.

Despite Epson control codes being an industry standard, printers do vary and Tasman has provided a selection of configurations for popular printers with the facility to define customised drivers.

The manual runs to 31 pages and includes a tutorial section. It is complete, but I needed to read some parts several times and do some experimenting before I was clear on some points.

There are also several examples on the disc, so by the time you've worked through them you'll have an understanding of the basics. If you have any problems, Tasman has a reputation for being particularly helpful.

Although there is some error-trapping, it has to be said that it's possible to confuse the program. For instance, embedding a command in the top line of text to make some characters taller than the overall setting causes it to lock up. In this case you need to make the top row as tall as the tallest letters and reduce the size where appropriate. Make sure you save your sign before printing it!

Tas-Sign is a very flexible piece of software and because of that I haven't been able to mention all of its many features.

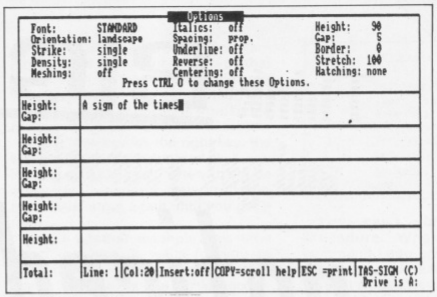


Figure I: The editing screen

At £29.95 it's probably a little bit pricey for the casual user. But anyone who regularly needs good quality sign writing in small quantities will find this a comprehensively featured piece of software that could earn its keep.

Product: Tas-Sign
Price: £29.95
Supplier: Tasman Software, Springfied House, Hyde Terrace, Leeds LS2 9LN.
Tel: 0532 438301

DISC WIZARD

NOT APPROVED BY AMSTRAD (for obvious reasons)

TAPE TO DISC MADE SIMPLE

STAND ALONE SOFTWARE NOW AVAILABLE

If you are planning to purchase a hardware based tape to disc utility then look no further. **Disc Wizard** is the only product of it's type that will allow software to be reloaded **independently** of the hardware. No wonder it is not approved by Amstrad. Tests conducted by ourselves and independent users have convinced us that **Disc Wizard** offers all these advantages over all other similar products . . .

- **EASE OF USE, very simple to operate and using Disc Adjuster to make screen corrections, etc. is far easier than other methods.**
- **SUCCESS RATE, at least as good, probably better than other products in normal mode. PLUS 80-85% can be converted to stand alone. i.e., reload independent of hardware.**
- **PRICE, a substantial saving over comparable products.**
- **QUALITY, new injection moulded case.**
- **FITS 464/6128 PROPERLY, no linking leads or obscured ports.**

WHY PAY MORE FOR LESS?

DISC WIZARD c/w Disc Adjuster on cassette Only **£29.95**
DISC WIZARD c/w Disc Adjuster and Stand Alone Software on 3" disc Only **£34.95**
Stand Alone Software on 3" disc for existing owners Only **£4.95**

HOW TO ORDER

BY PHONE Ring and quote your Visa/Access number
BY POST Send letter with Cheque, P.O. or Visa/Access No.

EVESHAM MICROS
63 BRIDGE STREET
EVESHAM
WORCS. WR11 4SF
Tel: (0386) 41989

ORDERS NORMALLY DESPATCHED SAME DAY. CALLERS WELCOME

Also at: **1756 Pershore Road, Cotteridge, Birmingham.**
In Australia contact: **MICRO ACC. of S.A. (08) 297-0191**

From NEMESIS (The Original Meddlers)

BONZO SUPER MEDDLER (FOR ANY CPC)

THE dedicated TAPE TO DISC utility

NOW including the devastating

BONZO'S HACK PACK

THE FACTS

BONZO SUPER MEDDLER is GUARANTEED TO TRANSFER MORE GAMES THAN ANY OTHER PROGRAM; THE FIRST PERSON TO FIND A MORE SUCCESSFUL PROGRAM WILL RECEIVE THRICE THEIR MONEY BACK!!

Sounds familiar? BONZO always could transfer more – FACT! **BONZO SUPER MEDDLER** will transfer "thousands", but WE include full details of how to transfer **OVER 500 TOP GAMES.**

MORE FACTS

BONZO SUPER MEDDLER does NOT use a massive "host" program to run the transferred games. ALL transfers "stand alone".
BONZO uses LESS memory, transfers MORE, COSTS LESS and gives REAL support to the user.
We'll allow you £2.00 for your old D.P. disc in part exchange!
BSM tapes upgraded to BSM+HACKPACK DISC . . £8.00 (send inlay)

BSM & HACKPACK DISC £11.50. Only

NEW! **BONZO'S DOO – DAH**

"This is the best I've seen in a long while . . .I recommend it" – Amstrad Action, June 87

BIGBONZO FORMAT

Features
A REALLY USABLE 203K per SIDE FORMAT, complete with the essential disc file transfer facility without irritating restrictions – files of over 42K READILY transfer between any mix of FORMATS. FORMATS RAPIDLY including all standard.
A "NOTHING HIDDEN" FULL CATALOGUE. COMPLETE DIRECTORY EDITOR. TRACK/SECTOR EDITOR – in HEX or ASCII. (A FULL SECTOR or DIRECTORY displayed to the screen, with easy EDIT mode).
FILE LOCATIONS by TRACK/SECTOR. RAPID DISC SEARCH – HEX-ASCII.
A WIDE RANGING DISC to DISC COPIER, PRINTER OUTPUT etc. etc.
ALL WORK ON NORMAL, ENLARGED, AND most "funny" formats.
FULL USE OF DRIVE A/B where fitted – no problem with one.

MANY UNIQUE FEATURES. Supplied on **DISC £11.50**

NEW! **BONZO BLITZ** –NEW SPEEDLOCK's to DISC!!
Arkanoid, Army Moves, Xevious, Top Gun, BMX Sim. Donkey Kong. Mikie. Gprix Sim. Leaderboard Tour. Goonies, Gameover, Metro-Cross, Slapfight, Mag-Max, etc., NO PROBLEM!

Just one key press ! DISC Only – just **£10.00** inc.

ALL WITH FULL INSTRUCTIONS. We give FULL after sales support and a regular NEWSLETTER.
Overseas please add £1.00 to total. **ORDERS** with cheque/postal, sent by return post:

NEMESIS (CWA)
10 Carlow Road, Ringstead, Kettering, Northants NN14 4DW.

PAINTING BY NUMBERS

IAN SHARPE expands the idea of mathematical trees to produce some attractive landscapes

IN the March 1987 issue of *Computing with the Amstrad* we introduced you to recursion and fractals in our Dragon Curve program. It generated a lot of interest so here is something more on a related subject – trees.

We had a look at these back in May 1985 but the method was crude and this time we're going to put the results to some use.

Trees caught my attention in *Microcomputer Graphics* by Mike Batty (Chapman Hall 1987 ISBN 0 412 28540 1). The author introduces simple graphics routines and develops them into interesting picture generating programs.

Poor old Mike uses the BBC Micro for his examples (we all have our crosses to bear), but BBC Basic does have procedures which can be called recursively with local variables and Mike takes advantage of these features to generate his trees.

Of course we don't have procedures on the Amstrad and using Robin Nixon's bolt-on routine from the May 1987 issue would have been admitting defeat. So I set about writing my own tree routine to get round the problems and came up with Program I. It's not an adaptation of the BBC Micro version but a different way of producing the same results.

The idea is that the tree is composed of branches, and at the end of each two new branches grow. At the tip of the new branches are two more and so on. You can see what I mean in Figure I.

Before we see how it works try it out for yourself. You will be prompted for three parameters – angle, depth and size. Angle is the angle of the V between two branches, depth is the number of times the tree is to subdivide and size is the length of the stem between its start and where it first splits into two. To begin with, try values of 45, 8 and 110 respectively. Also have a look at 120,10,150,180,10, 200 and 270,10,200.

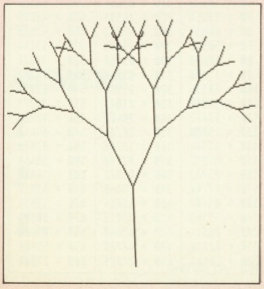


Figure I: A simple tree

What happens is that every time a V is drawn the program calculates the coordinates of the tips. It takes the right-hand fork, draws a line to the tip and in the array *stack* it stores the details – size, coordinates, angle – of the left-hand tip which it can't deal with yet. It repeats the process, always taking the right fork and storing the left until it has gone to the required level held in *depth*.

If you think about it, the maximum number of left shoots stored in *stack* can't be more than *depth*. When the required number of shoots have been drawn by taking right turns, the routine backtracks in *stack* to the details of the last left turn it missed. The program uses a pointer – *sp* – to keep track of which part of *stack* it is taking its parameters from.

It follows this new route, again always forking right and remembering places it needs to come back to. In this way nothing is left out and eventually the entire tree is plotted. At this point there are no more parameters stored in *stack*. The program detects this and comes to an end.

To obtain the trunk, *stack* is initialised with just enough information for one leg of the first V.

Program II – Landscape – uses a

Turn to Page 46 ▶

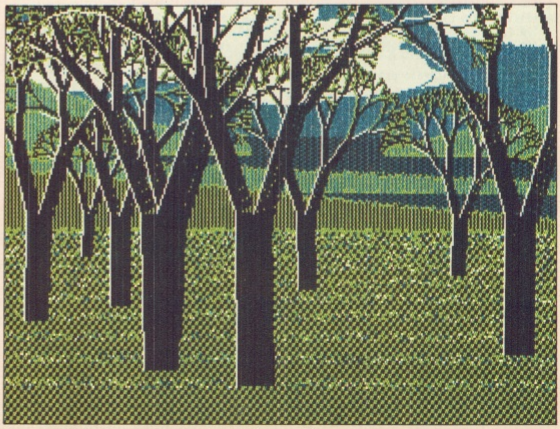


Figure II: Typical landscape created by Program II

◀ *From Page 45*

modified tree routine to introduce thickness, colour and some random elements to the branches which gives an impression of a real tree with spring foliage.

Using more ideas borrowed from Mike Batty other parts of Program II draw clouds, water, hilly background and a foreground. Again these are controlled by overall rules with random factors, so a different but convincing arrangement emerges every time the program is run.

One such scene is shown in Figure II and I think you'll agree that it isn't bad for something created by a few dozen lines of Basic.

I don't make any claims for its artistic merit but it's far better than I could achieve by hand. Landscape isn't perfect, but it's fairly simple and like many of the programs we publish, it's the starting point for your own ideas.

This program illustrates one of the fundamental points in *Microcomputer Graphics*. Mike Batty is at pains to highlight the distinction between art on a computer and computer art. The first is where the artist uses a drawing package to create pictures on the screen.

He isn't doing anything different to his colleague working with paints, just using a different medium, though the coarseness of a home computer display makes the level more akin to embroidery or tapestry.

In the second case, computer art, the computer generates the picture from a model programmed by the artist. This is a new concept brought about by the availability of machines which are programmable and have good display capabilities. It opens up a new world of creative graphics to conventional artists and those who have artistic inclinations but may lack the manual skills.

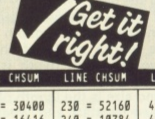
I'll leave you to ponder two questions that puzzle a lot of people – is computer art really art and if so, does the art lie in the program or in the display on the screen?

If you want to see some impressive graphics created on main-frames with very high resolution displays, ask at your library for *Creative Computer Graphics* by Jankel and Morton (Cambridge University Press 1984 ISBN 0 521 26251 8). It'll remove any doubts on the first point and give you food for thought on the second.

```
10 REM        Program I - Trees
20 REM           by  Ian C. Sharpe
30 REM (c) Computing with the Amstrad
40 REM ------------ CPC -------------
50 DEFINT a-z:DEG:MODE 1
60 INPUT"angle,depth,size? ",angle,depth
,size
70 DIM stack(depth,3):stack(sp,0)=0:stac
k(sp,1)=0:stack(sp,2)=angle/2:stack(sp,3
)=depth+1
80 CLS:ORIGIN 320,10:sp=0:i=1
90 REM ------------------------------
100 f=stack(sp,3)-1:IF f=0 THEN sp=sp-1:
IF sp=-1 THEN END ELSE 100
110 x=stack(sp,0):y=stack(sp,1):a=stack(
sp,2)
120 s=size*0.75↑(depth-f-1)
130 a(0)=a-(angle/2):a(1)=a+(angle/2)
140 tx=x+s*SIN(a(0)):ty=y+s*COS(a(0))
150 MOVE x,y:DRAW tx,ty
160 GOSUB 190:GOSUB 190
170 sp=sp+1:GOTO 100
180 REM ------------------------------
190 i=i XOR 1
200 stack(sp+i,0)=tx:stack(sp+i,1)=ty
210 stack(sp+i,2)=a(i):stack(sp+i,3)=f
220 RETURN
```

Program I: The basic tree routine

```
10 REM      Program II -  Landscape
20 REM           by  Ian C. Sharpe
30 REM (c) Computing with the Amstrad
40 REM ------------ CPC -------------
50 DEFINT a-z:DEFREAL r,w
60 RANDOMIZE TIME:DEG:DEF FNrn(r)=CINT(R
ND*r)
70 MODE 1:BORDER 1:INK 0,0:INK 1,11:INK
2,18:INK 3,26
80 REM --- Sky & big fluffy clouds ---
90 PAPER 1:CLS:PAPER 0
100 FOR clouds=1 TO 5+FNrn(2)
110 cloudx=30+FNrn(580):cloudy=330+FNrn(
10*clouds)
120 FOR fluffybit=1 TO 4+FNrn(2)
130 ex=cloudx-50+FNrn(100):ey=cloudy-30+
FNrn(60)
140 er1=60+FNrn(8*clouds):ratio=0.1+RND*
0.2
150 GOSUB 380:NEXT:NEXT
160 REM ---- Sea, ground & hills -----
170 LOCATE 1,9:PRINT STRING$(200,127);
180 PEN 2:PRINT STRING$(240,206);STRING$
(240,206);:PEN 1
190 FOR dy=0 TO 12:y=182-dy*dy
200 FOR x=0 TO 638 STEP 2:PLOT x,y+FNrn(
8),1+FNrn(2)
210 NEXT x,dy
220 FOR hills=1 TO 3+FNrn(1)
230 hy=290-hills*35:ht=(6-hills)*11:wlhl
=(0.15+RND)/3:lift=ht+FNrn(ht/10):clip=F
Nrn(ht/6):offst=FNrn(200)
240 col(0)=2:col(1)=FNrn(1)
250 GOSUB 450:NEXT
260 REM -------- Grow some trees -------
270 FOR size=40 TO 160 STEP 15:RANDOMIZE
 TIME
280 treey=200-size:treex=20+FNrn(600):tr
eewid=CINT(size/4)
290 IF TEST(treex,treey+30)<>2 THEN 280
300 angle=FNrn(6)-44:depth=8+FNrn((size-
40)/40)
310 DIM stack(depth,3)
320 stack(0,0)=0:stack(0,1)=0:stack(0,2)
=angle/2:stack(0,3)=depth+1
330 ORIGIN treex,treey:sp=0:i=1
340 GOSUB 500:ORIGIN 0,0:ERASE stack:NEX
T
350 REM  = Press Space when finished =
360 PRINT CHR$(7);:WHILE INKEY(47)<>0:WE
ND:RUN
370 REM  ===== Elipse for clouds =====
380 ORIGIN ex,ey:ersq=er1*er1
390 FOR x=0 TO er1 STEP 2
400 y=2*ratio*SQR(ersq-x*x)
410 MOVE -x,-y/2:DRAWR 0,y,3:PLOTR 0,0,1
:IF RND<0.25 THEN PLOTR 0,-y
420 MOVE x,-y/2:DRAWR 0,y,3:PLOTR 0,-y,1
430 NEXT:ORIGIN 0,0
440 RETURN
450 REM ------- Sine wave hill -------
460 FOR x=0 TO 638 STEP 2
470 hh=MAX(lift+ht*SIN(offst+(x*wlhl)),c
lip)
480 IF hh>4 THEN MOVE x,hy:DRAWR 0,FNrn(
4):DRAWR 0,hh,col(z):z=z XOR 1:PLOTR 0,0
,2
490 NEXT:RETURN
500 REM ------------ Tree ------------
510 f=stack(sp,3)-1:IF f=0 THEN sp=sp-1:
IF sp=-1 THEN RETURN ELSE 510
520 x=stack(sp,0):y=stack(sp,1):a=stack(
sp,2)
530 df=depth-f:s=size*(0.7↑df):bwid=2+tr
eewid/(2↑df)
540 a(0)=a-(angle/2)+FNrn(4)-2:a(1)=a+(a
ngle/2)+FNrn(4)-2
550 tx=x-s*SIN(a(0)):ty=y+s*COS(a(0))
560 xd=tx-x:yd=ty-y
570 ix=bwid*COS(a(0)):IF ix=0 THEN ix=1
580 xs=SGN(ix):iy=bwid*SIN(a(0))
590 FOR xx=x+ix TO x STEP -xs:yy=y+iy*(x
x-x)/ix:MOVE xx,yy:DRAWR xd,yd,0:NEXT:DR
AW x,y,3+(f<FNrn(3)+depth*0.35)
600 GOSUB 630:GOSUB 630
610 sp=sp+1:GOTO 510
620 :
630 i=i XOR 1
640 stack(sp+i,0)=tx+i*ix/2:stack(sp+i,1
)=ty+i*iy/2
650 stack(sp+i,2)=a(i):stack(sp+i,3)=f
660 RETURN
```



LINE CHSUM	LINE CHSUM	LINE CHSUM
10 = 30400	230 = 52160	450 = 16704
20 = 16416	240 = 10784	460 = 65344
30 = 06560	250 = 59040	470 = 12576
40 = 58112	260 = 01856	480 = 56128
50 = 13856	270 = 28384	490 = 42880
60 = 48864	280 = 12768	500 = 41600
70 = 30592	290 = 49056	510 = 55744
80 = 60608	300 = 05760	520 = 34816
90 = 11808	310 = 05696	530 = 43776
100 = 58336	320 = 05536	540 = 63872
110 = 29280	330 = 21024	550 = 34272
120 = 33632	340 = 30400	560 = 52736
130 = 15808	350 = 58784	570 = 65440
140 = 33344	360 = 12768	580 = 32800
150 = 01312	370 = 32160	590 = 38464
160 = 05728	380 = 43872	600 = 14880
170 = 07744	390 = 18848	610 = 63072
180 = 01408	400 = 48064	620 = 12832
190 = 55168	410 = 43712	630 = 60384
200 = 28544	420 = 62848	640 = 09600
210 = 22720	430 = 42720	650 = 55168
220 = 26144	440 = 27008	660 = 27008

Program II: Landscapes unlimited

NEARLY £500 IN PRIZES!

Hit that perfect beat!

Up for grabs this month are TEN digital drum machines for the Amstrad CPC. Cheetah's Amdrum is the best-selling peripheral which has delighted thousands of would-be rock stars.

It converts your computer into a programmable digital drum system using digital recordings of real drum sounds to achieve very realistic results.

Amdrum comes with a kit of eight different drum sounds for £34.95. But every prize winner will also take away three additional tapes each containing eight new voices and a Kit Editor: Latin Kit, Electro Kit and Afro Kit – worth £13.97!

How you can win

All you have to do is answer the three questions, fill in the coupon (or a photocopy) and send it to the address below to arrive no later than October 31.

The senders of the first ten correct answers to be pulled out of the sack will each be sent a Cheetah Amdrum and three data tapes.

The questions

1. Which German electronic group (whose name means "power station" in English) helped pioneer the use of drum machines?
2. Which heavy metal band has a drummer with only one arm?
3. Which white reggae band had a number one hit last year with Chrissie Hynde?

ENTRY COUPON

ANSWERS

1 .....

2 .....

3 .....

Name .....

Address .....

.....

.....

Postcode .....

Send to: Cheetah Competition, *Computing with the Amstrad CPC,* Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.

Amtips

Exolon
(Hewson)

Here's my Amtips debut – Hewson's Exolon well and truly seen to. I've been hard at work with it because it's brill and I decided to give you a head start with a guide to the hardest of the first 25 screens.

Then just before going to press, ace hacker Christian Pinder came up with not only a poke but the built-in infinite lives cheat mode as well. The man's a genius!

Infinite lives takes all the fun out of it so this is a last resort before murdering your cat, goldfish or cohabititant. Go to the define keys option, type Z,O,R,B,A for your key selections and you'll hear a short jingle.

Now select the keys you actually want and you'll be able to look cannons and birth pods in the eye. Switching off cheat mode is the same process again.

If you just want to make things a bit easier, use this poke which gives you a sporting chance with any number of lives you want.

I think you'd need a bionic right arm, a brain enhanced with a surgically implanted microprocessor and an RGB video input socket in your forehead to complete it with only ten lives.

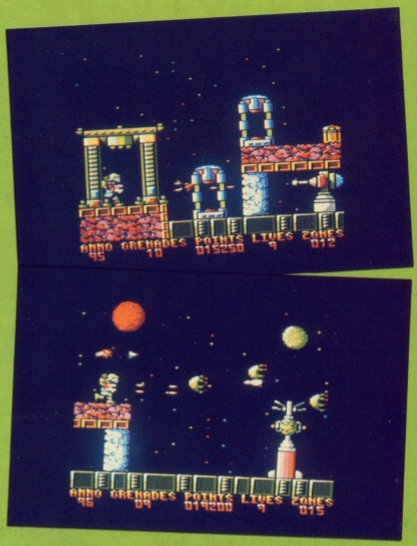
Roland's like that, but on damp mornings we have to spray him with WD40 or he just sits there, shorted out.

Now here's a quick zip round the first section. First, some general advice:

- If you hang around too long, an indestructible missile will appear and finish you off.
- Cannons can only be destroyed with a grenade but be careful, the fragments can hide a bullet. The safest thing is to duck until they're past.
- Pressing Esc will pause the game while you read these words of wisdom and gulp down a much needed stiff drink. Control+Shift +Esc will abort and take you back to the menu.
- On screens where a stream of baddies emerge from the right, the best method seems to be to keep blasting and bounce up and down as you move towards the exit.

Blue spheres can be difficult and it's important to time your jumps. If they get you pinned down, it's difficult to recover. You need to master the art of ducking at the right moment and bouncing up again, guns blazing.

- With birth pods, make sure a hail of blaster bullets arrives as the grenade hits. Bounce up and down as you finish off the red motes.
- There's a lot of blasting to be done but sometimes you have to get through several screens before finding an ammo dump so you'll have to learn to be accurate.




```
1 'Exolon poked (Tape)
2 'By C.J.Pinder
3 '(C) CWTA
10 MODE 1
20 MEMORY 4999
30 FOR n%=0 TO 9
40 READ a$:a=VAL("&"+a$)
50 POKE &BE80+n%,a
60 NEXT
70 INPUT "No of Lives : ",q
80 POKE &BE81,q
90 CLS
100 POKE &BDF4,&C9
110 PRINT "Loading Exolon"
120 LOAD "!loader",&4000
130 CLS:INK 0,0
140 INK 1,6:INK 2,18
150 INK 3,26:BORDER 0
160 POKE &4153,&80
170 POKE &4154,&BE
180 CALL &4000
190 DATA 3e,00,32,2b,01
200 DATA c3,00,01,c4,a9
```

1. Move right, duck the bullets, grenade the cannon and rock formation, exit screen right.

3. Get to the right of the teleporter, blow up the cannon (duck while you're launching). Teleport to the top and exit.

4. Grenade straight away. Move right blasting spheres until at the edge of the platform. Grenade, drop to the bottom blasting all the time, bounce and blast your way to the exit.

6. Walk four blocks to the right, lob a grenade at the birth pod. Duck, bounce and blast, just back from the top of the step. Try to get in phase with the blue spheres.

7. The first double launcher. Come out blasting. Keep bobbing down but don't jump. I find the best way is to keep my finger on Right while jabbing at Fire and Duck. Get close enough and it'll stop. Teleport to the top and exit.

8. The best way is to stay at the top, so walk to the right until your rear foot is at the edge of the platform. Jump to the next platform, do it again and exit. If you fall to the lower level, launching a grenade before you hit the bottom may get the cannon, otherwise it can only be hit when you're past the first mine. Between mines you'll need to move back slightly before jumping over the next.

9. Stand in the teleport. The rocket homes in on you, so wait until it's about a screen inch away and teleport down. Grenade the green missile guidance module and deal with the birth pod.

10. Don't move! Grenade the missile base and edge forward until your foot is one pixel away from the edge of the hammer. Wait for it to sink. Just as it disappears, move quickly to the central space. Do the same with the second hammer. Enter the chamber. If you want double blaster and armour, press Jump. You get less points this way, but getting through the rest of the screens without them is for masochists only.

11. Things get difficult. The easiest way is to teleport to the top but the next screen is a bit easier if you take the

bottom route. Move right, blasting the shells. It takes careful timing to hit the missiles as well but get close enough and you'll destroy them as they emerge. You can't afford to bounce until you're very close to the launcher.

13. Get to the teleport as soon as you can. Sometimes the cannon fires too rapidly to let you through. One bullet, sometimes two can be jumped over. If you want extra points, sneak right up to the cannon and give it a pineapple, but this could easily cost you lives. Exit at the top.

15. If you haven't much ammo, teleport past the launcher. Now walk back to it for your bravery bonus – thanks to John in the office for that one. If ammo isn't in short supply, walk into the launcher to get points for hitting shells.

18. If you've got any ammo left, maximise your score by standing to the right of the teleport and use it up on the blue spheres. Teleport to the top, collect ammo and grenades. If you're armoured, don't worry about the hammer.

19. Exit at the top but before you do, the birth pod and base are easy meat. Don't linger to get the last few reds as they spread quickly and you'll probably lose a life.

20. The missiles with their top wings in the roof are difficult to hit but can be ducked. You must hit all the others but if you get pinned down you won't be able to.

22. Bouncing and firing immediately. You can grenade the far base if you launch when your nose is just poking from behind the pillar. Drop down to the bottom. Take out the second base and a few spheres. Pick up both sets of supplies.

23. Don't panic! The squid loop round so you've just got time to grenade the coal scuttles before the first wave comes at you. As you go right you'll have to bounce to get all the squid. Let too many through and you'll get pinned down.

24. You need one grenade and plenty of ammo. You have to get at least as far as the first jet before you can grenade the top part of the cannon/single launcher. Sometimes you can get close enough to avoid shells being fired.

25. Bonus screen – just touch the right pillar.

On later screens, to get past the force fields you need to put about 25 rounds of ammunition into the field to destroy it. Hitting the base unit or hurling grenades has no effect.

As well as cracking Exolon in record time, Christian has come up with no less than eight more pokies for various games. Over to you Chris:

HI, I'm Tiffany Wood and from now on Amtips will be under new management – mine! Before getting on with the show I'd like to thank Tony for his superhuman efforts over the last few years and wish him a long and happy retirement.

I'm nuts about games but I'm not very good at programming yet, so keep the tips and pokes rolling in. If you don't, I'll get very lonely (not to mention being out of a job) so I'm relying on you fellas! And it's about time we saw some from the girls as well.

If I can't use your contribution straight away, I'll hang on to it and maybe fit it in a later issue. Remember though, you've got to send in your own work. If you copy from any other Bob, Dick or Hairy, you'll get me into terrible trouble with the editor. So don't! Riot Act over, now the good bits.

Instead of one person hogging the free software, we're going to pay for every poke, tip and hint we publish. What you get will depend on how much work I think you put in and how nicely you ask. In any case you'll get enough for at least one budget game.

Tiffany

Stormbringer

(Mastertronic)

This one does all sorts of naughty things, infinite strength being the least of them. At the top of the screen you'll get a print out of the objects you are carrying and your strength, even if you haven't got the mirror.

You'll be able to telephone without the telephone key. You'll also be able to read magic writing without the crystal ball, command characters without the wand of command and use the travel-to-person spell without the magic missile and the crystal ball.

Rewind the tape to the beginning. CPC664/6128 owners need to type ITAPE before using the poke. Run it and press play.

Soon I should be able to bring you a complete solution and map.

```
1 'Stormbringer
2 'By C.J.Pinder
3 '(C) CWTA
10 MODE 1
20 t=0
30 FOR n=&BE80 TO &BEC7
40 READ a$:a=VAL("&"+a$)
50 POKE n,a:t=t+a
60 NEXT
70 IF t=&1700 THEN CALL
 &BE80
80 PRINT "Error! Please che
ck data."
90 END
100 DATA 3e,16,21,00,a0,11,
00,02
110 DATA cd,a1,bc,21,94,be,
22,4d
120 DATA a0,c3,00,a0,af,32,
31,1e
130 DATA 32,6c,1e,32,86,37,
32,51
140 DATA 19,32,a5,36,32,c9,
36,3e
150 DATA 3e,32,0f,19,32,b5,
35,32
160 DATA 49,2b,32,94,35,3e,
21,32
170 DATA 89,2d,32,91,2d,3e,
c9,32
180 DATA 97,1e,c3,88,13,55,
00,a9
```

Terra-Cognita

(Codemasters)

This one has lots of different features. All you have to do is remove the lines corresponding to the ones you don't want. For example if you don't want infinite lives, remove line 170. Just run the poke and press play to play.

```
1 'Terra-Cognita
2 'By C.J.Pinder
3 '(C) CWTA
10 MODE 2
20 INK 0,26:BORDER 0
30 INK 1,0
40 OPENOUT"dummy"
50 MEMORY 999
60 LOAD "!",&C000
70 LOAD "!",1000
80 'No collision detection
90 POKE &1C4D,&C9
100 'No time shifts
110 POKE &1B03,&C9
120 'No fuel loss
130 POKE &1F59,&C9
140 'stop aliens killing
150 POKE &186F,&C9
160 'Infinite Lives
170 POKE &19AE,0
180 LOAD "!",20000
190 CALL 1004
```

1942

(Hit Pak)

This is for the tape compilation version and will give you rapid fire, 255 lives, infinite rolls and let you roll by pressing Shift or spacebar instead of the 1 and 2 keys.

To use the poke, skip past the parts of the game called *elite* and *screen.scn* and position the tape in front of the part called *code*. Then run the poke and press play on the tape deck.

```
1 '1942 (Hit Pak)
2 'By C.J.Pinder
3 '(C) CWTA
10 MODE 1
20 t=0
30 FOR n=&BE80 TO &BEAF
40 READ a$:a=VAL("&"+a$)
50 POKE n,a:t=t+a
60 NEXT
70 IF t=&1200 THEN CALL
 &BE80
80 PRINT "Error! Please che
ck data."
90 END
100 DATA 06,00,11,00,60,cd,
77,bc
110 DATA 21,58,02,cd,83,bc,
cd,7a
120 DATA bc,af,32,95,29,32,
df,02
130 DATA 00,00,3e,2f,32,c5,
02,3e
140 DATA ff,32,1c,25,3e,15,
32,be
150 DATA 02,c3,b3,89,60,78,
72,a9
```

The Apprentice

(Codemasters)

Here's one for an older game that's still got lots of life in it.

```
1 'The Apprentice
2 'By C.J.Pinder
3 '(C) CWTA
10 MODE 1
20 t=0
30 FOR n=&BE80 TO &BEB7
40 READ a$:a=VAL("&"+a$)
50 POKE n,a:t=t+a
60 NEXT
70 IF t=&1700 THEN CALL &BE80
80 PRINT "Error! Please check data."
90 END
100 DATA 06,00,11,00,60,cd,77,bc
110 DATA 21,00,12,cd,83,bc,cd,7a
120 DATA bc,21,9a,be,22,60,12,c3
130 DATA 00,12,af,32,9e,91,32,5f
140 DATA 8b,32,7b,89,3e,c9,32,94
150 DATA 7b,32,19,bd,c3,7a,9e,21
160 DATA 50,69,6e,64,65,72,ac,a9
```

All contributions for AM-TIPS must be original material and accompanied by this form:

I certify that the attached submission is all my own work and has not been submitted to any other publication.

Signed_____

Name _____

Address _____

_____ Post code _____

If you do not want to cut the page, you can copy out this form to a separate sheet of paper.

The address to write to is:
Tiffany, Amtips, Computing with the Amstrad CPC,
68 Chester Road, Hazel Grove, Stockport SK7 5NY.

Cauldron II

(Palace)

Not a new game, but definitely a golden oldie worth digging out for an airing – especially with 100 lives poked into place with this little beaut.

```
1 'Cauldron II
2 'By C.J.Pinder
3 '(C) CWTA
10 MODE 1
20 t=0
30 FOR n=&BE80 TO &BEAF
40 READ a$:a=VAL("&"+a$)
50 POKE n,a:t=t+a
60 NEXT
70 IF t=&1200 THEN CALL &BE80
80 PRINT "Error! Please check data."
90 END
100 DATA 01,00,00,cd,38,bc,21,40
110 DATA 00,11,64,00,3e,31,cd,a1
120 DATA bc,d2,00,00,3e,c3,32,94
130 DATA 00,21,a2,be,22,95,00,c3
140 DATA 40,00,3e,64,32,27,c4,c3
150 DATA 00,c0,72,90,8d,a2,df,a9
```

Scooby-Doo

(Hit Pak)

Scores of scraggly Scoobies scurrilously scamper across the screen. Use the same method as Stormbringer.

```
1 'Scooby-Doo (Hit Pak)
2 'By C.J.Pinder
3 '(C) CWTA
10 MODE 1
20 t=0
30 FOR n=&BE80 TO &BEA7
40 READ a$:a=VAL("&"+a$)
50 POKE n,a:t=t+a
60 NEXT
70 IF t=&1200 THEN CALL
 &BE80
80 PRINT "Error! Please che
ck data."
90 END
100 DATA 06,00,11,00,60,cd,
77,bc
110 DATA 21,dc,05,cd,83,bc,
cd,7a
120 DATA bc,21,46,06,36,c9,
cd,f2
130 DATA 05,af,32,26,7a,c3,
e8,66
140 DATA 50,69,6e,64,65,72,
ab,a9
```

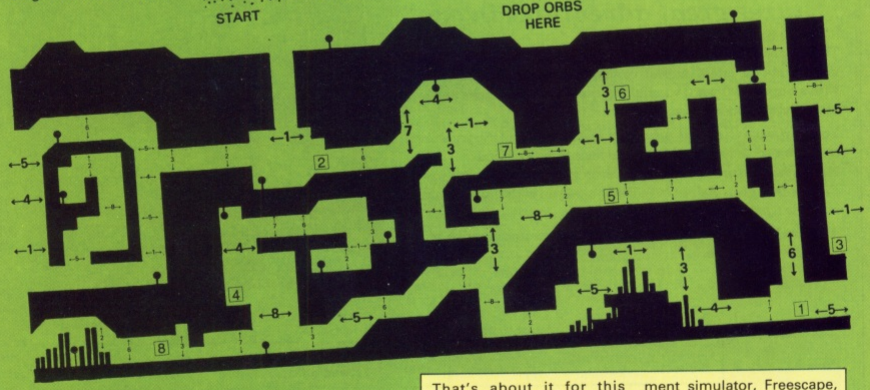
Space Harrier

(Elite)

Use this in the same way as the Terra-Cognita poke.

```
1 'Space Harrier
2 'By C.J.Pinder
3 '(C) CWTA
10 MEMORY &8C9F
20 MODE 0
30 FOR a=0 TO 15
40 READ b
50 INK a,b
60 NEXT
70 BORDER 0
80 LOAD "!screen",&C000
90 OPENOUT "d"
100 MEMORY 949
110 CLOSEOUT
120 LOAD "!block",950
130 'No Collision detection
140 POKE &D33,&C9
150 'No trees
160 POKE &F64,&C9
170 'Stop Aliens Firing
180 POKE &10FC,&C9
190 'Infinite Lives
200 POKE &D74,0
210 'Rapid Fire
220 POKE &128F,0
230 CALL 950
240 DATA 0,26,6,0,0,9
250 DATA 2,25,15,3,16
260 DATA 10,13,21,14,20
```

Now here's a map of Firebird's Thrust II from Daragh Ward of Dublin.



KEY:

- Red cloud
- Orb
- Pillar
- ←1→ Path of an Android
- Agent for killing Androids

Android types:

1. Mist
2. Spikey ball
3. Barber pole
4. Roller skate
5. Wheel
6. Rings
7. Helicopter
8. Tubes

That's about it for this month. I took up a lot of room with Exolon, but I should be able print some of your tips 'n pokes next month.

Before I go, I'd like to give a quick plug for the men down at Incentive Software. They've sent me a demo disc of screens generated with their new 3D environment simulator, Freescape, which will feature in the game Driller.

The pictures are all in solid 3D and it looks like a real leap forward from wire frame. According to Roland and Ian, the problem might be the speed with which each frame can be drawn, so we'll have to wait and see if it's as good as it looks.

More EXCLUSIVE special offers – plus even BIGGER savings for subscribers to COMPUTING WITH THE AMSTRAD

Save £9

STARGLIDER is an all-action flight simulation with the perfect mixture of strategy and dexterity.

Swoop round the towers and blast the stompers. Seek out and destroy the menacing Starglider One with the flapping wings and dock with the rotating missile silo.

A masterpiece of programming, design and execution!

The package includes a 64-page novel that sets the scene – and gives you vital information to help you succeed in your quest!

Plus JEWELS OF DARKNESS . . .three great adventures in one!

Save £10

Three classic adventures from Level 9, now totally rewritten to incorporate the latest innovative adventure-writing techniques, with a huge 1,000-word vocabulary, over 600 illustrations and ultra-fast response times.

You start with ***Colossal Adventure,*** containing all the treasures, creatures, rooms and puzzles of the mainframe original. Next is ***Adventure Quest,*** where even greater perils await you. Finally ***Dungeon Adventure*** challenges you with the ultimate struggle against the forces of darkness.

Also included in the package is a 64-page novel, with a 12-page playguide.

Suitable for	Product	Format	RRP	Special reader offer	YOU SAVE	Offer including subscription	YOU SAVE
CPC Range	Starglider	Disc	£19.95	£16.95	£3	£22.95	£9
CPC Range	Starglider	Tape	£14.95	£12.95	£2	£17.95	£9
CPC Range	Jewels of Darkness	Disc	£19.95	£16.95	£3	£21.95	£10
CPC Range	Jewels of Darkness	Tape	£14.95	£11.95	£3	£16.95	£10

TO ORDER, PLEASE USE THE FORM ON PAGE 61

Quick on the draw

JOHN BLESSING puts Stop Press printing into top gear

THE arrival of Advanced Memory Systems' Stop Press (Pagemaker) for the CPC caused a surge of interest in desktop publishing among home users. Despite its many problems when first released, this program has been very successful.

The quality of its output is superb, but the dot matrix printer needs to spend well over an hour producing a high-quality page.

Even in draft mode this can take at least half an hour. Until now if you wanted to reduce this time there was only one option – buy a laser printer. However, it is now possible to speed up page printing with the programs presented here.

It is interesting to consider why the print routine in Stop Press is so slow, and to do this we need to understand the layout of a page. Stop Press constructs it out of 568 rows, each of which is 114 bytes wide. When saved to disc the page is cut horizontally into four strips and put into separate files.

The problem is that a single row using one pin of the print head is 3/216in deep, and some simple arithmetic shows that 568 rows would only be three quarters of the correct length for A4 paper. It seems that Stop Press prints every row twice with a 1/216in line feed in between. This makes every row about one third deeper, so the page is stretched to fit A4 format.

It also makes it so slow that a second hobby is needed to pass the time while waiting for it to finish printing. The obvious solution is to have more rows, but that would mean using more memory which is in short supply in Stop Press.

Program II works by printing seven rows at once which considerably reduces the time taken. There are still only 568 rows to a page and the bottom row of each set of seven has to be repeated to get the correct page length.

The time taken to print a page is now approximately 15 minutes, with only a small reduction in quality – certainly good enough in most cases.

Choose draft mode if you really want to speed things up. Here none of the rows are repeated, so a gap is left between each block of seven. It might not look too great, but it takes even less time and is useful for checking page layout.

Program I must be typed in and saved before running. It generates the machine code which is then saved as *PMEPSON.BIN*. Program II loads this code and then asks for the required print mode, and will then prompt you to insert your page disc and let you select the page you wish to print.

Each of the four files which make up a page are loaded in turn and control passes to the machine code. The Escape key is not tested during printing, so if you want to stop you will have to remove the disc before the next quarter page is loaded.

Stop Press is fussy about the type of printer it will drive. Generally speaking it will work with Epsons and others which expect 960 bits in graphics mode. Many printers use 1280, so the page tends to be squashed in the left two thirds of the paper.

If you have this problem do not despair. If there is sufficient interest, a later article will describe how a full-width page can be produced even on these printers.

```
10 REM  Program I - Generates m/code
20 REM          for program II
30 REM          by John Blessing
40 REM (c) Computing with the Amstrad
50 REM ------------ CPC ------------
60 ln=160
70 FOR adr=&3300 TO &345D STEP 13
80 READ byte$:chk=0
90 FOR i=0 TO 12
100 v=VAL("&"+MID$(byte$,i*2+1,2))
110 POKE adr+i,v:chk=chk+v
120 NEXT
130 IF chk<>VAL("&"+RIGHT$(byte$,3)) THE
N PRINT"ERROR in LINE";ln:STOP
140 ln=ln+10:NEXT
150 SAVE"pmepson.bin",b,&3300,&15C
160 DATA 0000210040006614C5E5CD2933E142F
170 DATA C1111E03AFED5A10F121587ECD5AE
180 DATA 5D33CD0A3321CA7ECD5D33CDBA697
190 DATA 33C9E5CD4434E13A0033FE0020592
200 DATA 05CDEE331822CD83333A0133FE51C
210 DATA 002805CDEE331813CDD4330606426
220 DATA 117200AFED5A10FCCD5D33CDBA669
230 DATA 33C9CD0834060 3CD2634C50626426
240 DATA C5060856AFCB02C5D6071710FD49B
250 DATA C1CD3B3410F123C110E9C110E068C
260 DATA C9CD0834060 3C5CD2634 0626C54B8
270 DATA E5CD9C33E1C12310F6C110EDC97D3
280 DATA 060B5E5CDA833E1C110F7C9066D8
290 DATA 0711720 0AFCB0617A7ED5A10F8517
300 DATA CD3B34C93E1BCD3B343E33CD3B513
310 DATA 343E03CD3B343E00CD3B343E00A380
320 DATA CD3B34C93E1BCD3B343E33CD3B513
330 DATA 343E15CD3B343E00CD3B343E00A392
340 DATA CD3B34C93E1BCD3B343E33CD3B513
350 DATA 343E18CD3B343E00CD3B343E00A395
360 DATA CD3B34C93E1BCD3B343E4CCD3B52C
370 DATA 343E18CD3B343E00CD3B34061835E
380 DATA 3E00CD3B3410F9C93E1BCD3B344E1
390 DATA 3E4CCD3B343E30CD3B343E01CD47C
400 DATA 3B34C9CD2EBD38FBCD2BBDC93E6DF
410 DATA 0032003306 07C506727EFE00283 53
420 DATA 0332003323 0FC511BEFC96F00488
```

Program I

```
10 REM Program II - the page printer
20 REM          by John Blessing
30 REM (c) Computing with the Amstrad
40 REM ------------ CPC ------------
50 draft=&3301 :REM flag set to 1 to ind
icate draft qual
60 entry=&3302 :REM entry point for code
70 MEMORY &32FF
80 LOAD"pmepson.bin",&3300
90 INPUT"(D)raft or (S)tandard printout"
;a$
100 IF UPPER$(a$)<>"D" AND UPPER$(a$)<>"
S" THEN 90
110 IF UPPER$(a$)="S" THEN POKE draft,0
120 IF UPPER$(a$)="D" THEN POKE draft,1
130 PRINT"Put Pagemaker files disc in dr
ive"
140 INPUT "Drive A/B";d$
150 IF UPPER$(d$)<>"A" AND UPPER$(d$)<>"
B" THEN 140
160 IF UPPER$(d$)="A" THEN !A
170 IF UPPER$(d$)="B" THEN !B
180 CLS:CAT
190 INPUT "Page 1 or 2";p$
200 IF VAL(p$)<1 OR VAL(p$)>2 THEN 190
210 CLS
220 inf$="page"+p$+".inf"
230 LOAD d$+":"+ inf$,&4000
240 FOR a=&4000 TO &4021
250 PRINT CHR$(PEEK(a));
260 NEXT
270 PRINT:PRINT
280 INPUT "Do you want this page";a$
290 IF a$="" THEN 280
300 IF UPPER$(a$)="N" THEN 190
310 FOR n=1 TO 4
320 pname$="page"+p$+".pa"+RIGHT$(STR$(n
),1)
330 LOAD d$+":"+pname$
340 CALL entry
350 NEXT
```

Program II

THE AMSTRAD DUST COVER COLLECTION

BBD ·DUST· COVERS

BBD ·DUST· COVERS

Tailored in nylon fabric that has been treated with an anti-static inhibitor. Attractively finished with contrasting piping. Can be washed and ironed.

CPC 464/664/6128 £7.50

2 piece set in dark grey nylon, monitor and keyboard piped in red. Model name hot foil printed on keyboard cover. Please state whether colour or mono screen

PCW 8256/8512 £11.95

3 piece set in soft grey. Monitor and printer piped in green. AMSTRAD PCW hot foil printed on keyboard.

PC 1512/1640 £9.00

2 piece set in ivory coloured nylon. Monitor piped in maroon AMSTRAD PC hot foil printed on keyboard cover. Please state whether colour or mono screen.

PRINTER COVERS TO MATCH

A range of covers for over 200 printers to match any of the above covers eg. Amstrad 2000, 3000, 3136, 4000 Brother, Canon, Citizen, Epson, Mannesmann, Star, Ricoh, Smith-Corona, etc.
Prices start from £4.50.

Please make cheques payable to:
BBD DUST COVERS
The Standish Centre, Cross Street, Standish, Wigan WN6 0HQ. Telephone: 0257 422968 Ext.53
Fax 0257 423909

VISA

Dealer enquiries welcome.
Available in the Southern Hemisphere from TECH-SOFT
324 Stirling Highway, Claremont 6010 West Australia. Tel: (09) 385 1885

E & J SOFTWARE

Great News! For all Amstrad Football enthusiasts
PREMIER II the classic Football Management Strategy Game is now available for the Amstrad CPC

PREMIER II is a COMPREHENSIVE AND EXCITING LEAGUE GAME – Can you handle all of this? – Play All teams home and away – Full Squad details all teams – Transfer Market that allows you to buy any player in the league/sell your players to any other team – Pre Match Report – Full team & Substitute Selection – Choose your own team style – All other teams have their own Style – Match Injuries – Match Substitutions – Half time/full time scores all matches – Transfer demands – Opposition Select their strongest team – Financial Problems – Match Attendances – Bank Loans – 7 Skill Levels – Manager's Salary – Change Team/Players Names – Continuing Seasons – Job Offers – Sackings for Mismanagement or Lack of Success – Print Option – Save Game and MUCH MORE!
This Superb game is available on tape for any Amstrad CPC for **ONLY £7.95** Including P&P and full instructions
Also available for any 48K Spectrum @ £6.95
PREMIER II is available by Mail Order only via our 1st Class Service and is in stock for immediate despatch by First Class Post.

Send to: E&J Software, Room A2, 37 Westmoor Road, Enfield, Middlesex, EN3 7LE

ARC

PRE-SCHOOL, PRIMARY, JUNIOR

Education

By a Teacher. Tested by Pupils

Approved by Parents and Schools

For All AMSTRAD Computers. **CPC/PCW and PC1512**
Cassette £7.50 Disc £11.50
SAE For Lists (Please indicate CPC /PCW or PC1512

ARC (CA9) 53 Bentley Street, CLEETHORPES, South HUMBERSIDE DN35 8DL. (0472) 699632

P.C.B. DESIGNER

Design double sided printed circuit boards quickly and easily with this powerful software.

- Very user friendly. Menu driven.
- Produces 1:1 and 2:1 Camera ready Artwork from an Epson or compatible (DMP2000) printer.
- Nine printer options.
- Double sided Printed Circuit Boards.
- Board size 200mm by 131mm (8" x 5.25").
- View both sides of board at once while working on either side.
- Single key to change from working on Top or Bottom of board.
- Auto Routing (with override).
- Predefined DILs from 8 pin to 64 pin.
- Predefined IDCs from 10 pin to 60 pin.
- DILs and IDCs may be placed Horizontally or Vertically.
- Automatically keeps count of Holes on board.
- Copy and move functions.
- Zoom editing.
- View and work at Fullsize or Zoom level.
- Repeat last line drawn (at another position for common bussing).
- Ground and Power line thick tracking.
- Single Pads, Lines, Blocks and Edge connector tracks placed or removed with a single key.
- User selectable colours for Top/Bottom lines, pads, paper and cursor (Menu selectable).

The Minimum system requirements to run this software are: Amstrad 464 with Mono monitor and Epson compatible printer (DMP2000). The user can change the colours to suit monitor in use from the main menu.
Supplied on Cartridge only £89.95 (Note there is NO through edge connector).
An Evaluation Cartridge is available for £25.00* everything works except the printer routines which have been removed. *(Refundable against purchase of the main cartridge).

DEMON DEVELOPMENT CARTRIDGE

The ultimate Machine code Monitor. Demon will give you full control over your Amstrad. Stop any program anytime by a press of a button, the memory remains intact and can be saved to Tape/Disc or Debugged.

Some of the features are:

- Single Step machine code Tracer runs machine code programs one instruction at a time with full display and control of Registers etc.
- General Disassembler for normal use and a Text File Disassembler that generates cross referenced Labels and source files suitable for Maxam.
- Programmers Calculator works in Hex, Decimal, Binary with functions AND, OR, XOR, CHAR.
- Header Reader for Tape or Disc reports type of file, Start address, End address and Execute address.
- Powerful Find command searches memory for Strings or Bytes.
- Graphics printer screen dump and Text screen printer Dump.
- Full Screen memory Editor, examine and change at will.
- Move sections of memory, Verify memory, Change screen Mode, Pens and Ink colours. Clear memory. Info report on all pens, inks and paper in use.
- Save and Load to anywhere in memory. Any file (even protected) Basic, Bin or Ascii can be loaded to Any memory position then examined, debugged, or Traced.
- Any program can be stopped (by pressing reset button) and full control is returned to DEMON, the Memory remains intact.
- Plus a further 10 useful commands.

Demon Cartridge with user manual only £29.95 Inc P&P

DMP 2000/3000 BUFFER UPGRADE

Upgrade your printer buffer from 2K to 8K. This will also allow all of the Download Character set to be re-defined thereby allowing the design of special character fonts.
Very easy to fit, takes about ten minutes.
Complete Instructions and New RAM chip only £5.00 Inc P&P.

PASCAL COMPILER ROM £19.95

Fed up with slow Basic?, want the speed of machine code without the hassle? Then why not try Pascal.
Our Pascal compiler is easy to use, suitable for the absolute beginner and produces Stand alone machine code which runs under AMSDOS. It supports:- IF, THEN, ELSE, REPEAT, UNTIL DO, WHILE, CASE, READ, WRITE, FUNC, FOR, PROC, MEM, ARRAY, SHR, SHL, MOD, CONST, VAR, CALL, AND, OR, BEGIN, END, plus all the usual arithmetical operators etc.
The user manual supplied will teach you how to write programs, it contains dozens of programs to try out including serious software and games such as SPACE INVADERS.

Supplied on Eprom with User Manual only £19.95
Now available on cartridge £24.95

EPROM EXPANSION BOARD £16.75

Holds 4 EPROMS. Suitable for Maxam, Protext etc, etc.
Supplied configured for 2764/128 eproms (standard type).
Specially designed circuit enables the use of any speed of Eprom. Top quality silk screened PCB measures 7cm x 12cm approx with through edge connector to allow the use of Disc (464) or other peripherals.

Complete Kit of parts, with instructions to build it yourself £16.75 Inc P&P
Ready built and tested only £21.95Inc

EPROM PROGRAMMER £38.95

Why not transfer your favourite programs onto Eprom. This unit enables the user to program 2764 (8k) or 27128 (16k) Eproms. The unit is completely self-contained in a smart impact resistant case. It plugs directly into the expansion bus (rear of Amstrad) no external power supply is required. The software supplied supports: Ram to Rom, Rom to Ram, Rom to Rom, Disc/Tape files to Rom, Editing, Verification, Single location of Block programming. A BASIC to ROM program is also supplied which will convert a Basic program and add your RSX name. The program once placed in Eprom will be available at switch on and will run via the RSX name

EPROM PROGRAMMER Unit with software and 12 months guarantee. Only £38.95 inc P&P. Now available in kit form with through edge connector (uncased) only £30.25 Blank Eproms 27128 (16k) P.O.A.

PC1512 SOFTWARE

*Word Processors *Spreadsheets *Accounting *Assemblers
*Utilities *Databases *Arcade Games, etc, etc

All at £5 per disc send S.A.E for further details

ALL ITEMS ADVERTISED ARE AVAILABLE NOW, AND RUN ON 464/664 AND 6128 MACHINES

Cheques, P/O's made payable to:
JOHN MORRISON 4 Rein Gardens, Tingley, W. Yorkshire WF3 1JR Tel: (0532) 537 507
Return of post service on Access or P/O's please allow 3 days for cheques. Send large s.a.e. for further information on the above products

Converting from Tasword to Protext

£10 Prize letter

NOT long ago I switched from Tasword to Protext on rom. The Tasword files load into Protext in program mode and when I type DOC to get into document mode the formatting commands don't work.

Ian Sharpe's text file compacter article in the August issue brought enlightenment on how to convert Tasword files to real Protext documents that will obey formatting commands. I now realise the problem is due to a hard carriage return at the end of every line and formatting halts at these.

So to help other readers who may have been experiencing the same problem here are some notes on converting from Tasword files to Protext documents.

- *Printer control codes are stored differently so you'll need to change them.*
- *Make sure your Tasword file is not right justified and has no margins or you'll have to get rid of lots of spaces in Protext which handles justification and margins differently.*
- *You need to convert your Tasword files into Protext documents or they won't reformat properly when you edit them. To do this use the two-line program that accompanies the text file compacter in the August issue.*

If you use it by itself on Tasword files it has the disadvantage that words get joined together at the ends of lines when you reformat. So you'll need to either go through afterwards separating them by hand or you can follow this procedure:

- *Load the file into Protext and put a double carriage return at the end of every paragraph. In other words create a blank line.*
- *In command mode type DOC.*
- *Type R for Replace.*
- *When asked for the FIND STRING type !.!.*
- *When the REPLACE WITH prompt appears choose a two-character combination that doesn't appear in the text such as two curly brackets.*
- *The last two steps are a temporary measure to convert all the double carriage returns at the ends of paragraphs to something that won't be affected by the next stage.*
- *Select R again and replace !. with <space>!. using Find string =!. and Replace with =!.*
- *Go back into Basic with the Q command, type in and run the two-line program.*
- *Go back into Protext with ;P.*
- *Replace the curly brackets with !.!. to retain the blank line between paragraphs or replace with !. to close the line up again.*

It's not quite perfect, but it does all the hard work and is particularly useful on longer documents.

In conclusion, I'd like to say that Tasword has given long and faithful service and my only reason for changing was that I own a CPC464, need more file space and this was the cheapest way of getting it. – **John McMarrot, Swindon.**

Packing in the facts

HERE are two useful hints. Firstly, as a university student wanting to organise revision notes in a compact form for easy reference I found that I could cram a huge amount of information on to a page by using condensed subscript and a smaller line feed of 5/72in.

This allows me to scan and remind myself of a large amount of information without carrying a sheaf of notes around.

Secondly, using the CPC464/DD1/Protext rom combination I recently spent four hours typing in a document without taking a backup.

When I tried to save my work to disc the computer crashed and all was lost. I traced this to a wobbly connection between disc interface and rom board.

When I start work I run a short configuration program to set up ink colours and key definitions. Adding the following to this program helps me with regular backups:

```
KEY 9,CHR$(&FC)+"S"+CHR$(13)
+CHR$(13)
```

Now pressing 9 on the numeric keypad quickly makes a backup which I now do at the end of every paragraph. – **John Terry, Oxford.**

Second drive for 6128

I HAVE a fairly modern 5.25in disc drive which I would like to use with my CPC6128. Can you possibly help as to any modifications I have to carry out to enable me to run it?

It would also be a help if I could use it as drive C as I already have a second 3in drive as drive B and it would avoid continual disconnection. – **M.J. Fecher, Maidenhead.**

- Without details of the drive we can't tell you what you need to do with it.

Normally the maximum number of drives allowed with a CPC is two but Romantic Robot, 15 Hayland Close, London NW9 OLH, may well have the answer to your problems.

They have a new disc operating system and utility rom called Rodos which will allow multiple drives of different sizes. The one we saw demonstrated had a silicon disc, a 5.25in and two 3.5in drives in addition to the Amstrad's internal drive.

At the time of going to press we've had Rodos for only a few days. We haven't tested it with extra drives other than a silicon disc.

It doesn't work under CP/M and file copy utilities will not recognise anything other than the conventional A and B drives.

On the other hand, it will

Turn to Page 56 ▶

Win a tenner

Each month we award £10 prizes for the most interesting letters sent to us.

So now there's more reason than ever to contribute to our lively letters page.

Get your pens out, start writing and you could be one of the winners.

The address is: Postbag, Computing with the Amstrad, Europa House, Chester Road, Hazel Grove, Stockport SK7 5NY.

◀ From Page 55

configure as a silicon disc and printer buffer any extra ram such as the second 64k of the CPC6128 or the dk'Tronics ram packs.

With a specially formatted disc it will also allow you to use directories.

Monitor upgrade

I OWN a CPC464 with colour monitor and wish to upgrade. If I buy a CPC6128 with green screen could I use the colour monitor with the CPC6128 and sell the CPC464 with the green screen? – **Derek Lightfoot, Greenock.**

● Although the CPC464 would work with the CPC6128 monitor, the reverse is not true. The CPC6128 disc drive takes its power supply from a socket in the monitor which is not present on CPC464 versions. You would need a separate power supply for the disc drive, such as an MP2 modulator, but this would be a untidy arrangement.

Trouble with tapes

SINCE we have both a CPC6128 and a CPC464 in the family we often want to transfer our Basic programs from disc to cassette to enable wider use.

In every case, after apparently saving successfully to tape, any attempt to load or run the program back on either CPC results in "Read error b" immediately after the header.

I'd be grateful for your advice as to whether my CPC6128 has a faulty tape port. – **R.M. Jones, London.**

● It is possible that your cassette port is faulty, but the most likely cause is your tape recorder.

We can't diagnose at a distance and unless you are prepared to take your CPC6128 for testing there isn't much you can do.

If your recorder is a sophisticated hi-fi unit, the noise reduction system may be responsible – cheaper mono decks are the best.

Try cleaning the tape heads with a cleaning cassette, as dirty heads are often a source of trouble.

If the recorder has more than one input or output socket, try all combinations. A stereo radio/cassette we use will only work with output from the headphone socket and not the one marked "line out", input split to the two "mic" sockets and not "line in".

Set to mono operation with the volume and treble turned two thirds up.

Borrow another recorder and see if that works. If it does, your own recorder is at fault. If it doesn't, have your computer tested.

Xorlent

I HAVE just typed in Ripple by Sid Barnes and Xor by Jordi Domenech from the August CPC. I think these are the best pattern programs I have seen for some time.

10-Liners is a good idea and I always type them in. By the way, I had to put the run statement on a new line in Xor as it made the line one character too long. – **Ian Leonard, Prestel 011110700.**

● Glad you liked them. Line 20 of Xor contains 255 characters which is the maximum allowed and works perfectly as published. You must have typed in an extra character, probably a space.

Checkpoint

PLEASE could you send me a copy of the checksum utility as I'm having trouble getting Snappers from the August CPC to work, and as a new reader I don't have the June issue. – **Mike Harvey, Jarrow.**

● Sorry, but we really haven't the facilities to send out free photocopies or tapes of magazine listings. The June issue is available using the mail order form on Page 61.

Echo text with DMP1

RECENTLY I bought a DMP1 printer and have found it very useful for graphics and word processing. I think I've got to grips with my printer but I have a problem.

How can I set up automatic printing so that whatever's printed on the screen will be transferred to the printer?

Also could you tell me how to draw a circle half way through a program without wiping any variables currently in memory? – **Jonathan Machell, Lancaster.**

● The facility to echo screen output to the printer can be very useful, but requires a utility program to achieve it.

We have just such a utility but it's a bit too long for the letters pages. We'll print it as a separate feature in the near future.

Circles can be drawn easily enough. At the point where you want to draw one, put the radius and the x,y coordinates of its centre in the variables *rd,ox,oy* respectively and GOSUB to the following subroutine which can have line numbers to suit your program.

If you don't use the variables it uses for anything else, it won't affect the rest of your program.

If the routine isn't fast enough for you, obtain a copy of the November 1986 issue which had a machine code circle utility.

```
120 REM Circle ox,oy rd
130 rad2=rd^2:ly=0
140 FOR cx=4-rd TO rd*(1-
1/SQR(2))-rd+4 STEP 4
150 ny=SQR(rad2-cx*cx)
160 FOR p=-1 TO 1 STEP 2:
FOR q=-1 TO 1 STEP 2
170 MOVE q*(cx-4)+ox,p*ly
+oy:DRAW q*cx+ox,p*ny+oy
180 MOVE p*(ly)+ox,q*(cx-
4)+oy:DRAW p*ny+ox,q*cx+o
y
190 NEXT q,p
200 ly=ny:NEXT
210 RETURN
```

Lucky wash out

I'D LIKE to relate an experience I had recently with a 3in disc. It contained an essential file which was not backed up. Unfortunately I spilt a cup of coffee all over it and it was well and truly soaked.

After the initial panic had died down I decided that if I allowed the disc to dry out, the congealed coffee would corrupt the file. So without thinking I proceeded to rinse it under the tap. Then I realised that with the plastic case it would take days, if not weeks to dry.

Only one thing for it, I thought – take the casing off. I pushed a screw driver into the join between the two halves and finally the casing split. To my dismay I had dented the floppy disc itself. Clutching at straws, I left it to dry on a radiator and reassembled the casing

COMPUTING WITH THE AMSTRAD CPC **Postbag**

WE welcome letters from readers – about your experiences using the Amstrad, about tips you would like to pass on to other users . . . and about what you would like to see in future issues.

The address to write to is:

Postbag Editor
Computing with the Amstrad CPC
Europa House
68 Chester Road
Hazel Grove
Stockport SK7 5NY

Quality from a TV . . .

£10 Prize letter

PETER Watkins's problem in the August issue about connecting a Sony to his CPC may be due to a mismatch between the Amstrad's RGB output and the RGB input of his television.

I have successfully matched my CPC6128 to the input of an ITT television, so it can be done.

Amstrad informed me that the RGB output is 1.5 volts across 100 ohms but the general standard for video RGB and composite signals is 1 volt across 75 ohms. So putting a 39 or 47 ohm resistor in each of the RGB leads will improve the matching.

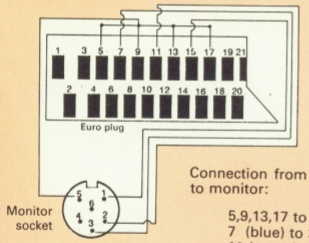
This will prevent the RGB signals being of such a high level that the television thinks its receiving white when it is really a more subtle hue.

I am satisfied that correctly connected RGB and synch signals can make a television into a colour monitor far superior to Amstrad's own. – **A.R. Squire, Slough.**

. . . and how to connect up

£10 Prize letter

IN answer to your question in the August 1987 issue about connecting up an Amstrad to a better monitor, I've done it and the diagram explains how to make up the wire. – **Martin Burke, Coventry.**



Connection from Euro plug to monitor:

5,9,13,17 to 5
7 (blue) to 3
11 (green) to 2
15 (red) to 1

If audio is required through the monitor, wire pins 2(right) and 6(left) using the stereo I/O socket, or pin 1 of the expansion socket and 4 to 5.

If source switching is required wire 8 to 5.

Composite video pin outs		
Audio out	1(right)	3(left)
Audio in	2(right)	6(left)
Audio grnd	4	
Video out	19	
Video in	20	
Video grnd	17	

minus the shutter mechanism. You aren't going to believe this, but the file loaded and was subsequently saved to another disc. – **A.P. Johnston, Alloa.**

● You were incredibly fortunate that the file or directory wasn't on the dented track, that the dent didn't intefere with the head, that the hot coffee or radiator didn't corrupt the magentised surface, and the subsequent washing didn't leave a residue.

With that kind of luck, if you ever fancy a day at the races let us know – we'll all come with you!

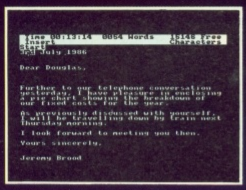
THE GALLUP CHART TOP 20 CPC SOFTWARE

THIS MONTH	LAST MONTH	TITLE (Software House)	PRICE
1	•	PAPERBOY *Elite*	8.95
2	1	GRAND PRIX SIMULATOR *Code Masters*	1.99
3	2	BMX SIMULATOR *Code Masters*	1.99
4	8	DESTRUCTO *Bulldog*	1.99
5	4	BARBARIAN *Palace*	9.99
6	3	GHOST HUNTERS *Code Masters*	1.99
7	•	CRICKET INTERNATIONAL *Alternative*	1.99
8	•	MILK RACE *Mastertronic*	2.99
9	•	RUN FOR GOLD *Alternative*	1.99
10	6	FEUD *Bulldog*	1.99
11	7	BIG 4 *Durrell*	9.95
12	•	STORMBRINGER *Mastertronic*	2.99
13	•	LIVING DAYLIGHTS *Domark*	9.95
14	15	KONAMI'S COIN-OP HITS *Imagine*	9.95
15	14	GAUNTLET *US Gold*	9.99
16	5	SIX PAK *Hit Pak*	9.95
17	16	FOUR GREAT GAMES *Micro Value*	3.99
18	•	NINJA MASTER *Firebird*	1.99
19	12	HEAD OVER HEELS *Ocean*	8.95
20	•	SUN STAR *Firebird*	1.99

Compiled by Gallup/Microscope

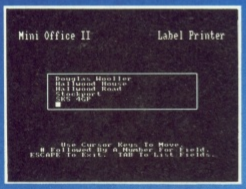
The chart is not so dominated by budget titles this month, and eight new entries have changed its appearance quite dramatically – especially with Paperboy from Elite going straight to number one. Read the review in this issue.

All this in just



WORD PROCESSOR
Compose a letter, set the print-out options using embedded commands or menus, use the mail merge facility to produce personalised circulars – and more!

DATABASE
Build up a versatile card index, use the flexible print out routine, do powerful multi-field sorting, perform all arithmetic functions, link with the word processor – and more!



LABEL PRINTER
Design the layout of a label with the easy-to-use editor, select label size and sheet format, read in database files, print out in any quantity – and more!

...and at a price!

Mini Office II offers the most comprehensive, integrated suite of programs ever written for the Amstrad – making it the most useful productivity tool yet devised.

A team of leading software authors were brought together to devote a total of 26 man years of programming to the development of Mini Office II. What they have produced is a package that sets new standards in home and business software.

The sample screenshots above illustrate just a few of the very wide range of features, many of which are usually restricted to software costing hundreds of pounds. Most are accessed by using cursor keys to move up and down a list of options and pressing Enter to select.

Is it that easy to use? Several leading reviewers have already sung its praises on this very point.

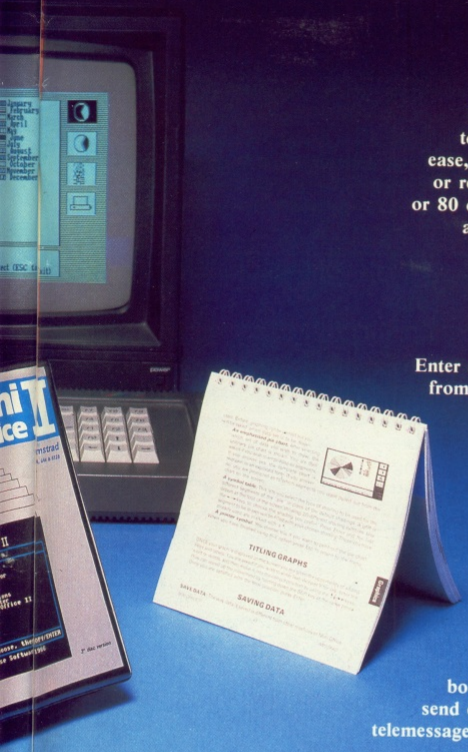
Yet possibly the best advertisement for Mini Office II is that it comes from the same stable that produced the original Mini Office package back in 1984.

That was so successful it was shortlisted in two major categories of the British Microcomputing Awards – the Oscars of the industry – and sold in excess of 100,000 units!

It was up to Mini Office II to take over where the first Mini Office left off, with 32 extra features, two additional modules, a program to convert existing Mini Office files to Mini Office II format, and a 60 page, very easy to follow manual.

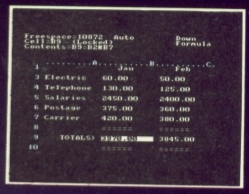
This is the package thousands of Amstrad owners have been waiting for – and at a price everyone can afford!

t ONE package!



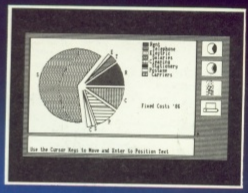
SPREADSHEET

Prepare budgets or tables, total columns or rows with ease, copy formulae absolutely or relatively, view in either 40 or 80 column modes, recalculate automatically – and more!



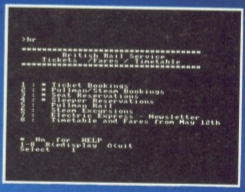
GRAPHICS

Enter data directly or load data from the spreadsheet, produce pie charts, display bar charts side by side or stacked, overlay line graphs – and more!



COMMS MODULE

Using a modem you can access services such as MicroLink and book rail or theatre tickets, send electronic mail, telex and telemessages in a flash – and more!



e that can't be matched!

Here's what some independent reviewers say about Mini Office II:

Menus throughout the program were abundant and well structured, allowing complex choices to be made with hardly a glance at the pocket-sized spiral-bound manual, and offering a wealth of user-defined functions . . . For the money it really is unbeatable. Dedicated word processors, spreadsheets and comms packages may offer some extra facilities, but some are so full of whistles and bells you may find yourself forever in the manual or even not using half of their power. What you get with Mini Office II is a valient attempt to provide an all-embracing small business package at a down to earth price; it fulfills all its promises, and there's nothing cut-rate about the facilities it provides. – **Tubelink/Viewfax 258**

Voted Business Program of the Year – 1985 AND 1986
"Popular Computing Weekly"

'This package is incredible value. It includes a word processor, database, spreadsheet, graphics display, label printer and communications module. You could well spend over £200 to get the same range of functions if you bought separate programs from other firms.'
Daily Mail Home Computing Guide.

Amstrad CPC 464, 664, 6128

Cassette £14.95
3" disc £19.95

DATABASE SOFTWARE

Order form on Page 61

SAVE up to £8!

Based on the style of the classic computer adventures – but written so that even small children can learn to find their way around, encouraged by colourful graphics and exciting sound effects.
The pack contains a 48-page full colour storybook
PLUS
a full length multi-location adventure on cassette.

	RRP	Our price
Tape	£8.95	95p*
Disc	£10.95	£2.95*

** Special offer price ONLY available if accompanied by a subscription*

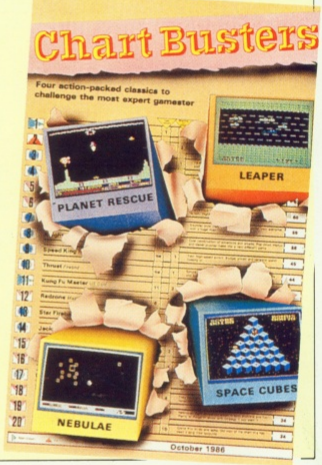
SAVE up to £5

	RRP	Our price
Tape	£5.95	£1.95*
Disc	£8.95	£3.95*

** Special offer price ONLY available if accompanied by a subscription*

Exclusive offers for subscribers to Computing with the Amstrad CPC

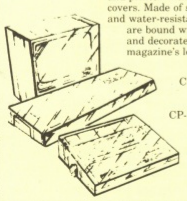
The offers on this page are not available at these special prices unless accompanied by a subscription order – see order form opposite. If you already have a subscription which does not expire for several months you can re-order early. Only one offer per order.



This top-selling compilation contains four action-packed classics to challenge the most expert gamester. It's arcade action all the way with Planet Rescue, Leaper, Nebulae and Space Cubes. There's something for everyone at a price which can't be beaten.

A MUST for CPC owners

This is a cover-up



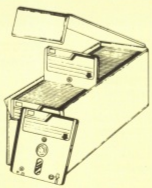
Protect your monitor, keyboard and printer with our luxury dust covers. Made of soft, pliable, clear and water-resistant vinyl, they are bound with strong cotton and decorated with the magazine's logo.

CPC monitor cover **£5.95**

CP/C keyboard cover **£3.95**

DMP 2000/3000 printer **£3.95**

Secure storage for your discs



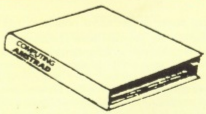
The ideal storage medium for your 3in discs.

These luxury padded PVC boxes are strongly made to protect your valuable discs and can be packed flat when not in use.

Box holds up to 30 3in discs

£3.95

How to keep your collection complete



Bound in rich burgundy pvc and bearing the *Computing with the Amstrad* logo, this handsome binder will hold a year's supply of the magazine firmly secured in place with metal rods.

£3.95

TO ORDER, PLEASE USE THE FORM ON PAGE 61

COMPUTING WITH THE AMSTRAD

MAIL ORDER OFFERS

ORDER FORM

A prices include postage, packing and VAT
Products are offered subject to availability

Overseas orders exclusively air mail
Valid until October 31, 1987

(✓) £ p

Annual Subscription

UK	£12	*6001*	
Europe (incl. Eire)	£24	*6003*	
Overseas	£36	*6004*	

Commence with _____ issue

Renewals

UK	£12	*6002*	
Europe (incl. Eire)	£24	*6000*	
Overseas	£36	*6601*	

Magic Sword

REDUCED

	With sub *	Without sub		
Tape	£0.95	£8.95	*6143/6034*	
Disc	£2.95	£10.95	*6145/6035*	

* Only available if accompanied by a subscription order or renewal

Chart Busters

REDUCED

	With sub *	Without sub		
Tape	£1.95	£5.95	*6147/6098*	
Disc	£3.95	£8.95	*6149/6099*	

* Only available if accompanied by a subscription order or renewal

Silicon Dreams

	With sub *	Without sub		
Disc†	£10.95	£16.95	*6131/6132*	
Tape (set of 3)	£5.95	£12.95	*6135/6136*	

* Only available if accompanied by a subscription order or renewal
† Text only on 464 & 664

The Pawn

	With sub *	Without sub		
CPC 6128 Disc	£9.95	£16.95	*6137/6138*	

* Only available if accompanied by a subscription order or renewal

Starglider

	With sub *	Without sub		
CPC Tape	£5.95	£12.95	*6109/6110*	
CPC Disc	£10.95	£16.95	*6111/6112*	

* Only available if accompanied by a subscription order or renewal

Jewels of Darkness

	With sub *	Without sub		
CPC Tape	£4.95	£11.95	*6113/6114*	
CPC 6128 Disc	£9.95	£16.95	*6117/6118*	

* Only available if accompanied by a subscription order or renewal

Back issues

£1.25 UK
£1.75 Europe (inc. Eire)
£3.25 Overseas

Jan 1986	*6018*		Dec 1986	*6210*	
Feb 1986	*6019*		Jan 1987	*6211*	
Mar 1986	*6200*		Feb 1987	*6212*	
April 1986	*6201*		Mar 1987	*6213*	
May 1986	*6202*		April 1987	*6214*	
June 1986	*6203*		May 1987	*6215*	
July 1986	*6204*		June 1987	*6216*	
Aug 1986	*6205*		July 1987	*6217*	
Sept 1986	*6207*		Aug 1987	*6218*	
Oct 1986	*6208*		Sept 1987	*6219*	
Nov 1986	*6209*				

DK Tronics Real Time Clock

NEW

CPC 464 Tape: £29.95 *6151*
CPC 6128 Disc: £29.95 *6152*

Music Machine

NEW

Tape: £44.95 *6144*
Disc: £54.95 *6146*

Add £3 for Europe (inc. Eire) / £8 for Overseas

AMX Mouse

Tape: £59.95 *6125*
Disc: £59.95 *6126*

Add £3 for Europe (inc. Eire) / £8 for Overseas

AMX Pagemaker

Disc: £39.95 *6124*

Add £3 for Europe (inc. Eire) / £8 for Overseas

DK'Tronics TV Receiver

UK £59.95 *6108*
Europe (inc. Eire) £70.95
Overseas £82.95

Dust Covers

CPC 464/664 Keyboard	£3.95	*6037*	
CPC 6128 Keyboard	£3.95	*6076*	
CPC Green screen Monitor	£5.95	*6093*	
CPC Colour monitor	£5.95	*6094*	
DMP 2000/3000 Printer	£3.95	*6095*	

Disc Storage Box

(Holds upto 30 3" discs) £3.95 *6142*

PlanIt

Tape: £14.95 *6105*
Disc: £19.95 *6106*

Mini Office II

Tape: £14.95 *6086*
Disc: £19.95 *6087*

Fun School

	Tape £5.95	Disc £8.95
Age 2-5 *6077/6078*		
Age 5-8 *6079/6080*		
Age 8-12 *6082/6083*		

Add £1 for Europe (inc. Eire) / £2 for Overseas

Binder

UK £3.95 *6038*
Europe (inc. Eire) £6.95
Overseas £10.95

Overseas Delivery

Please add £2 for Europe (inc. Eire), £5 for overseas per item unless otherwise indicated

TOTAL

Send to: Computing with the Amstrad CPC, FREEPOST, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.
(No stamp needed if posted in UK) *Please allow 28 days for delivery*

Order at any time of the day or night

Telephone Orders:	*Orders by Prestel:*	*MicroLink/Telecom Gold*
061-429 7931	Key *89, then 614568383	72:MAG001

Don't forget to give your name, address and credit card number

ENQUIRIES ONLY: 061-480 0171 9am-5pm

Payment: please indicate method (✓)

☐ Access/Mastercard/Eurocard/Barclaycard/Visa — Expiry Date / /

No. | | | | | | | | | | | | | | | | |

☐ Cheque/PO/Eurocheque made payable to Database Publications Ltd.

Name _____ Signed _____

Address _____

_____ Post Code _____

CA10

SUPA SOFT DISCOUNT SOFTWARE

TOP TWENTY AMSTRAD TITLES AT DISCOUNT PRICES
(3" AMSOFT CF-2 BOX OF 10 £25.99)

This Month	Last Month	Title	464/6128	Cass Price	Disc Price
(1)	(1)	Mini Office II	/ /	£12.00	£14.95
(2)	(3)	HiPak 6	/ /	£6.95	£10.00
(3)	(2)	Konami Coin Op	/ /	£6.95	£10.95
(4)	(7)	Gauntlet	/ /	£7.25	£11.95
(5)	(5)	Silent Service	/ /	£8.25	£11.95
(6)	(17)	Baby Boomer (Q. Pack)	/ /	£5.95	N/A
(7)	(–)	Paperboy	/ /	£6.25	£10.95
(8)	(11)	Head Over Heels	/ /	£6.50	£10.95
(9)	(12)	Sold A Million 3	/ /	£6.95	£10.95
(10)	(13)	World Games	/ /	N/A	£11.95
(11)	(17)	Big 4	/ /	£6.95	£10.95
(12)	(19)	Scrabble	/ /	£7.25	£11.95
(13)	(4)	Football Manager	/ /	£4.99	N/A
(14)	(14)	Prospell	/ /	N/A	£19.95
(15)	(15)	Nemesis	/ /	£6.95	£10.95
(16)	(16)	Samurai Trilogy	/ /	£7.25	£11.95
(17)	(10)	Army Moves	/ /	£6.95	£11.95
(18)	(–)	Zynaps	/ /	£8.25	£10.95
(19)	(–)	Exolon	/ /	£6.25	£10.95
(20)	(–)	Living Daylights	/ /	£6.95	£10.95

SOFTWARE ALSO IN STOCK FOR THE PC/PCW PLEASE RING FOR DETAILS & PRICES
Post & Packing Inc. Overseas Orders please Add £1.00 per tape. Mail Order only
Cheques/postal orders (Sterling only please) Made payable to:
DISCOUNT SOFTWARE, Dept1, 210 Nicholls Tower, Harlow, Essex CM18 6EF.
TELEPHONE (0279) 29076 WEEKDAYS ONLY PLEASE

WORLDWIDE SOFTWARE

	Cass	Disk
Adv. Art Studio (6128)		19.95
Ace of Aces	7.25	11.20
Battleships	7.25	11.20
Convoy Raider	7.25	11.20
Death Wish 3	7.25	11.20
Elite Trio Hit Pack	7.25	11.20
Elite 6 Pack Vol II	7.25	11.20
Elite 6 Pack Vol I	7.25	11.20
Exolon	6.55	11.20
F15 Strike Eagle	7.25	11.20
Guild of Thieves (6128)		14.95
H/hikers Guide to Galaxy (CPC/PCW)		19.95
Hollywood Hi Jinx (CPC/PCW)		19.95
Jack the Nipper II	7.25	11.20
Leaderboard Golf	7.25	11.20
Leather Goddess (CPC /PCW)		19.95
Lurking Horror (CPC/PCW)		19.95
Mask	7.25	11.20
Mini Office II	11.20	14.95
Paperboy	6.55	11.20
Prohibition	7.25	11.20
Road Runner	7.25	11.20
Solomons Key	7.25	11.20
Survivor	7.25	11.20
Tank	6.55	
The Pawn (6128)		14.95
Wizball	6.55	11.20
World Class Leaderboard	7.25	11.20
World Games	6.55	11.20
Zynaps	6.55	11.20
10 CF2 3" Blank Disks		24.95

Send large S.A.E. for catalogue of software at large discounts. All prices include VAT, postage and packing in the U.K. Overseas orders please add £1.00 per case/disk for AIR MAIL delivery. Cheques and postal orders payable to WORLDWIDE SOFTWARE.

WORLDWIDE SOFTWARE
1 Bridge Street, Galashiels TD1 1SW
Tel: 0896 57004

SCREENVISION TURNS YOUR MONITOR INTO A COLOUR TV!

AT THE AMAZING OFFER PRICE OF £59.95
Door to Door Insured delivery add £6 INC VAT

USE YOUR AMSTRAD CPC464, CPC664 & CPC6128 MONITOR AS A COLOUR TV SET!

Screenvision is a modern 'State-of-the-Art' TV Tuner which simply connects to your monitor, using the existing lead and converts it to an outstanding colour television.
Screenvision has more features than any other TV Tuner and costs less! Each tuner has seven pre-select push button channel selectors, separate controls for brightness, colour, tone and volume and has built in Speaker, Colour and Automatic gain control.
Unlike other products, Screenvision also connects to a host of other Monitors should you change your system.

DEALER & EXPORT ENQUIRIES WELCOME

SCREENS MICROCOMPUTERS & ELECTRONICS LTD.
MAIN AVENUE · MOOR PARK · NORTHWOOD · MIDDLESEX · ENGLAND
TEL: 09274 20664 TELEX: 929224 SCREEN G

AMSTRAD MIDI for CPC 464, 664, 6128 and PCW

8/12 Track Sequencer CZ101/1000 Toolkit/DX21 Editor
DW6000 Toolkit and various voice libraries

– NEW –
CZ230 Toolkit enabling you to modify those top 4 voices
Most of our packages are available for the Ram Music Machine and EMR Interfaces
INTERFACE £50.00. PACKAGES START FROM £29.95

– PCW MIDI –
Midi Interface with details £79.95.
8/12 Track Real Time Sequencer. CZ Voice Toolkit. DW6000 Editor.
Packages Start £45.00
New products available shortly including PC Midi Sequencers and a dedicated Midi Language.
Midi Expander 1 in 8 out fully buffered
Requires external 9v adapter **£34.95**

For more details contact:
DHCP ELECTRONICS
32 Boyton Close, Haverhill, Suffolk CB9 0DZ

COMING SOON FBOI EDITOR!

ARE YOU IN A RUT??

Then climb out by learning to use your AMSTRAD for pleasure, personal or business use with our unique range of. . .

OPEN LEARNING COURSES

Phone (0206) 560783 24 hours
or send for FREE details to:
MICROWISE UK, FREEPOST, Colchester C03 4BR

Name ..... Micro .....
Address .....
.....

ADVERTISERS' INDEX

Amstrad User Club and Amsoft....13
Arc Education....54
BBC Dust Covers....54
Campbell Systems....63
Centec....40
Comsoft....26
Discount Software....62
Evesham Micro Centre....44
E&J Software....54
Incentive Software....24
John Morrison....54
K & M Computers....42
Micropower....39
Microwise....62
MJC Supplies....28
Nemisis Software....44
Opalsoft....24
Postronix....32,33
Romantic Robot....2
School Software....42
Screens Software....62
Selec Software....40
Sirensoft....39
Tasman Software....21
TMC....26
Virgin Games....7
Worldwide Software....62

MASTERFILE III

FOR THE AMSTRAD CPC 6128 (ALSO CPC 464/664 WITH DK 'TRONICS 64K RAM)

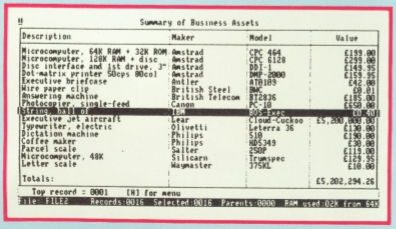
FIRMLY ESTABLISHED ...

MASTERFILE III is now firmly established as THE filing system for the CPC6128. It has received rapturous reviews and we could paper the walls of our new offices with our customers' letters of appreciation.

For the benefit of newcomers to the CPC machines: MASTERFILE III is a powerful and flexible data filing and retrieval system. All "database" systems require that your data is organised into fields and records. Unlike most, MASTERFILE does not commit you to field lengths or formats, since ALL data is variable-length and optional. Files are not pre-formatted, and only used bytes are saved to disc. Also, unlike the rest, MASTERFILE allows multiple user-defined ways of viewing/printing your data. And unique in its price range, MASTERFILE offers RELATIONAL FILE options, whereby common data can be entered just once and shared by many records. Maximum field size is 240, maximum fields per record is over 50, and maximum file size is 64K. Room for 1,000 full names and addresses, for example. Only one disc drive is required. It is menu-driven throughout, and comes with detailed illustrated manual, and example files.

SO VERY VERSATILE ...

Just about ANY kind of information can be handled by MASTERFILE. You can EXPORT the data to other systems (e.g. PROTEXT/MERGE and TASWORD). You can even merge your own USER BASIC to MASTERFILE for customised file processing, or build new files from other computer sources. The speed of SEARCH of MASTERFILE is second to none. Records can be sorted ascending/descending, character or signed numeric, even embedded keys such as surnames. Other functions are field-to-field calculations, and several-across label printing. We simply don't have room to list all the features; give us a call if you are still in doubt of the power of MASTERFILE III.



Summary of Business Assets

Description	Maker	Model	Value
Microcomputer, 64K RAM + 32K ROM	Amstrad	CPC 464	£199.00
Microcomputer, 128K RAM + disc	Amstrad	CPC 6128	£299.00
Disc interface and 1st drive, 3"	Amstrad	DDI-1	£169.95
Dot-matrix printer 50cps 80col	Amstrad	DMP-2000	£159.95
Executive briefcase	Antler	ATB1089	£42.00
Wire paper clip	British Steel	BWC	£0.01
Answering machine	British Telecom	2020836	£185.00
Photocopier, single-feed	Canon	PC-10	£650.00
Electric typewriter	Brother	EP-44	£250.00
Executive jet aircraft	Lear	Cloud-Cuckoo	£5,000,000.00
Typewriter, electric	Olivetti	Letterra 36	£130.00
Dictation machine	Philips	510	£190.00
Coffee maker	Philips	HD5349	£30.00
Parcel scale	Salter	2500F	£119.00
Microcomputer, 48K	Silicarn	Trumspec	£169.95
Letter scale	Waymaster	375XL	£10.00
Totals:			£5,202,294.26

Top record = 0001 [N] for menu

File: FILE2 Records:0016 Selected:0016 Parents:0000 RAM used:08k from 64k

ALL THIS POWER ...

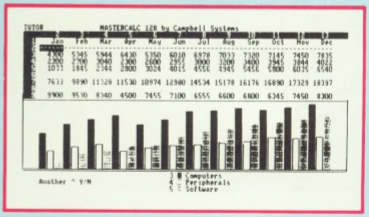
This is no toy thrown together in BASIC and half-tested, but real machine-coded computing power professionally constructed. We have had IBM and Apricot users beg us for a MASTERFILE for their machines — when they had seen the earlier CPC MASTERFILE. All this power is yours for ... **£39.95.**

For those who already have an earlier MASTERFILE, we offer updates; please telephone for details. You will be amazed at the performance improvements and extra functions.

★★★ PCW users: be patient, MASTERFILE 8000 will be ready early in 1987 ★★★

MASTERCALC 128 SPREADSHEET

We also have one of the fastest and friendliest spread-sheet programs around, MASTERCALC 128. Its special features include: individual tailoring of column widths and precision; relocatable formulae; split-screen option; automatic cursor advance; text output to printer, or to disc for interface with PROTEXT or TASWORD; hi-res graphic histogram of any three rows. MASTERCALC 128 runs on CPC6128, or CPC464/664 with DK'tronics RAM. The price is just **£33.00.**



TUTOR — MASTERCALC 128 by Campbell Systems

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	4000											
2	5100	5345	5944	6430	6350	6810	6978	7033	7200	7145	7450	7835
3	2500	2709	3040	2300	3100	2951	3000	3100	3400	2945	3044	4012
4	1031	1045	2344	2800	3026	4015	4556	4345	4456	4800	6035	6540
5												
6	7631	9890	11329	11530	10974	12980	14534	15178	16176	16890	17329	18397
7	9900	9530	8340	4500	7455	7100	6555	6600	6800	6345	7450	8300

Another " Y/N

1 = Computers
4 = Peripherals
5 = Software

SPECIAL OFFER

You can save £10 by taking MASTERFILE III and MASTERCALC 128 for a combined price of just **£62.95.**

Prices include VAT and P&P to anywhere in Europe. Elsewhere please add 20% for air-mail service. ACCESS/VISA/MASTERCARD welcome, written or telephoned, quoting card expiry date. Make cheques payable to "Campbell Systems". Our normal response is return of post, 1st class.

CAMPBELL SYSTEMS Dept. (CWA)
7 Station Road, EPPING, Essex CM16 4HA,
England. Tel: (0378) 77762/3.

THE AWARD-WINNING COMBAT FIGHTER SIMULATION

F-15 STRIKE EAGLE

- Endless hours of constructive entertainment
- Highly accurate combat flight simulation
- Outstanding 3-D graphics
- Multiple combat missions
- Various levels of difficulty
- Hundreds of exciting scenarios
- Realistic cockpit instrumentation

The Combat Fighter Simulation

Fly MicroProse's highly successful, award-winning combat simulation – if you dare. F-15 Strike Eagle puts you in control of one of the most deadly, advanced fighter planes ever to take to the sky. And challenges you with many of the decision processes and dangers faced by real combat pilots.

Climb into your own F-15. Into the hot seat. Your goal is to survive a series of strike missions over Southeast Asia and the Middle East.

Use a breath-taking array of hi-tech flight, weapon and information systems, including computer assisted targetting, Heads-Up Display and airborne radar. The ability to outfly, outfight and outthink the enemy spells success.

F-15 Strike Eagle. The ultra-realistic simulation of modern electronic warfare.

Available for Commodore 64/128K, IBM PC and Compatibles, Atari XE/XL. Prices from £9.95 for cassettes, £14.95 for disks.

MicroProse Software Limited, 2 Market Place, Tetbury, Gloucestershire GL8 8DA. Tel: (0666) 54326.

MICRO PROSE
SIMULATION SOFTWARE

NOW AVAILABLE SPECTRUM AND AMSTRAD CPC