

# COMPUTING **CPC**

WITH THE

# AMSTRAD **C**

The independent magazine for Amstrad CPC users

INCORPORATING  
**AMTIX!**

## *Adventure Special!*

Exclusive map: The Pawn  
Reviews: Arkham Manor  
Flashback  
Castle of Eagles  
and much, much more

**Game: Diamond Trap – can you survive?**  
**Utility: Design big fancy printer fonts**  
**Plus eight pages of games reviews**

**EXCLUSIVE!**  
Random access  
files on the  
CPC

## DISCOLOGY<sup>NEW</sup>

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

### The Copier

- In the time of going to press Discology really is the most powerful utility ever written for your Amstrad.
- Makes full use of all DDDs on a 5025.
- Highly intelligent, compresses data allowing whole discs to be copied in just 60.
- Full file copies, copy multiple files in one go. Full copies with files of any length.
- Copies files from disc to tape.

### The Editor

- Edit any sector, including binary formatted sectors.
- Display in 256 character, basic listing, hex, ASCII, binary, word & decimal.
- Search disc for a given string.
- Copy pages to printer.
- Built in full floating point calculator, hex to decimal conversion etc.
- Incredibly easy to use.

### The Reporter

- A new concept in disc utilities.
- Carefully stage discs and files.
- Shows those many sectors on-track track and displays on which sectors files are stored.
- Displays full sector information and file information.



Discology makes comprehensive use of just three sectors and is a superb addition to any disc reporter software collection. Discology makes extensive use of all DDDs, on a 5025 and on 5045, on a 404. This 100% readable code program offers everything you could dream of from discs.

Discology on disc only £24.99 CPC464/664/1128

Upgrade: Master Disc copies, master your Masterdisc to us, and we will get Discology onto side B of your Masterdisc. Upgrade price is just £9.99 plus your Master Disc.

## DISCOVERY PLUS

The ultimate tape to disc transfer program.

"Discovery Plus must be the most advanced and probably most efficient tape to disc disc transfer utility to date" *Amstrad Action*, December 1985. This program will transfer more games to disc than any other transfer program. The first person who can prove otherwise will receive twice his money back!

Discovery Plus consists of 5 easy to use programs that together will transfer an extremely high proportion of your software onto disc. Also includes details on how to transfer over 100 games. *Amstrad Newsletter Award Special* January 1987.

Discovery Plus now incorporates Spinlock Trans II

Discovery Plus only £14.99 on disc for the 464/664/1128

## PRINT MASTER

PRINTMASTER is probably the most useful program that any printer user can buy. JUST LOOK AT ITS COMPRESSION RATE LIST BELOW

- Comes complete with 26 fonts (optional)
- Prints any ASCII file from Teraword/Printex in a variety of fonts, sizes & styles
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- Very easy to use, full instructions and demo's included.
- No printer should be without this program!

On disc, only £24.99 CPC464/664/1128

## CHERRY PAINT<sup>NEW</sup>

Another new addition to our range, CHERRY PAINT is a superb ready to go package. CHERRY PAINT now lists, pulls down screens and windows to provide an easy to use drawing package for your Amstrad.

- Uses 544 + 400 pixels in Mode 2
- Full range of brushes and options
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- Supports screens in Amstrad 3.0 mode

Unbelievable value at only £9.99 on disc CPC464/664/1128

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- Tests have shown that it will backup about 90% of all Amstrad software
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- Removes protection from basic and speedload programs
- Simply the best, the tape to tape back up copies to best of tape to tape back up copies! AMSTRAD
- Written specifically for the 4M, this is not a Spectrum conversion.

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## SOUNDBLASTER<sup>NEW</sup>

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## SPLOCK TRANS II<sup>NEW</sup>

Many programs are now protected by the new version of the Speedlock Protection System. Until now, it was virtually impossible to transfer these games to disc. Now SPLOCK TRANS II performs the impossible.

- Fully automatic, very easy to use
- Uses only the absolute minimum disc space
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- Programs loaded quickly including loading screens with colours on colour
- Will transfer easily to disc

Available now on cassette at £9.99 CPC464/664/1128



**SIREN SOFTWARE, TEL 061-228 1831**  
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# COMPUTING AMSTRAD C



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Managing Editor:  
**Derek Macklin**

Features Editor:  
**Alan McLaughlin**

Production Editor:  
**Patricia Glover**

Associate Editor:  
**Nelson Maddison**

Assistant Editor:  
**Ian Shearer**

Promotions Editor:  
**Christopher Payne**

Reviews Coordinator:  
**Pete Barnwell**

News Editor:  
**Mike Cowley**

Advertisement Manager:  
**Tony Newell**

Advertising Sales:  
**Margaret Clarke**  
**Joseph Fox**

Tel: 081-486 8805 (Editorial)  
081-486 8383 (Admin.)  
081-486 8090 (Advertising)  
081-486 0171 (Subscriptions)

Postcodes: B9 7JZ M692001

Telex: 1156071 M694819 G  
Cable: 64116 M692001

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Dodge the nasty, collect the keys, grab the gems. It all sounds so easy — but it isn't!

✓ Get it right!

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



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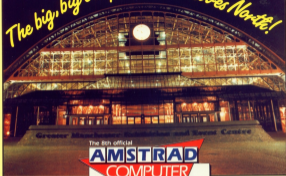
## 30 ADVENTURE SPECIAL

Genial provides an exclusive map of The Fairy, reviews of The Mystery of Arnhem Manor, Castle of Eagles, and Flash Back; a complete solution to L'Affaire Vera Cruz; a ready reference chart of all the hints, tips and maps we have published over the last 18 months, and much more.

## 50 AMTIPS

A full map of Aul Waderstehen Morly with hints and tips; plus pointers for Game Over, Wirball, Amstradix, Jet Set Willy II and many more.

The big, big computer show moves North!



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

Organised by  
Dorcas Exhibitors

### 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 info 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.

### Coming soon!

The next Amstrad Show in London will be held in the exciting new

**GREAT HALL,  
ALEXANDRIA PALACE**

Thursday, Friday & Saturday  
January 28, 29 & 30

**Note the dates!**

Use  
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Bring this coupon to the Show to get 50p per person off the normal admission price of £3 (adults), £2 (children).

**50p  
Off**

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COMPUTER  
SHOW**

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

**G-Mex Centre, Manchester**

How to get there: G-Mex is only one mile from the M602, and there's ample parking space beneath the hall. Buses may reach of Victoria and Piccadilly railway stations.

## Show releases unveiled

FOUR new Eurocom joystick titles are among a number of CPC product launches just announced for the Amstrad Computer Show at G-Mex, Manchester.

Micro Handball is an analogue/digital unit featuring an autofire facility with LED indicators and speed control. Price £24.95.

Two versions of the Professional 2 joystick will be released - one with autofire facility at £19.95, and the other without a top fire button for £16.95.

Most advanced of the quartet is the Attack joystick featuring a micro-switch top fire button, trigger, straps for leg or arm use, and new ergonomic base. Price £18.95.

Eurocom, which has reduced prices on its existing joystick range at the show, is also launching the advanced Jim Wit Disc which games with a lifetime guarantee and costs £24.95 for 10.

Legatron is releasing the CPC version of its best-selling maze game Xor, price £14.95 on disc and £9.95 on cassette.

Electronic Research is launching a device to interface the CPC with the Yamaha DX27 voice editor.

Kempston Data is releasing a new desktop publishing package, software only for £24.95, with a mouse £66.95.

# Multi-million dollar CPC games launch

A GAMES bonanza for CPC users has been promised following the launch of a UK subsidiary by America's biggest entertainment software house Electronic Arts.

The US parent company, based in California, accounts for 29 per cent of America's software sales in the games sector.

With over 200 titles to choose from, its Berkshire-based subsidiary says new games for the CPC should start flooding into the shops shortly.

Many of the titles have

already been bestsellers on other computers, and conversion to the Amstrad CPC is going ahead at full speed.

The multi-million dollar project is being launched with three titles for immediate release. They are graphic adventure The Bard's Tale, hydrofoil simulation Pegasus and shoot-'em-up tank simulation Arctic Fox.

To cater for the expected demand from CPC users, Electronic Arts (0753-40443) has taken new premises in Langley,

Berkshire with over 10,000 sq ft of offices and warehousing space.

The UK operation currently employs 22 people, a total which is expected to rise to 40 by the end of 1987.

Over 300 UK retailers have signed up to sell Electronic Arts products and affiliated labels from GSI, and Nexus. Mike Smith, Tandy and Mensies have already taken on its products. All the games will retail for £9.95 on cassette and £14.95 on disc.

## Lost for words?

AMSTRAD CPC users can now use their computer and telephone to access to what is claimed to be the biggest - and most up-to-date - multi-lingual dictionary in the world.

It is all part of a new service being offered by Mosaic, the UK's fastest growing electronic mail service. Accessed in an EEC-sponsored multi-language

computer in Luxembourg, the electronic dictionary is the result of a massive collaboration between language experts throughout the Community.

The Great European Dictionary consists of more than 300,000 words and phrases in English, German, Danish, Dutch, French, Italian, Portuguese and Spanish.

## Hot-shot releases

TWO new budget priced games for the CPC have been announced by Bug Byte.

Peter Shilton's Handball Maxwells is based on the so-called Hand of God incident that knocked England out of last year's World Cup.

The user takes the role of goalkeeper Shilton who is faced by hot-shot players in a practice session. There are also league matches and multi-player games to contend with.

Other features include various skill levels, 3D graphics and a total of 11 different movements of the goalkeeper.

Also from Bug Byte 01-420 0480 comes Defcon, a Strategic Defense Initiative shoot-'em-up featuring an Eagle class E751 fighter plane fired with a laser beam.

Object of the game is to regain control of the Earth's satellite system which has fallen into the hands of an unknown alien force. The games are £9.95 each on cassette.

## SPLIT-SECOND ACTION

A RACE down the world's fastest Olympic bobsleigh runs faces players of the latest CPC release from Digital Integration 0378 682888.

Bobsleigh provides a

driver's 3D view of six famous tracks from St Moritz to Calgary, each demanding split second reactions every foot of the way. Price £9.95 on cassette, £14.95 on disc.

# Making business easier

A NEW business software package for the CPC664 and 6128 has been released by SD Microsystems.

The CPC Small Traders Pack includes simple accounting, with sales and purchase ledgers which

can produce a wide range of information on debitors, creditors, journal listings and VAT.

Stock control is also possible with up to 500 items per file of stock and reorder listings.

Mail list management

enables up to 200 names, addresses and phone numbers to be stored and labels to be printed.

There is also a telephone directory, routine to Imperial calculator, on-screen calculator and a disc utility. Price £24.95.

## Micro politics

BASED on the popular television series, *The Prime Minister* has been released for the CPC by Mosaic Publishing (0435 53377).

The player takes the role of fictional Prime Minister Jim Hacker during five days in which policy decisions can lead to popularity in the polls or political disaster.

The game is set in the Prime Minister's office which is equipped with telephones, intercom, teletypewriter and an ideas box. Popularity of the Prime Minister is reflected instantly on a poll chart as decisions are made.

Various scenarios can be followed, from the troubles in Northern Ireland to the possibility of nuclear

war. Price (£14.95 on cassette and £19.95 on disc.

And with the American presidential election on the horizon, Addictive Software has announced its latest game for the CPC - *President*.

The game puts you in the role of the President of the United States with all of the decision-making problems the job entails.

A delicate balance has to be struck between policy decisions and personal standing in the polls.

The economy, local and international relations all have to be treated carefully in order to win re-election at the end of your term of office.

Price (£9.99 from Addictive 071-894 8100).

## Gnome on the range

LATEST release for the CPC from Level 9 (0344 887887) is *Gnome Ranger*, a three-part re-creation of an epic journey by the gnomish legend Buttonnose, complete with multi-player puzzles and what the authors call "masses of amusing text".

Characters, who all have their own lives, can be organised and ordered about by the player and there's a 48-page journal to help. Price £9.95.



## On your bike

YOU can don the yellow jersey for a new cycling road race simulation for the CPC from Greenline (021-356 3077) called *Tour De Force*.

Action takes place in five different countries, each with its own individual terrain and scenery.

Competition is stiff, with the player having to get more points than the

champion in order to progress to the next stage of the race.

Different techniques are required for each of the five stages. Obstacles like potholes, broken bottles, piles of hay and nasty competitors who try to kick you off the bike have to be contended with.

Price (£9.99 on cassette and £14.99 on disc.

THE  
GALLUP  
CHART

TOP 20  
CPC SOFTWARE

THIS WEEK	LAST MONTH	TITLE (Software House)	PRICE
1	▲	CRICKET INTERNATIONAL <i>Alternative</i>	1.99
2	▼	PAPERBOY <i>Elite</i>	8.95
3	▼	GRAND PRIX SIMULATOR <i>Codemasters</i>	1.99
4	▲	MILK RACE <i>Mastertonic</i>	2.99
5	▼	BMX SIMULATOR <i>Code Masters</i>	1.99
6	▼	DESTRUCTO <i>Bulldog</i>	1.99
7	▼	GHOST HUNTERS <i>Code Masters</i>	1.99
8	•	SUPER ROBIN HOOD <i>Code Masters</i>	1.99
9	▲	RUN FOR GOLD <i>Alternative</i>	1.99
10	•	PARK PATROL <i>Firebird</i>	1.99
11	▼	BARBARIAN <i>Palace</i>	9.99
12	•	EXOLON <i>Newscom</i>	8.95
13	▲	LIVING DAYLIGHTS <i>Downard</i>	9.95
14	▲	NINJA MASTER <i>Firebird</i>	1.99
15	•	NICK FALDO'S OPEN GOLF <i>Big-Byte</i>	2.99
16	▲	8 PAK VOLUME 2 <i>Elite</i>	9.95
17	•	BOY RACER <i>Alligato</i>	1.99
18	•	DIZZY <i>Code Masters</i>	1.99
19	•	MISSION JUPITER <i>Code Masters</i>	1.99
20	▼	FLUG <i>Bulldog</i>	1.99

Cricket International reaches the number one position this month, while seven new games enter the chart. Super Robin Hood is the highest new entry and is one of three new Code Masters titles featured this month.



# 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

## Ages 2-6

Alphabet  
Counting  
Houses  
Mighty Garden  
Multiplication  
Numbers  
Pebbles  
Sounds  
Snap



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

## Ages 5-8

Balance  
Castle  
Derrick  
Eod's Words  
Hills  
Maths Test  
Maze  
Number Signs  
Sewall  
Super Spell



**NUMBER SIGNS**  
Provide the correct alphabetic sign and aim to score 10 out of 10



**ONLY**  
**£5.95 tape**  
**£8.95 disc**  
CPC only

## Ages 8-12

Anagram  
Cocklebeaker  
Dog Duck Corn  
Guessing  
Hangman  
Maths Mike  
Nim  
Odd Man Out  
Polynomial  
Towers of Hanoi



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

## This is a cover-up!



Protect your cassette, keyboard and printer without heavy-duty covers. Made of clear plastic, they are easy to use and they are made with strong, clear and durable with the appropriate logo.

CPC cassette cover £2.95

CPC keyboard cover £2.95

CPC printer cover £2.95

CPC printer cover £2.95

## Secure storage for your discs

The ideal storage solution for your 5 1/4 discs.

These Super-protected (SP) boxes are strongly made to protect your valuable discs and are fire resistant (but don't use in fire).



Box holding up to 10 5 1/4 discs

**£3.95**

## How to keep your collection complete



Shouldn't you keep your own and leaving them unprotected the Amstrad logo, this Amstrad logo holder will hold a new copy of the logo in a sturdy mould to place with materials.

**£3.95**

**TO ORDER, PLEASE USE THE FORM ON PAGE 61**



THE ARMAGEDDON MAN

SURVIVOR



**Martech**  
**£12.95 (tape).**  
**Joystick or**  
**keys.**

**S**ET in the 21st century, this game of strategy takes on a familiar theme. As Supreme Commander of the United Nations Nuclear Warfare Agency, it's your task to prevent the ultimate catastrophe - nuclear war. This is clearly not going to be easy. There are 16 superpowers all vying for supremacy. The situation is tense - only clear thinking and good judgement will maintain the status quo.

Consequently, your position as diplomat are tested to the full. Not only must you develop good relations between yourself and each nation, but you must also foster between the nations themselves.

The game is run driven with five principal icons leading to further options. These allow you to deploy missiles at various strategic points across the globe either for defence purposes or reconnaissance.

One icon gives information about where UN forces have been deployed, while another allows you to tune into the world's wireless and intercept vital information.

Communication from the missile nations is virtually continuous and it is also possible to pass messages out. For example, you might want to increase a nation's general reputation another for acts of aggression.

Your role is increased at various intervals with ratings such as disastrous, poor and average. If war does break out

between two countries this is depicted on the map (which takes up a large part of the screen) by missiles flowing back and forth between the warring nations.

Movement is fully aided - only war (strategically thought) slows things up. The graphics are neat rather than spectacular, but this does not detract from the gameplay. To keep track of your decisions, the game comes with a colourful world map and two sheets of reusable flags.

Though it might prove a little frustrating for any full-blooded strategists out there, The Armageddon Man is a stimulating and addictive game.

**Tom Hargan**

**Presentation 85%**

A simple icon-driven system enabling swift action.

**Graphics 75%**

Clear and effective, but don't expect an optical extravaganza.

**Sound 10%**

Only a nondescript tune to tell you the game is loaded.

**Playability 87%**

Easy to get into and simple to play, but read the Obsolete thoroughly.

**Addictive qualities 90%**

This one will certainly grab you.

**Value for money 75%**

Picky, but worth it.

**Overall 85%**

A game that should provide hours of endless fun - unless it comes too

**U.S. Gold**  
**£9.95 (tape).**  
**£14.95 (disc).**  
**Joystick or**  
**keys.**

**C**ONTAINING life forms culminated from over 1,000 worlds, a ship orbits like a galaxy 300 above a long-dorm planet. There it, however, one creature awoke and is not content to live as a specimen. Determined to ensure the survival of his race he sets out to defeat 18 built each into incubators around the ship - you are that alien.

The term alien is quite an

impressive character - as well as the usual floating blobs there are dozens of different creatures parading the various levels.

The first level involves locating the ship's support life in which you are first dematerialised and then played around the system.

The first few levels you enjoy the game you are learning - this is when you identify the aliens which will rob you of the most energy, an which level the basic tank powers and when the first few incubators are located.

Graphically Survivor is excellent. Unfortunately the gameplay isn't the same degree of pain.

**James Robson**



obsolete description of the character you control - 188 systems, with an extensible jaw and a disgusting habit of spitting acid moustaches.

You have only one life - its length determined by the state of your energy reserves. Starting out with 80,000 units (energy) seems a touch on the generous side, it's not in every little unit but unless the ship is out to relieve you of it.

Energy can be acquired in two ways: by successfully attacking a built god in an incubator, or by capturing and using the ship's engines.

The second method doesn't earn you much energy, but it's great fun. The engineers aren't cheap in what you seek who equity about the ship, and they do they equate when you enter them! Your only mode of defence is your supply of acid - 100% accuracy! This will temporarily paralyse any alien.

A great deal of time has been spent designing some very

**Presentation 86%**

A choice of controls and clear instructions.

**Graphics 91%**

A wide selection of beautifully drawn alien life forms.

**Sound 80%**

Time here plus a few sound effects.

**Playability 63%**

Initially boring, but gets better with a little perseverance.

**Addictive qualities 86%**

A game which gives an 80%.

**Value for money 76%**

Just a touch on the high side.

**Overall 76%**

The gameplay isn't quite match up to the graphics.

## CHAMPIONSHIP WATER-SKIING



**Infogrames**  
**£9.95 (tape),**  
**£14.95 (disc).**  
**Joystick or**  
**keys.**

**A**FTER Garry Thompson, Nick Fatio, Roger Marnett and Diego Manzanares, the latest sporter to embrace a computer game is Patrice Martin. Nicknamed the Sea Prince, he's a very serious water skier from France, and he'll be competing in the World Championships which take place this year in London.

This is your opportunity to enter into the spirit of things, so shed your water wings, grab the nearest plank and get out onto the water. You might think it's almost impossible to control this speed in the straight, but they have designed this multi-player game very well.

Up to three water mammals can take part in the championship which consists of Le Jump, Le Freestyle (turns, stops, hops - and some results for all I know!) or Le Station - or a mix of all three.

The graphics are very good, with the main playing areas being framed with triple lines, receding girls and so on. Character animation is smooth and really slick - especially the fall when you fall off the skis! This will happen frequently and you get the hang of balancing and manoeuvring at speed.

You will need to learn how to combine various skills to compete successfully and fight your way to the points table to

the medals. During the Jump and Station events balance, speed and tension on the rope are essential, while in the Freestyle you need fast reactions and all your agility to create your own movements.

An interesting and unusual feature is that each event is seen from a different angle. The Jump features you in profile, the Freestyle views your performance from the safety of the boat, and the Station is seen from behind. This is the most successful of the three perspectives and gives a real impression of speed and water.

Championship Water-Skiing is really addictive, but I have no doubts about the long-term enjoyment of falling into the water every couple of minutes.

**Tony Bridge**

### **Presentation 28%**

The cover leaves something to be desired, and the instructions are skimpy.

### **Graphics 87%**

All too realistic.

### **Sound 84%**

Very similar to other Infogrames programs.

### **Playability 74%**

Controls can be confusing.

### **Additive qualities 80%**

Gripping in the short term.

### **Value for money 70%**

Three games for the price of one.

### **Overall 70%**

Bound to make a splash.

## HYBRID

**Starlight/**  
**Ariolasoft**  
**£8.95 (tape).**  
**£14.99 (disc).**  
**Joystick or**  
**keys.**

**C**ENTURES ago four alien beings were exterminated and abandoned in a heavily defended secure complex. Mysteriously their vehicles powers have grown and they now represent a threat to the empire. Their immediate termination is imperative!

No single robot has the

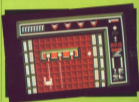
variety of secondary abilities, none the environment is too hospitable.

A good starting point is to send the Robot Luminaire through the maze to eliminate the majority of the gun emplacements. The real test is how to break into a new sector as you are limited in your manoeuvres by physical barriers.

Each robot has five energy cells, and as the last one is drained you lose control of the robot which effectively puts an end to the game.

Hybrid stimulates the memory, reflexes, and grip meter - are you up to such a challenge?

**Nev Arth**



capabilities to perform the task: this is a job for the Hybrid - a team of three robots each with its own forte.

The first is known as the Robot. A combination of heavy duty armour and awesome fire power make it ideal for immobilising the enemy's defences.

The second is the Brain. Poor armour, fire power and mobility make this robot easy meat for the system's defence shields. The Brain's one valuable feature is its ability to use the teleport key.

Nylon, the third and final fraction of the Hybrid is the most flexible of the three, its moderate fire power, armour and mobility are more than compensated for by its ability to bridge electrified areas and use specific teleports.

The maze-like complex is heavily defended and gun emplacements, mines, and a

### **Presentation 85%**

The standard selection of user-definable controls.

### **Graphics 83%**

Very few colours, but good use of shades.

### **Sound 54%**

A poor resource for music plus some simple sound effects.

### **Playability 87%**

The three robots give variation to the game.

### **Additive qualities 84%**

Intellectually stimulating.

### **Value for money 80%**

Tape - reasonable, disc - ridiculous.

### **Overall 82%**

An enjoyable battle of wits with the programme.

## 6 PAK VOLUME 2

**Elite Systems**  
**£9.95 (tape).**  
**£14.95 (disc).**  
**Joystick or**  
**keys.**

**H**O HUM, I thought... yet another mediocre bunch that never sold first time around. Well I was wrong — this is one of the most impressive compilations I've seen to date.

Into the Eagles Nest is an epic 300,000 adventure based on details of World War II history. Three of your comrades are being held captive in a mountain fortress, but before the third was discovered he managed to plant explosives at key points around the castle. Your mission is to free your friends, recover lost air treasures and detonate the explosives on all four floors.

Eagles Nest is a graphical delight. Viewed from above, the castle is laid out in maze fashion and large 3D air sprites patrol the beautifully drawn corridors as you shoot your way from room to room.

In game play, Lightforce, alien forces have invaded against our colonies in the Republic sector. Such a show of aggression is not to be tolerated and it has been decided to send a single lightforce fighter to deal with the alien battle fleet. They won't know what hit 'em!

How fly over a vertically scrolling background, manipulating every swifter, highly detailed sprite the alien air monster. On the most preliminary stages you will reach space stations — knock

out the control centres for bonus lives.

Lightforce is an out-and-out repeat-master, a game to eat the public rating and put colours on your trigger finger.

The next offering is a flight simulator — no boring junior jets through this is an all action jet fighter under your control.

The ACE fighter is a dream to fly — the controls are reduced to a minimum leaving you free to concentrate on getting the enemy into your sights.

An extensive selection of



game options is available: Dogfights against enemy fighters, static ground installations, or play based with their naval forces. Refuelling and rearming may be performed at any of the three allied bases — ensuring you are fed.

A training mode is supplied for beginners which lets you fly combat situations against an enemy that has forgotten to load its guns!

The ACE is described as 'the ultimate combat jet simulator' — I don't know about 'ultimate', but if you want a flight simulator where the emphasis is on fighting, this one fits the bill perfectly.

It's Breakout! Great! The classic classic is reincarnated here under the name of Betty.

This 1987 version is being up-to-date, incorporating all the



Betty

mod coins found in any of the recent spate of similar games.

Special feature bricks drop capsules when hit, which may enlarge the ball, slow the movement of the ball, give an extra life, or even transport you to the next level. Another original touch is the space invader which hovers behind the wall, dropping bombs.

Betty is a first class game — so simple, yet so addictive and has a genuine two player versus the computer mode.

International Karate is a good martial arts combat game. On your way to becoming a black belt you will face numerous opponents of increasing ability. By extensive use of the 16 moves available you can progress through the ranks.

Well, that's the theory but you're more likely to get the being daylight beaten out of you by some thug dressed in pyjamas.

Each round is the best of three bouts. The judge decides whether to award a full or half point for any blow landed — two points and the bout is over. In between rounds you may earn bonus points by smashing stars of life.

The international aspect refers to the backgrounds — such as the Sydney opera house or Egyptian pyramids — in front of which the game is played. This menu supplies a second version which has different back-grounds.

The final offering is Shockway Rider — one of the more original games to grace the Amiga's screen.

In the not too distant future our critics will be asked by

multi-lane moving walkways — the shockwaves. It is the height of insanity to go full throttle — complete one lap of the city. This involves passing through a dozen different obstacles, each under the control of a different gang.

The shockway lanes move at different speeds, and travelling in the fastest warns you the most points. Thugs can easily be dealt with by a skillfully lobbed bottle or brick, or if that doesn't work, an opponent is just as effective. Failure, by whatever means, is a steady affair — a stall of credits and your disappointed head waits graciously from the screen.

6 Pak must be the first ever compilation to contain six first rate games — buy it today!

David Brown



Lightforce

## SOLOMON'S KEY



**US Gold**  
**£9.95 (tape).**  
**£14.95 (disc).**  
**Joystick or**  
**keys.**

If you like infatigating, enjoyable and addictive games, you'll love this one - a mixture of platform, strategy and shoot 'em up.

You're on the trail of King Solomon's treasure and to get at it you have to work your way through a network of rooms. In each you must collect a key and reach the exit - far from easy. Of course there are plenty of enemies on patrol - whose would the software industry be without the little ones?

To collect your key or any other goodies you need to enter square boundaries which are as big as you see. If there isn't a handle handy, simply press the fire button and one will miraculously appear in the direction you are facing - you can also make them disappear by the same method.

The label is intelligible when dealing with what can only be described as spears from a computer fust. These wander around certain levels - which of course are near to where you need to go - but you can drive them by carefully laying a path of boundaries.

Some objects on your travels will give you higher scores and also a quantity of special ammunition. When fired this ammo changes adversaries into useful items to increase your score.

Watch out for the imprisoned forms. As the copy did not have any instructions I'm still unsure

what you then have.

Though hard, this game is also very addictive - you always want to come back to see if you can succeed to another level. As to how many levels there are - well, I'm still playing.

On the negative side it seems more time has been spent on the title screens and scrolling between levels, than on actual gameplay which feels very familiar. I also found myself responsive a little on the sluggish side, sometimes with fatal consequences.

Despite this, Solomon's Key is a smashing game and one that will keep you going for quite a while.

**Paul Sheppard**

### **Presentation 85%**

Pretty to look at and easy to use.

### **Graphics 85%**

Lots to see but nothing spectacular.

### **Sound 80%**

Good music and good FX. However, it would be nice to be able to turn the music off.

### **Playability 95%**

You need to work out what to do on every screen and the best path to take.

### **Addictive qualities 95%**

Let me have just one more game...

### **Value for money 80%**

Yes.

### **Overall 90%**

I liked it! However, concerning its lasting appeal...

## DEATH WISH 3

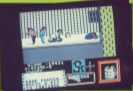
**Gremlin**  
**Graphics**  
**£9.99 (tape).**  
**£14.99 (disc).**  
**Joystick or**  
**keys.**

It's tough on the streets, especially when you're in New York. The police are powerless to prevent gangs of thugs and hoodlums from roving the lot. Now is the time for you, in the role of an old vigilante, to

map to locate gang leaders and ammunition. A time machine keeps you updated on the occurrence of riots, which can be quelled by rushing to the correct district, finding the gang leader and terminating him.

Once you've cleared a building of hooligans you can try your hand at a little striping. Walk to a window and press W - a view of the street is displayed and superimposed on this is a gunlight.

You can have only one life, the length of which is determined by the state of your bulletproof vest. As a gradually



teach these punks some manners.

The New York streets are alive with a multitude of characters - hoodlums, police, medics, little old ladies and hookers.

Spotting the hoodly element is not difficult, they're the ones carrying clubs and machetes.

Just to even the odds up a little, you have a small arsenal. Carrying a 475 magazine, a shotgun, a machine gun and a rocket launcher isn't a wonder you can still walk if you get out in search of battles.

The problems occur when you want to shoot them, as there are just too many good guys around. You are penalised for shooting the wrong people. Penalties 3,000 points and becoming a target for police marksmen.

When the weapon in use is out of ammo it is automatically replaced by one of the others. If they are all empty you keep your hands in your pockets and just stand when the fire button is pressed. Cashes of ammo are to be found inside buildings so take every opportunity to kick down a door and take a look.

You can use the on-screen

Map to help, the chances of scoring a first hit increase.

Death Wish 3 is a light-hearted game of modern-day cops and robbers.

**Steve Brock**

### **Presentation 85%**

A wide variety of well laid out controls.

### **Graphics 85%**

Reasonable graphics with some humorous touches.

### **Sound 80%**

Pleasant background tune but disappointing sound effects.

### **Playability 80%**

The controls can be quite long-lead.

### **Addictive qualities 85%**

You don't get time to be bored.

### **Value for money 75%**

Just a touch on the pricey side.

### **Overall 88%**

A good game for warring part-timers.

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## MISSION GENOCIDE



**Firebird Silver  
£1.99 (tape).  
Joystick or  
keys.**

**Y**OU don't know how hard a retired's life is, having to plough through some really awful games to give them a fair chance. Busy now and again though, it's all made worthwhile when one like this comes along.

On the principle that attack is the best form of defence and knowing the Bad Star empire is about to launch an offensive against your home planet, there's only one thing for it - go get 'em!

Each planet sends beneath your fighter as you bomb the ground installations and laser rifles after waves of defenders.

Planet one is an outpost and you soon notice that when you bomb sites, goodies appear for collection - missiles, lasers, computers, shields and astro-glo. Astro-glo! Yes, the aliens also keep some black holes in some sites and contact with one will send the glass from your craft reeling, your weapons drag off - painful!

Second planet is a farming world, and after that it's a mining planet followed by a space port and one labelled 'I don't think they like me...'. You bet they don't, I just asked them 'meat'!

After that is Inspirations End and I don't know what comes next, but I'll keep trying until I've covered the lot of 'em!

What hits you is the amazingly smooth scrolling, it looks like a hardware scroll, but there's a panel at the bottom showing the current state of

play - score, weapon status and so on.

The thing I like about this game - apart from being dirt cheap and totally addictive - is that it looks like a refugee from a real arcade machine. You'd never mistake most Amstrad games for the genuine article, but this one's different.

The sprites are simple and at times the choice of colours is pretty revealing. Even if terrestrial players and I gets some minor frame noise, the super smooth scrolling, the big, bold graphics and riveting game play all add up to Mission Genocide being a real gem.

I've just wasted the last few days doing nothing but play this game. If you're trigger happy and have two-quid to spare for a Light Plane clone, buy it, it's a bargain.

**Ian Sharpe**

### **Presentation 95%**

Nice auto-fire feature but nothing fancy, not even definable keys.

### **Graphics 85%**

Blobs (about, but) smooth and clean.

### **Sound 65%**

Next spot FX, alien de-was with a satisfying spin.

### **Additive qualities 95%**

Should carry a light warning. Why aren't they all like this?

### **Playability 95%**

Never a dull moment.

### **Value for money 95%**

Definitely.

### **Overall 88%**

A gem!

## DESPOTIK DESIGN

**Era/ Infogrames  
£9.95 (tape).  
£14.95 (disc).  
Joystick or  
keys.**

**D**EEP beneath the Earth's surface an unscrupulous adventurer has pirated programs for the reproduction of living cells.

You aren't going to believe this gang, but the world's fate is

awful, but it can also be an epic tale. If the mushroom bumps into you when the key is engaged, or not in your possession, you die.

There's the usual mazy maze of badies which get in the way and sap your energy, running out of energy being another way to see the cute death sequence. Poring the bad bomb seeds: it starting round the playing area like a guak on ice until it kills something or you intercept it.

3D isometric games have to be very special to cut any ice these days. If you like them, this



in your hands and you've got to destroy the badies and neutralise the programs.

It's a 3D isometric arcade adventure - a theme that's been done to death, and then some - in each room of the underground complex is a gate through which enters a steady stream of creation modules (robot). Lying around are blocks and on the surface of each is an arrow.

When the module hits a block, it doesn't rebound according to the laws of physics but goes in the direction of the arrow. The blocks are arranged so the creation module exits through a red gate - the gate of evil. On each screen you must rearrange the blocks so the module leaves through the green gate - the gate of life.

You can only move a block by engaging the magnetic key and this is where the killer multi-revans come into play. Every now and again one wanders in and if you touch it when the magnetic key is not in action, it eats the key and vanishes.

You Best have to hand for it through the complex. Sometimes it's only a screen

is an entertaining combination of arcade action and logic, but it's about time Era did something different.

**Ian Sharpe**

### **Presentation 80%**

Few options, needs a save game feature.

### **Graphics 90%**

As you'd expect from Era, smooth, colourful and pretty.

### **Sound 55%**

Reasonable FX but nothing out of the ordinary.

### **Additive qualities 80%**

Map it, solve a couple of screens and you'll be hooked.

### **Playability 80%**

Could have been more if the game continued after death.

### **Value for money 80%**

It'll provide hours of entertainment.

### **Overall 75%**

Not bad but a tired theme.

## MYSTERY OF THE NILE

**Firebird**  
**£7.95 (tape).**  
**£12.95 (disc).**  
**Joystick or**  
**keys.**

**T**HE Jewel of Luxor has been stolen by the evil Abu-Sabir and within 24 hours it will be in the hands of the evil master Baron von Bookfist.

The first of this brilliant Egyptian into reality will feature archaeologist (and all-round hero) Neville Smith. He and his two companions, Janet Deight and Al-Hasan, must battle their way through 80 screens of devious puzzles and split-second action if they are to foil Abu-Sabir.

Loading complete, you are given an indication of the thought that has gone into the programming. Not only can you choose between joystick, cursor keys, or user-defined keys, but you can also modify the game for use with either a colour or

green screen monitor - a feature too rarely seen these days.

The screen design is very good - a couple of lines at the bottom are reserved for information regarding ammunition and lives remaining, the rest is devoted to action - and what a lot of it there is!

Graphics and facilities are all drawn in a detailed and quite humorous, cartoon characters - a black outline being used to good effect. The backdrops are less detailed, but come complete with foreground objects to walk in front of and behind.

You have control of one of the three heroes - the currently selected character can be changed at the touch of a button. Each person carries a different type of weapon: Neville has his trusty Smith and Wesson, Janet has a supply of grenades cunningly stashed about her person and Al-Hasan carries a fearsome sword.

You begin in the city of Luxor. Janet is perched high on the balcony of her hotel room, with

Abu-Sabir's henchmen scurrying below. Leaping athletically across two more balconies she reaches a cache of grenades - now the fun begins! Dropping to the street you start blasting. Four men later you are ready to exit to screen two.

As soon as you enter, cut towards the right and prepare to throw four grenades in rapid succession at the emerging villains. While doing this keep an eye on the fifth chap, peeping from the window above - he's got a thing about dynamite.

This is a perfect example of the degree of realism achieved. Don't panic if a stick of dynamite is heading your way - there is a delay of about five seconds between it landing and the explosion. If you're really cool you can stand on the dynamite for four seconds, then step back and let a boddy run on to it.

Not until you reach screen three do you meet up with Al-Hasan - leaping dramatically from a roof top he remains close by your side.

Keeping control of Janet you split the three boddies who emerge from the building on the right. This done, it's back to the left, climb the ladder, and grab the mail on the balcony.

Occasionally this fast pace decides to lurch up the proceedings by showing everyone will grenades - it's at this point that Al-Hasan's presence can become a problem. Not only must you keep clear of the falling explosives, but Al-Hasan too. If either character is struck, he/she loses a life and you start the screen again.

Don't overreact the dynamic but watch screen four. Don't be distracted by the man on the roof, the main attack will come from the corner gun. Watch closely for heads bobbing up and down behind the fence, then blast them before they appear!

This may sound very unimpressive, but it soon let them get a shot in you're a game. Firebird informs me it is possible to jump over bullets - providing you've

got reactions like Ben Johnson - the speed of the bullets is too realistic for comfort.

Finally, it's the first appearance on screen for - this is the realised screen so far. You have three people to defend and Abu-Sabir's men attacking on both banks!

Once again realism rears its ugly head - with three people



crunched into a small area it is all too easy for a weakened friend, or an indiscriminately lobbed grenade to hit one of your own people. It took me three hours of sweat and frustration to crack it, so who should I tell you the secret - anyhow I'm now stuck on screen six!

Mystery of the Nile is a marvellous blend of cunning and programming, with a degree of realism that's second to none.

Jon Peck

### **Presentation 90%**

Very comprehensive opening menu.

### **Graphics 91%**

Colourful, well animated, cartoon characters.

### **Sound 88%**

A range of tones, plus good effects.

### **Playability 93%**

Some of the puzzles are real head scratchers.

### **Additive qualities 90%**

I challenge you to put it down!

### **Value for money 91%**

The best £7.95 you ever spent.

### **Overall 92%**

The best available adventure yet played in a long time.



## MISSION JUPITER

**Code Masters  
£1.99 (tape).  
Joytick or  
keys.**

If Jupiter is one of those few planets you've never been to, now's your chance. Courtesy of Derek Brewster, you take a non-stop, non-stop train through 10 levels of arcade action, tapping a variety of aliens on the way.

Secure in your spaceship, you can either fly through the air using your thrust pack or travel along the planet's surface. The colourful background scrolls from right to left, displaying both the rural and urban faces of this beautiful world.

As you progress, there are various obstacles over which you must fly, including cannons, fires and spikes. You must also remember to collect leaves and thrust packs lying on the planet's surface.

If that wasn't enough to worry about, the planet defence system has activated an array of forces to bring your trip to an abrupt end. These take the form of humanoid, flying saucers, missiles and meteors, to name but a few. It's just as well you have four lives!

The screen is well laid out — a top of numbers in the upper left indicates the various levels and two bars show levels of thrust and laser power. It's important to watch these carefully.

When you lose a life you die out — thankfully — have to go back to the beginning, only in the level you were on. There's also a save facility for high scores, which means once you've reached the higher levels you don't have to start all



over again.

On the whole, Mission Jupiter is a successful and playable game. The fact that it's not the most exciting nor the most stimulating around is reflected in its price.

**Tony Finagan**

**Presentation 65%**

Two-player option, save facility, good demo mode.

**Graphics 55%**

Colourful but blurry.

**Sound 50%**

Not very attractive at all.

**Playability 75%**

Yes, it's playable...

**Additive qualities 55%**

...but it's not additive.

**Value for money 60%**

Reasonable for a budget game.

**Overall 59%**

Unimpaired.

## RENEGADE



**Ocean  
£8.95 (tape).  
£14.95 (disc).  
Keys or  
joytick/keys.**

THIS one will put you off going into town since for the rest of your life. Renegade has you travelling through seven of Times' Top 10 toughest cities to collect your girlfriend, Lucy. Unfortunately, you are not alone — muggers, Hell's Angels, race gangs and not a few others are out to get you.

The object is to kill off the members of each gang (including the boss), the first in the case of level three) will come into action after you have dispatched the majority of his henchmen.

You score by attacking the enemies, the number of points you get depending on the effort this has on each victim. When you have successfully completed all screens bonus points are awarded.

All the stages test your martial arts skills to the full. The first is the tube station where a group of muggers are lying in wait for someone just like you to get off the train there.

You can kick, punch or jump at them using either the keyboard or joystick/joytick. I found whichever combination I chose, control was difficult.

The next part of the journey takes you down to the pier area — the meeting place for the local Hell's Angels. At first they try to cut you over using their blades, then taking that best you with chains in their attempt to send you on your journey right there.

If you haven't already had enough for one evening Big Bad Bertha in the backstreets makes you wish you'd never left home. As you move through her area of town you face a tough battle as she repeatedly kicks, cuts and punches you.

On screen four another group of thugs carrying bats are waiting to tie someone apart.

Eventually you arrive at the meeting place. However, the last gang has called reinforcements who are waiting to get with their gun-toting leader.

Each level is loaded separately which can get slightly annoying if you finish the cassette version.

**John Butler**

**Presentation 50%**

No options available, no save facilities.

**Graphics 95%**

Some of the best I've seen on the Amstrad.

**Sound 80%**

Each level has a different tune plus the usual special effects.

**Playability 35%**

The keys are awkwardly placed.

**Additive qualities 60%**

There's got to be a way of getting better!

**Value for money 75%**

Worth it to see the blood pouring from the dead bodies.

**Overall 65%**

One of the better martial arts games available.





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**keys.**

**I**n Martech's Catch 23 you play a man for reward with a mission. The enemy have designed a new type of aircraft - the CR 23 - far ahead of anything your side possess. It can make excursions into space and re-enter the atmosphere days or weeks later to make devastating surprise attacks.

The development site is on a heavily fortified island and your mission, should you decide to accept it, is to steal the plans for the CR 23 and leave a time bomb in the nuclear reactor.

The raid takes place on a moonless night and you have until sunrise to complete it. At the start of the game you find yourself having just landed on the island by parachute. The exact spot will depend on the wind, but in practice it's one of a small number of locations.

Because there isn't any natural light you are equipped with a night-vision image-behaviour. This gadget displays everything within 100 metres in a wire-frame outline.

There used to be a thriving community here before the military moved in and there are buildings belonging to the island's former inhabitants. When are sealed up, but a few can be entered and the contents

of the room examined. Some are safe houses where you can save or load a game. You can recognise these because when you get inside, the word SAFE is written on the wall.

Other buildings will contain batteries for post mine detectors, ammunition, explosives and the computer terminals. The story behind this is that most of the scientists working on the project have been tricked into doing so and some have formed a resistance movement.

In their hide-outs are computer terminals tied into the defence network and if you can deduce the password you can log on and find vital information.

In the instructions are jotted descriptions of all but one of the scientists. An object in the hide-out should give you a clue as to who's it is and allow you to work out the password.

New for the last news, after many hours playing and having found two terminals I haven't managed to log on yet. I'm sure that once you've checked out the rest will be easier.

And if that isn't enough Martech's graphics is combined with the dangerometer at the bottom of the screen tells you how likely you are to bump into one of these.

Every now and again a guard pops up and you have but a few seconds to plant a slug in his chest before he catches his rifle and inflicts a dose of lead poisoning.

There are also tanks which are more difficult to deal with.



Convoys like the duck out of sight, mad dogs and Englishmen jay walk and drop a time bomb in their path.

Movement around the island is on foot or by shuttle. Some of the shuttle routes are shown on the outline map supplied, the rest you have to work out for yourself.

As you move around the scenery is updated, it's not quite fast enough to give smooth animation, but it's quick enough to give a sensation of movement rather than feeling like separate pictures.

Spied relative to the buildings is in keeping with being on foot, but there's a noticeable jump between frames. As well as the buildings you'll see trees, marsh, mountains and land mines as you roam the vast playing area.

If this had been yet another 3D maze game I'd have screamed. But no, it's an attempt at a 3D simulated reality without a maze structure. I thought the graphics could have been quicker and prettier - compare it to Mercenary and you'll see what it could have been like. The overall feel of the graphic design - not the programming - is a little amateurish.

Overall I'm in two minds about this one. It's a huge, sprawling, complex game that will take you weeks, possibly months to solve. It's more of an adventure than anything else

and is only to be undertaken if you're prepared to spend a lot of time and effort unravelling it.

I can see some people being bored with others will be engaged. It's not one for those with a short attention span, but if you want a challenge with a difference I think this merits a top down to your desk.

Ian Shepp

#### Presentation 60%

Good instructions, no options.

#### Graphics 80%

Reasonably well programmed but lacking in visual appeal.

#### Sound 40%

Grating title music and a few simple FX.

#### Playability 75%

Your ability to fire terminates as the guard takes aim - but otherwise OK.

#### Addictive qualities 85%

I got to this, but it's one of those games you'll either love or hate.

#### Value for money 75%

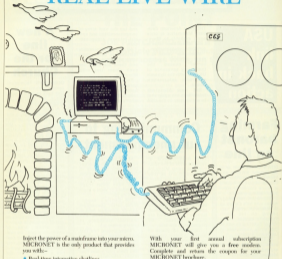
Plenty to get your teeth into.

#### Overall 75%

An interesting and challenging game.



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## USA link back in action

THE giant American database Minematics is once again available to MicroLink subscribers after a complete reorganisation.

Minematics' switch to a more efficient system carrier ceased the temporary severance of UK links with the dynamic electronic information service.

But now MicroLink subscribers can again see to enthusiasts in the USA

and tap the vast array of computer-related and special interest group services.

All the old Minematics features are back - plus some new departments - and there are plans for even closer ties with MicroLink.

These include a reverse gateway to allow the Americans to make direct calls to MicroLink and see what's on offer over here.

## A new line for the Church

COMPUTER communications systems like MicroLink have become a major focus of interest for Britain's churches.

A joint study of information technology is currently being undertaken by Church House, the Anglican Consultative Council and the British Council of Churches. It will eventually lead to more efficient electronic communication between churches all over the world.

Meanwhile similar assessments on a smaller scale are being conducted in just about every diocese in the UK. Typical of these is the one being done by the Rev Richard Thomas, communications officer for the Diocese of Winchester.

"I'm using MicroLink as part of my brief to explore the whole area of communications", he said.

"I believe electronic mail is going to become very important and I'm sure it has a lot to offer the Church - both nationally and internationally - as a communications medium".

## Farming baronet on line

DOWN on the farm or in the factory, baronet and MicroLink subscriber Sir Charles Legard is equally at home thanks to computer communications.

Information technology makes sure he's always up to date with what's happening on his North Yorkshire estates in the Vale of Pickering as well as the family businesses in Leeds and Bradford.

Sir Charles farms 1,700 acres of arable land around Scarsington Hall, Malton, in addition to running companies involved in engineering and wholesaling electrical components.

Legards has owned land in Yorkshire since the 12th Century, but the micro and modern are now as much a part of the scene at Scarsington Hall as the family portraits.

"Whether I'm at home or in one of my offices, computer communications keep me constantly in touch with what's going on elsewhere", said Sir Charles.

## Communicating to cut unemployment

TWO organisations at opposite ends of the spectrum are using MicroLink communications as they attempt to reduce unemployment.

Camden Jobtrain in North London provides local youngsters with opportunities to learn the specific skills which surveys have revealed are most wanted by employers in the area.

There are 120 places on courses in motor mechanics, carpentry and joinery, office skills, catering, and care for the elderly and young children - all leading to City and Guilds or other qualifications.

At the other end of the scale, the Mid-Career Development Centre in Croydon helps business and professional people who have been made redundant or want a more fulfilling job.

The Centre's experienced career counsellors provide individual help to restore confidence and practical assistance in getting a new job.

"Many people find that being made redundant turned out to be a built break because it galvanised them into action they might otherwise never have taken", says principal Kieran Duignan.

## Your chance to join MicroLink - turn to Page 8

## BR BOOKING EASIER

MICROLINK's convenient British Rail rebooking service has been given a complete update.

It allows subscribers at any hour of the day or night to order train tickets for journeys between London and more than 20 major UK centres from Aberdeen to York.

Subscribers can book their journeys via MicroLink after studying the electronic timetable in the comfort of their own home or office, and charge them to their Access, Barclays American Express or Travel Key account. Tickets are sent by return post.

**O**ne of the major applications for computers is that of storing data. This is especially true if you've got a disc drive.

The CPC uses a system called sequential filing to store information on disc, using Basic's PRINT#, INPUT#, and LINE INPUT# commands.

If you were to attempt to write a simple database to store names, addresses and telephone numbers the following few lines would write a single record to disc:

```
100 PRINT#1,NAME
110 PRINT#1,ADDRESS
120 PRINT#1,PHONE
```

You could write as many of these to the disc as you wanted, restricted only by the disc size. Even so, this is far more than you could fit into the computer's memory at one time, even if you could use the CPC6128's bank switching facilities. In fact, you would be using the disc surface as extra storage memory for your records.

However, there's a snag to this. Figure 1 shows how information is stored on the disc; you can think of it to a train of connected carriages.

If you start at the first carriage and want to get to the restaurant car some distance away, you have to walk through all the carriages between the one you're in and the restaurant car. In doing so each carriage is traversed in sequence: this is a sequential access system.

The same principles apply to the records in your name and address file — to get to the 50th on the disc, you have to read through the first 29.

To avoid loading all the records into memory — which you often have to do to have large programs — each of the first 29 records would have to be read in with INPUT# and discarded immediately before reading in the next.

Not terribly efficient, is it? Sequential access gets very time-consuming, especially if there are a few hundred records on the disc.

In addition you may want to arrange the records in a file so they're in a particular order such as alphabetical surnames. There are two ways of achieving this:

**Sorting:** A complete new file is made on the disc by reading the old one record at a time and writing the information out to the new file in alphabetical order. The new file takes up the same amount of space as the original, so it's not very efficient in these terms.

**Indexing:** You set up a second file — an

# STRAIGHT TO THE POINT

**JOE PRITCHARD** starts a two-part article on how to achieve random access filing on the CPC

index file — that holds a series of integers, each representing the position of a record in the original file. These numbers are arranged so that when the database wishes to access the original file in a particular order, it looks at the index file to see in what sequence it should retrieve the records. The index file is much smaller than the data file, so this method is quite efficient.

Figure 2 shows the two methods. Both are rather useless on a sequential access filing system; in the case of sorting, you have to make many time-consuming passes through the data file to extract the records in the order you require them.

Faster methods of sorting the file would need to access it in some other way than sequentially. And as for indexing, it's not really on; you could generate the index quite happily, but when you came to access the records you would really need to dip randomly into the file to extract the records in the indexed order.

You can do this by repeated passes, one pass per index file entry, but as you can imagine, this brute force approach only works on very small numbers of records.

The time taken to get to a record in a sequential access system is thus dependent upon how far in the file the target record is. So even if you manage to get things sorted alphabetically, extracting all the surnames beginning with S still means processing A to R first. What can you do?

The solution to these problems, and a host of others, is to use a technique called random access. Actually, there's nothing random about it; it means that you can retrieve a single record no matter where it is in the file, without having to go through the records that precede it.

Sorting and indexing is simple, and the solution to the problem of getting

Turn to Page 27 ▶

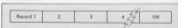


Figure 1: How information is stored

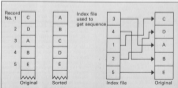


Figure 2: Sorting and indexing



# CPC Classifieds

Has upgrading your computer given you hardware you no longer need? Or have changing interests left you with unwanted software? Then **THIS** is the place to advertise your surplus items. Computing with the Amstrad CPC readers are always on the lookout for a bargain and this is the first place they look!

• First printer for CPC DM1 dot matrix for draft or graphics including lead and spare ink cartridges, very reasonable offer. Tel: 003062 548.

• Amstrad 464, colour monitor, twin disc drives, rampack, extra modulator, more vds, mouse, software, books. Excellent order. Value £990 yours for £475. Tel: 0134 61314.

• Amstrad 664 with green monitor, cpm disc, manual complete and working £80. Tel: Allan, Brighton 734472.

• Wanted Amstrad

"Guide to Basic" good price for good condition. Jordan, Fairlands, Coombe Road, Salesters, SP2 8BT. Tel: 0122 333837.

• Amsoft business control system complete suite stock invoice purchase sales nominal ledgers unused ready to register with Quest cost £148 sell £70. Tel: 0962 460346.

• Amstrad 6128, colour monitor, joystick, many tape and disc games, utilities. Only four months old £400. Also Acorn Electron, leads, games, joystick interface

**Classified advertisements will be accepted under the following conditions:**

- This service is **EXCLUSIVELY** for the use of private readers. No trade ads will be allowed.
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• CPC 6128 mono 2 months old. Top slow for my needs plus Mini Office, Miniman, Tassign £300 o.n.o. Write: Max M. Orlich, Fort William PH33 6SD.

• For sale: CPC 6128 colour monitor. Price includes word processing software package and some other extras. Price £238 o.n.o. Tel: 0202 600385.

• Amstrad cpc 6128 Rainbow Art Studio £12. Tasswood 6128 £12

complete with manuals both on disc. Tel: Northampton 404267.

• Cholo, Pawn, Bike + many others in original boxes on disc. Also some utilities. Offers Tel: Dave 01 607 3176.

• AMK Mouse plus software, plus utilities, complete package cost £85. Sell for £40. Tel: 04574 66545.

• CPC6128 colour monitor, loads of games and software, disc rack holder, joystick, blank discs, good condition £300 o.n.o. Tel: 061 426 8844.

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## Biorhythms

by Edward Way



FIND out if you're at your best with this biorhythms calculator. It's based on the assumption that your physical, intellectual and emotional states vary in regular cycles starting at birth. The first half of each cycle is posi-

tive, the second negative. At the transition between the two is a critical period where you're particularly prone to accidents, mistakes and bad luck.

On any particular date the program prints out how many days into each of

the cycles you are, together with the length of the cycle. If you're at the midway point, a warning message is printed. If this happens in more than one cycle, the day's deemed from the start to stop in bed!

```

10 INPUT "DATE OF BIRTH (DD/MM/YY)"; DD,MM,YY
11 DIM C(3)
12 FOR I=1 TO 3
13   C(I)=INT(DD+MM*10+YY*100)/1000
14   C(I)=C(I)/100
15   C(I)=C(I)*3.141592653589793
16   C(I)=C(I)*2
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91   C(I)=C(I)/2
92   C(I)=C(I)*2
93   C(I)=C(I)/2
94   C(I)=C(I)*2
95   C(I)=C(I)/2
96   C(I)=C(I)*2
97   C(I)=C(I)/2
98   C(I)=C(I)*2
99   C(I)=C(I)/2
100  C(I)=C(I)*2

```

## 3D Cube

by Rossen Tzvetz



HERE'S a neat graphics routine which draws a 3D cube in true perspective. It can then be rotated and moved in all four directions. The C and A keys allow clockwise and anticlockwise rotation while U, D, L and R control movement in the appropriate direction.



```

10 DIM X(10),Y(10),Z(10)
20 FOR I=1 TO 10
30   X(I)=I
40   Y(I)=I
50   Z(I)=I
60   X(I)=X(I)+1
70   Y(I)=Y(I)+1
80   Z(I)=Z(I)+1
90   X(I)=X(I)-1
100  Y(I)=Y(I)-1
110  Z(I)=Z(I)-1
120  X(I)=X(I)+.5
130  Y(I)=Y(I)+.5
140  Z(I)=Z(I)+.5
150  X(I)=X(I)-.5
160  Y(I)=Y(I)-.5
170  Z(I)=Z(I)-.5
180  X(I)=X(I)+.25
190  Y(I)=Y(I)+.25
200  Z(I)=Z(I)+.25
210  X(I)=X(I)-.25
220  Y(I)=Y(I)-.25
230  Z(I)=Z(I)-.25
240  X(I)=X(I)+.125
250  Y(I)=Y(I)+.125
260  Z(I)=Z(I)+.125
270  X(I)=X(I)-.125
280  Y(I)=Y(I)-.125
290  Z(I)=Z(I)-.125
300  X(I)=X(I)+.0625
310  Y(I)=Y(I)+.0625
320  Z(I)=Z(I)+.0625
330  X(I)=X(I)-.0625
340  Y(I)=Y(I)-.0625
350  Z(I)=Z(I)-.0625
360  X(I)=X(I)+.03125
370  Y(I)=Y(I)+.03125
380  Z(I)=Z(I)+.03125
390  X(I)=X(I)-.03125
400  Y(I)=Y(I)-.03125
410  Z(I)=Z(I)-.03125
420  X(I)=X(I)+.015625
430  Y(I)=Y(I)+.015625
440  Z(I)=Z(I)+.015625
450  X(I)=X(I)-.015625
460  Y(I)=Y(I)-.015625
470  Z(I)=Z(I)-.015625
480  X(I)=X(I)+.0078125
490  Y(I)=Y(I)+.0078125
500  Z(I)=Z(I)+.0078125
510  X(I)=X(I)-.0078125
520  Y(I)=Y(I)-.0078125
530  Z(I)=Z(I)-.0078125
540  X(I)=X(I)+.00390625
550  Y(I)=Y(I)+.00390625
560  Z(I)=Z(I)+.00390625
570  X(I)=X(I)-.00390625
580  Y(I)=Y(I)-.00390625
590  Z(I)=Z(I)-.00390625
600  X(I)=X(I)+.001953125
610  Y(I)=Y(I)+.001953125
620  Z(I)=Z(I)+.001953125
630  X(I)=X(I)-.001953125
640  Y(I)=Y(I)-.001953125
650  Z(I)=Z(I)-.001953125
660  X(I)=X(I)+.0009765625
670  Y(I)=Y(I)+.0009765625
680  Z(I)=Z(I)+.0009765625
690  X(I)=X(I)-.0009765625
700  Y(I)=Y(I)-.0009765625
710  Z(I)=Z(I)-.0009765625
720  X(I)=X(I)+.00048828125
730  Y(I)=Y(I)+.00048828125
740  Z(I)=Z(I)+.00048828125
750  X(I)=X(I)-.00048828125
760  Y(I)=Y(I)-.00048828125
770  Z(I)=Z(I)-.00048828125
780  X(I)=X(I)+.000244140625
790  Y(I)=Y(I)+.000244140625
800  Z(I)=Z(I)+.000244140625
810  X(I)=X(I)-.000244140625
820  Y(I)=Y(I)-.000244140625
830  Z(I)=Z(I)-.000244140625
840  X(I)=X(I)+.0001220703125
850  Y(I)=Y(I)+.0001220703125
860  Z(I)=Z(I)+.0001220703125
870  X(I)=X(I)-.0001220703125
880  Y(I)=Y(I)-.0001220703125
890  Z(I)=Z(I)-.0001220703125
900  X(I)=X(I)+.00006103515625
910  Y(I)=Y(I)+.00006103515625
920  Z(I)=Z(I)+.00006103515625
930  X(I)=X(I)-.00006103515625
940  Y(I)=Y(I)-.00006103515625
950  Z(I)=Z(I)-.00006103515625
960  X(I)=X(I)+.000030517578125
970  Y(I)=Y(I)+.000030517578125
980  Z(I)=Z(I)+.000030517578125
990  X(I)=X(I)-.000030517578125
1000 Y(I)=Y(I)-.000030517578125
1010 Z(I)=Z(I)-.000030517578125
1020 X(I)=X(I)+.0000152587890625
1030 Y(I)=Y(I)+.0000152587890625
1040 Z(I)=Z(I)+.0000152587890625
1050 X(I)=X(I)-.0000152587890625
1060 Y(I)=Y(I)-.0000152587890625
1070 Z(I)=Z(I)-.0000152587890625
1080 X(I)=X(I)+.00000762939453125
1090 Y(I)=Y(I)+.00000762939453125
1100 Z(I)=Z(I)+.00000762939453125
1110 X(I)=X(I)-.00000762939453125
1120 Y(I)=Y(I)-.00000762939453125
1130 Z(I)=Z(I)-.00000762939453125
1140 X(I)=X(I)+.000003814697265625
1150 Y(I)=Y(I)+.000003814697265625
1160 Z(I)=Z(I)+.000003814697265625
1170 X(I)=X(I)-.000003814697265625
1180 Y(I)=Y(I)-.000003814697265625
1190 Z(I)=Z(I)-.000003814697265625
1200 X(I)=X(I)+.0000019073486328125
1210 Y(I)=Y(I)+.0000019073486328125
1220 Z(I)=Z(I)+.0000019073486328125
1230 X(I)=X(I)-.0000019073486328125
1240 Y(I)=Y(I)-.0000019073486328125
1250 Z(I)=Z(I)-.0000019073486328125
1260 X(I)=X(I)+.00000095367431640625
1270 Y(I)=Y(I)+.00000095367431640625
1280 Z(I)=Z(I)+.00000095367431640625
1290 X(I)=X(I)-.00000095367431640625
1300 Y(I)=Y(I)-.00000095367431640625
1310 Z(I)=Z(I)-.00000095367431640625
1320 X(I)=X(I)+.000000476837158203125
1330 Y(I)=Y(I)+.000000476837158203125
1340 Z(I)=Z(I)+.000000476837158203125
1350 X(I)=X(I)-.000000476837158203125
1360 Y(I)=Y(I)-.000000476837158203125
1370 Z(I)=Z(I)-.000000476837158203125
1380 X(I)=X(I)+.0000002384185791015625
1390 Y(I)=Y(I)+.0000002384185791015625
1400 Z(I)=Z(I)+.0000002384185791015625
1410 X(I)=X(I)-.0000002384185791015625
1420 Y(I)=Y(I)-.0000002384185791015625
1430 Z(I)=Z(I)-.0000002384185791015625
1440 X(I)=X(I)+.00000011920928955078125
1450 Y(I)=Y(I)+.00000011920928955078125
1460 Z(I)=Z(I)+.00000011920928955078125
1470 X(I)=X(I)-.00000011920928955078125
1480 Y(I)=Y(I)-.00000011920928955078125
1490 Z(I)=Z(I)-.00000011920928955078125
1500 X(I)=X(I)+.000000059604644775390625
1510 Y(I)=Y(I)+.000000059604644775390625
1520 Z(I)=Z(I)+.000000059604644775390625
1530 X(I)=X(I)-.000000059604644775390625
1540 Y(I)=Y(I)-.000000059604644775390625
1550 Z(I)=Z(I)-.000000059604644775390625
1560 X(I)=X(I)+.0000000298023223876953125
1570 Y(I)=Y(I)+.0000000298023223876953125
1580 Z(I)=Z(I)+.0000000298023223876953125
1590 X(I)=X(I)-.0000000298023223876953125
1600 Y(I)=Y(I)-.0000000298023223876953125
1610 Z(I)=Z(I)-.0000000298023223876953125
1620 X(I)=X(I)+.00000001490116119384765625
1630 Y(I)=Y(I)+.00000001490116119384765625
1640 Z(I)=Z(I)+.00000001490116119384765625
1650 X(I)=X(I)-.00000001490116119384765625
1660 Y(I)=Y(I)-.00000001490116119384765625
1670 Z(I)=Z(I)-.00000001490116119384765625
1680 X(I)=X(I)+.000000007450580596923828125
1690 Y(I)=Y(I)+.000000007450580596923828125
1700 Z(I)=Z(I)+.000000007450580596923828125
1710 X(I)=X(I)-.000000007450580596923828125
1720 Y(I)=Y(I)-.000000007450580596923828125
1730 Z(I)=Z(I)-.000000007450580596923828125
1740 X(I)=X(I)+.0000000037252902984619140625
1750 Y(I)=Y(I)+.0000000037252902984619140625
1760 Z(I)=Z(I)+.0000000037252902984619140625
1770 X(I)=X(I)-.0000000037252902984619140625
1780 Y(I)=Y(I)-.0000000037252902984619140625
1790 Z(I)=Z(I)-.0000000037252902984619140625
1800 X(I)=X(I)+.00000000186264514923095703125
1810 Y(I)=Y(I)+.00000000186264514923095703125
1820 Z(I)=Z(I)+.00000000186264514923095703125
1830 X(I)=X(I)-.00000000186264514923095703125
1840 Y(I)=Y(I)-.00000000186264514923095703125
1850 Z(I)=Z(I)-.00000000186264514923095703125
1860 X(I)=X(I)+.000000000931322574615478515625
1870 Y(I)=Y(I)+.000000000931322574615478515625
1880 Z(I)=Z(I)+.000000000931322574615478515625
1890 X(I)=X(I)-.000000000931322574615478515625
1900 Y(I)=Y(I)-.000000000931322574615478515625
1910 Z(I)=Z(I)-.000000000931322574615478515625
1920 X(I)=X(I)+.00000000046566128730773928125
1930 Y(I)=Y(I)+.00000000046566128730773928125
1940 Z(I)=Z(I)+.00000000046566128730773928125
1950 X(I)=X(I)-.00000000046566128730773928125
1960 Y(I)=Y(I)-.00000000046566128730773928125
1970 Z(I)=Z(I)-.00000000046566128730773928125
1980 X(I)=X(I)+.000000000232830643653869640625
1990 Y(I)=Y(I)+.000000000232830643653869640625
2000 Z(I)=Z(I)+.000000000232830643653869640625
2010 X(I)=X(I)-.000000000232830643653869640625
2020 Y(I)=Y(I)-.000000000232830643653869640625
2030 Z(I)=Z(I)-.000000000232830643653869640625
2040 X(I)=X(I)+.0000000001164153218269348203125
2050 Y(I)=Y(I)+.0000000001164153218269348203125
2060 Z(I)=Z(I)+.0000000001164153218269348203125
2070 X(I)=X(I)-.0000000001164153218269348203125
2080 Y(I)=Y(I)-.0000000001164153218269348203125
2090 Z(I)=Z(I)-.0000000001164153218269348203125
2100 X(I)=X(I)+.00000000005820766091346741015625
2110 Y(I)=Y(I)+.00000000005820766091346741015625
2120 Z(I)=Z(I)+.00000000005820766091346741015625
2130 X(I)=X(I)-.00000000005820766091346741015625
2140 Y(I)=Y(I)-.00000000005820766091346741015625
2150 Z(I)=Z(I)-.00000000005820766091346741015625
2160 X(I)=X(I)+.000000000029103830456733705078125
2170 Y(I)=Y(I)+.000000000029103830456733705078125
2180 Z(I)=Z(I)+.000000000029103830456733705078125
2190 X(I)=X(I)-.000000000029103830456733705078125
2200 Y(I)=Y(I)-.000000000029103830456733705078125
2210 Z(I)=Z(I)-.000000000029103830456733705078125
2220 X(I)=X(I)+.0000000000145519152283668525390625
2230 Y(I)=Y(I)+.0000000000145519152283668525390625
2240 Z(I)=Z(I)+.0000000000145519152283668525390625
2250 X(I)=X(I)-.0000000000145519152283668525390625
2260 Y(I)=Y(I)-.0000000000145519152283668525390625
2270 Z(I)=Z(I)-.0000000000145519152283668525390625
2280 X(I)=X(I)+.00000000000727595761418342626953125
2290 Y(I)=Y(I)+.00000000000727595761418342626953125
2300 Z(I)=Z(I)+.00000000000727595761418342626953125
2310 X(I)=X(I)-.00000000000727595761418342626953125
2320 Y(I)=Y(I)-.00000000000727595761418342626953125
2330 Z(I)=Z(I)-.00000000000727595761418342626953125
2340 X(I)=X(I)+.000000000003637978807091713131928125
2350 Y(I)=Y(I)+.000000000003637978807091713131928125
2360 Z(I)=Z(I)+.000000000003637978807091713131928125
2370 X(I)=X(I)-.000000000003637978807091713131928125
2380 Y(I)=Y(I)-.000000000003637978807091713131928125
2390 Z(I)=Z(I)-.000000000003637978807091713131928125
2400 X(I)=X(I)+.0000000000018189894035458565659640625
2410 Y(I)=Y(I)+.0000000000018189894035458565659640625
2420 Z(I)=Z(I)+.0000000000018189894035458565659640625
2430 X(I)=X(I)-.0000000000018189894035458565659640625
2440 Y(I)=Y(I)-.0000000000018189894035458565659640625
2450 Z(I)=Z(I)-.0000000000018189894035458565659640625
2460 X(I)=X(I)+.00000000000090949470177292828298203125
2470 Y(I)=Y(I)+.00000000000090949470177292828298203125
2480 Z(I)=Z(I)+.00000000000090949470177292828298203125
2490 X(I)=X(I)-.00000000000090949470177292828298203125
2500 Y(I)=Y(I)-.00000000000090949470177292828298203125
2510 Z(I)=Z(I)-.00000000000090949470177292828298203125
2520 X(I)=X(I)+.000000000000454747350886414141491015625
2530 Y(I)=Y(I)+.000000000000454747350886414141491015625
2540 Z(I)=Z(I)+.000000000000454747350886414141491015625
2550 X(I)=X(I)-.000000000000454747350886414141491015625
2560 Y(I)=Y(I)-.000000000000454747350886414141491015625
2570 Z(I)=Z(I)-.000000000000454747350886414141491015625
2580 X(I)=X(I)+.00000000000022737367544320707074578125
2590 Y(I)=Y(I)+.00000000000022737367544320707074578125
2600 Z(I)=Z(I)+.00000000000022737367544320707074578125
2610 X(I)=X(I)-.00000000000022737367544320707074578125
2620 Y(I)=Y(I)-.00000000000022737367544320707074578125
2630 Z(I)=Z(I)-.00000000000022737367544320707074578125
2640 X(I)=X(I)+.0000000000001136868377216035
```



**T**HIS month we're going to look at other ways of reading the keyboard and start the theory subject of lists. These are an essential part of Logo and it is important that you appreciate the fundamentals involved in using them.

You'll remember Logo can get a character from the keyboard by using the `rq` command. That's fine if you only want one character but what happens if you want an entire word or sequence of words? There are two more commands to take input from the keyboard, `rl` and `rr` but at first the distinction between the two may not be clear.

We'll get the hang of `rl` first. It's short for read quote and will output a string of characters rather than a single one. Key in this example and run it. When you've typed your name just press Return.

```
to read
  pr [Enter your name!]
  ask [ask rl]
  pr [Enter hello name]
end
```

As you can see, `rl` works in pretty much the same way as `rq` but takes a sequence of characters terminated by a carriage return. The line that prints the second message may not be clear so I'll explain.

We want to print `hello` and the contents of the variable `name` on the same line but:

```
pr [hello name]
```

will generate an error. Or it will if you do it in a program because `pr` is looking for one object and after it's processed `hello` Logo won't know what to do with the output from `name`. In direct mode you won't get the error because Logo prints anything it can't find a home for on the screen.

We've already seen how a statement like:

```
pr [hello list]
```

will group items together in a list, and a list being one object is acceptable input to `pr`. But if we try:

```
pr [hello name]
```

we'll get a problem we've encountered before. Logo will take `name` as a group of characters rather than an instruction to extract the contents of

# Logo lists

IAN SHARPE's series gets in key

the variable and you'll see `hello name` on the screen.

The primitive `list` converts the objects that follow into, you've guessed it, a list. The brackets are only really necessary if more than two items follow. If you miss them out with three or more objects, only the first two will be taken by `list` and the rest one will cause an "I don't know what to do with ..." error.

I'd like you to try the procedure `askhello` again, this time using `rl` instead of `rq`. You'll find it operates in almost the same way as before; it still waits for you to type in some characters, it still says hello to you but your name is now printed in square brackets.

Try modifying it again but this time change `list` into `set`. Now it seems to work in the same way it did at first with `rq`. Why do `rl` and `rq` operate in almost the same way and what's the difference between `list` and `set`?

It all hinges on the concept of the list and the difference between a list and a word. It's not too difficult to understand now you've got a feel for the language.

A word is a string of characters, a list is a collection of objects, some of which may be words. In the case of the `rl`, `name` holds the sequence of characters you type in. If you enter `list` at the request for your name and ask Logo how many elements the contents of the variable `name` is composed of, you'll get the answer three because there are three letters in my name.

Try it for yourself - run the original version of `askhello` and when it's finished type in:

```
count name
```

The new command `count` tells us how many separate parts make up the object to its right. Here we're giving it the contents of `name` to count and it

will answer with the number of characters in it.

Now go to the other version of `askhello`, the one that uses `rl`, and do the same. This time you'll see the answer one. Try both again, this time using your full name as input. If you type in `Fred Bloggs`, the `rl` version will give you 11 elements because there are 11 characters including the space. With `rl` you'll get two.

The difference is that `rl` outputs a word which is just a collection of characters. On the other hand, it outputs a list and each word you type in is a separate item in the list. As you may have guessed, it is short for read list.

That's why the `rl` version shows your input in square brackets - name is supporting a list and lists are usually displayed that way unless you remove the brackets first. This is what `set` does, it works in the same way as `list` but removes the square brackets.

Now it may be confusing that in both cases `name` is holding the same sequence of characters but Logo is treating them differently depending on which form of input statement we use. On one occasion it's thinking in terms of a sequence of distinct characters, on another the smallest element it can see is the individual word.

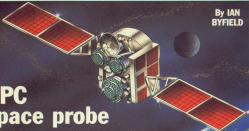
Perhaps things can be made clearer if we introduce another command, `item`. In the same way a colon before a variable name will extract its contents, `item` in conjunction with a number will extract the specified element from the object to its right.

```
with 3 [transformers]
  ask 3 [transformers and word]
  pr count it
  pr item 1 it
  pr item 1 it
  pr item 2 it
  pr item 2 it
  pr item 3 it
```

In the first line we're putting on

Turn to Page 26 >



By IAN  
BYFIELD


# CPC space probe

**T**HE comings and goings of spacecraft from Earth, the movement of minuscule particles through the galaxy, and the radiation levels of the cosmos are all part of the daily life of Lawrence Harris and his CPC128.

But this is no game. With some imaginative software, Lawrence is able to receive and decode messages from satellites.

"You can now use the CPC to calculate the times when each satellite is visible from wherever you live and process the data it beams to Earth and watch the changing conditions in space.

"This was absolutely impossible a few years ago unless you could afford to spend thousands of pounds on a computer.

"The large memory of the 5120 now makes it possible to hold space data for processing and believe me it can be a lot more interesting than playing games", he claims.

Computer instructor at Plymouth Information Technology Centre, 40 year-old Lawrence spent 17 years working on satellites with the Science and Engineering Research Council in the Rutherford Appleton Laboratory in Oxfordshire.

Initially he was concerned with the UK 3 satellite and then became a shift leader on UK 8. During his time at the laboratory he was called upon to help the Americans with problems they were having with Landsat.

"When I was working with sats I was using £250,000 worth of equipment. The vast development of computers means that nowadays almost the same sort of thing can be done on a CPC", he said.

He was aware that software had

been written to help BBC Micro users to decode the signals from Sussex University's satellites (UoSATS) but though he built a small radio receiver very cheaply and bought a decoder, he could not find any programs for the CPC.

So he wrote his own. "It proved quite straightforward but took a long time".

His programs allow the user to look at the absolute values of the various systems onboard the UoSATS. The university publishes a list of the conversions required to change the telemetry values on the screen into real numbers and these have been built into his software.

Lawrence explained: "There is only enough memory available to store about one third of a typical UoSAT pass, so you cannot process all the data in one go".

Eventually he plans to improve the software to utilize the second bank of memory for storing data.

UoSATS 1 and 2 are designed to be particularly easy to pick up and decode, so it is these on which he concentrates.

He explained the satellites' operation - part of it is housekeeping, relating to the performance of the equipment. They also collect astronomical information.

His particular interest is in the amount of meteoritic dust in space, statistics which they continuously record. There is also a geiger counter on board which measures the amount of radiation coming at us from the cosmos.

The satellites broadcast within the international convention on formats and their information is transmitted about once every six minutes. A

typical sequence begins with 20 seconds of realtime data. All the satellite's 80 channels have instantaneous readout to ground stations - that is, anyone who can pick up the signals.

There is a Space Bulletin which offers ordinary scrolling text. It arrives far too quickly to be read on screen, so must be stored and processed later. This gives space news - what's happening with satellites and, proposed rocket launches across the world and so on. It takes only a minute or two to transfer this information.

The devices are also being used for the Digital Communications Experiment (DCE), which is confined to special users. Messages can be forwarded, stored and released at some specific point around the world - a sort of special Email.

Koppler elements are broadcast; these are needed for the updating of satellite trajectory information.

Next comes the W3D - Whole Orb: Data - which is astronomical and scientific information gathered and stored during orbit and then rapidly transmitted.

There is also a Charge Couple Detector (CCD) which is a camera taking pictures of the Earth. This is another area which has captured Lawrence's attention.

"I'm working on software for this now, so I can receive these pictures more clearly", he said.

He believes much more should be done in schools and universities to make students aware of how easy and relatively inexpensive it is to find out about space.

"There's a whole universe out there which your CPC is waiting to hear about", he said.



# Home-brewed adventuring

## Gandalf looks into the future

**O**NE of the rewards of writing a column is the pleasure of seeing the emergence of new software houses. Castle of Eagles, one of the games reviewed this month, was originally sent in for my opinion on its marketability. My reply at that time was favourable and the author seems to have formed his own software company to market it.

As I have said before in these pages, it is the smaller software houses and "home brewers" who keep the adventure industry alive, so I am more than pleased to see this and Flash Back, another "home brew", reach the market.

The future of adventuring on the CPC lies very much in the hands of devotees of the genre and it is nice to see some of them releasing their own creations.

While the larger software houses may have the facilities to produce lavishly packaged games, the smaller ones do not, and all too often they are criticised for it. I feel very strongly that it is the responsibility of people like myself to encourage new talent and to bring it to your attention whenever possible.

I have had a letter from Glenda Pickering, recommending the Very Big Cave Adventure, as she considers it to be one of the funniest she's ever seen.

## CAN YOU HELP?

JOHN Stevenson is having trouble with the Green Knight in Lord of the Rings Part 1. He has found some swords at a location just outside Bree but feels they are too far away to be the necessary weapons. Can anyone help him?

The Fantastic Fear is causing problems for Nicholas Marshall. He has the thing under the tar and has persuaded the Torch to put the pebble under the boulder so the Torch can get it and throw it up through the hole back at the boulder. But the thing will only throw it up gently. Can anyone help him out?

She's not entered the review competition but gives details that would in fact make a good review. By not entering, Glenda, you are doing yourself a disservice. Please write in, enclosing your address, so I can get in touch.

Ratlin of Sherwood is causing problems for Kirk Coverley. He wants to know how to get into Leaford Grange without being attacked by the guards - you can't, so don't try! And how to get the treasure chest open when Robin is in the castle (after hiding in the cart).

Rescue Marion and tell her to follow you, go to the location south of Leaford Grange, examine Marion, go into the cave and get Seward and, when in the treasure chest location, drop Seward and he will open it for you.

Katy Sheppard would like some help with Bored of the Rings Part 1. To get under the hedge just go down. Do you have to find Aragorn? Yes, he is at the Lovely Marsh Inn? No - he's at the Puffy Pumper.

Two adventures are troubling Rosalynde Warner. In Forest at World's End, I think she has yet to get the key from the Witch's house and the chest from inside the volcano. When taken to the blacksmith, this will yield a sword that will enable her, by touching the rock, to get through the rock wall.

In the second, Game of Stradius, she has given me no information at all about where she is stuck. Please send me further details Rosalynde, preferably enclosing a stamped addressed envelope, and I will try to help.

Full marks this month to Graham Wheeler for redressing an error in the

August solution to Message from Andromeda. I must admit I didn't - "tell the commander with circled" indeed.

It seems a chunk of text went missing during the office file transfer, and of course, what was left would make sense to anyone who didn't know differently. Perhaps, in the true spirit of adventuring, it went off to explore strange new locations down the phone line.

I'll print the corrections next month for those of you in difficulties.

## HALL OF FAME

**Excalibur - A solution by Graham Wheeler.**

GO NE and enter the shack. Open the oven, get the bread and get the jug and lantern. Fill the jug at the well and visit the village. Here you should go South into the forest where you will be given a scroll. Examine it then GHOST RECORD to write it into your spell book. Learn the spell and use it at the castle gate to enter.

Learn the Fire spell to light your lantern and visit the dungeon. Open and enter the cell and get the block to reveal a secret passage. In there you'll find a spoon and another spell - so take them. Examine the scroll to find out which spell you have found and write it into your spell book.

In the south hall drop the lantern, then go East into the gallery and get the illuminated portrait. Behind it you will find a niche that contains a black candle and another scroll. Put the

## FEEDBACK

**GRAHAM** Wheeler, Kirk Coverley and Paul Woodhouse have all provided help for J Dismay who is stuck in The Curse of Sherwood.

To get safely across the swamp you have to kill the dragon with the crossbow and take his gold to the old man in the hut. He will give you a map showing the way through the swamp. Kirk writes that the route to do this is: W, N, E, E, E, E, E, E, kill dragon, take money, W, W, W, W, N, N, W, N, give money to old man and take map.

Linda Friend has sent the following hints and a solution to help Simon Druce (August) with his problems in The Vera Cruz Affair.

The game is difficult to play because the instructions are badly translated. Examine each scene carefully (scapes by square), there are a couple of clues that are not easy to spot.

When examining the Carnet, press the Copy key again to get some helpful information.

When using the Examination (E) facility, ask for Autopsy Vera Cruz. There is a Graphological examination but I cannot get it to work. Can anyone else?

Use the message facility (M) to inquire on CRRU LYON about nicknames, the pistol and various people. This will give you other

places to try. When using the State-of-the-Art (S) option, question everyone you can, including the caretaker and Vera's neighbour.

To get information about the BMW you must ask PRIP LYON. The format is \$115 17 68 (the two 1s are letters you have to find by a process of elimination).

When you have questioned everyone, use Comparison (C). You will find the names of three people to question a second time. If you cannot get different statements you have not completed your investigation. From the new statements you will get a confession and can arrest the guilty party.

### The Scene of the Crime - The Clues

#### On the Table

Matches - Bar de Sympe, 2 Station Square, St. Etienne.  
Cigarettes - Rotmans.

Note - Goodbye! I must end it all Vera.

Activity - Two cigarette ends - one Rotmans and one Carnet with lipstick on.

#### On the Floor:

Pistol - Automatic MAC 50mm - Gienay.  
Handbag - Contents: Carnet cigarettes and items marked Vera Cruz.

Carnet - Press Copy to get addresses:  
five Transport cafe in Givors 88.  
Hub 75226977.

Pasty: Bar of Poplars.

#### Carriage case

(left of armchair) - Iron cables To S P 3-78.

#### Button

(left of handbag in shoebox) - Black button.

#### On the Body:

Left arm - Traces of recent needle marks.

Left hand - Black cotton under fingernail.

### Solution

#### Examination

CRRU Lyon

GEI Gienay

CRRU Lyon

Geography

Statements

System

CRRU Lyon

Statements

CRRU Lyon

GE St-Galerier

Pin St Paul

CRRU Lyon

Cas Lyon

CRRU Lyon

Statements

Statements

Out St Etienne

Prof Lyon

Autopsy Vera Cruz

Photo MAC 50 (28743)

Photo MAC 50 (28743)

Van Dru

Geography

Neighbour

Police Laballe

Pasty

Police Laballe

Crime

Police Phillips

Police Phillips

Bar Gienay

Bar Gienay

Five Belgium

Police Phillips

Five Belgium

Police Phillips

Police Phillips

Police Phillips

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Police Phillips  
Police Phillips  
2 Barre St, St Etienne.

Bar of Poplars

2 Carnet Sq, St Etienne  
Transport cafe, Givors  
St Etienne

37 Terrasse Sq, Lyon  
Bar de Sympe, Station  
St, St Etienne  
St, St Etienne  
25, Rue Courc 6, Zola,  
Villurbanne

2 Carnet Sq, St Etienne  
Bar de Sympe, Station  
St, St Etienne  
37 Terrasse Sq, Lyon

spell into your spell book.

Proceed to the beach, learn the Nitral spell and tell the turtle to follow you. Make your way to the engine room and learn and use the Ewan spell on the turtle. Tell it to go SE, get the scroll then go NW. It will fetch it for you so thank it.

During the course of the game you will need to eat, drink and sleep. The water can be replenished from the boat, but you only get one loaf of bread so speed is important.

To sleep you should go to the bedroom in the SAN tower where you will experience dreams that give you clues. Each night's dream is different and the dreams are about: A girl who does something to the bedpost, your sacrifice, the adventurer and kill and sleep.

Before you sleep, always learn the Sleep spell and use it on the spell book to protect it against theft and, immediately on waking, learn the Melfor spell and use it on yourself.

Once you have slept you will find you have forgotten all except the Quartz spell and will have to relearn any that you want to use.

### Adventure Quest - Part 3 of a solution by Glynn White

CLIMB the web and take the earth-stone which you will lose to an orc before when fighting the spider. Go to

Turn to Page 32

## ACTION REPLAY

AG promised last month, in response to many requests here is a complete index of all the hints, solutions and maps published in this column in the last 18 months.

TITLE	TYPE	ISSUE
Adventure Quest	Solution	Sept 1987
Band of the Ring	Map part 1 Map part 2 Map part 3	Jan-Feb 1987 Mar 1987 Apr-May 1987
Bugs - part 1	Solution	May 1987
Dangerous Adventure	Solution	Nov 1986-Mar 1987
Dangerous, Amethyst, Mithril's Scepter	Solution Map	Sept 1987 Oct 1987
Fountain Diamond	Solution	Oct-Dec 1986
Forest at World's End	Map Solution	May 1986 May 1986
Heaven of Kam	Hint sheet	July 1986
The Rabbit	Solution	Oct-Dec 1986
Imagination	Solution	July 1987
Jewels of Babylon	Diagrams	Aug 1987

TITLE	TYPE	ISSUE
Leather Goddess	Map	June-July 1987
Lords of Midnight	Hint sheet	Aug-Sept 1986
Message from Babylon	Solution	Aug 1987
Merlin's quest	Hint sheet Solution	July-Aug 1986 June-July 1987
Mist	Solution	June 1987
Neverending Story	Hint sheet Solution	Oct 1986 Aug 1987
The Power	Solution	Sept-Oct 1987
Red Moon	Hint sheet	July 1987
Returns to Eden	Hint sheet	July-Sept 1986
Robin of Sherwood	Hint Sheet	June 1986
Sacred Delta	Map	Aug-Sept 1987
Spyrit	Solution	Apr 1987
Solbank	Hint Sheet Solution Map	June 1986 Oct 1986-Jan 1987 Dec 1986
Tarnstones	Map	July-Nov 1986
Warlord	Hint Sheet Solution	June 1986 June 1987
Zakh	Map solution	Jan-Mar 1987

#### ← From Page 21

the stone room where you will be able to retrieve it.

Don't join in the feast - you'll find you're on the menu. When crossing the bridge, cut the rope after you to prevent pursuit. Incidentally, you'll also find that you now have no more trouble with arrows.

Back at the cave, drop the sword and head for the beach. Revert to gills and drop the earth-stone down the hole. Go back to the beach and, with the long token and lamp, collect the sword and get the egg from the dragon's lair.

Now comes a tricky bit. Go to the ledge above the crater and drop the lamp. Later you'll have to re-enter and travel in the cave in the dark - unless anyone knows differently. Wait for the flames to go and then move NE, SW and Down.

You now have to travel down an every alternate stone - that is, use LOOK or NW after every stone down. You will have to collect the insulation cloak on your journey and can substitute this action for the commands above.

At the bottom of Hall Wall - you can travel normally when the flames stop - find the passage with the hot coals. Throw the cloak over the coals and you will be protected from them (the sword gives protection from the heat of the passage).

Travel to the smelt room and drop the egg into the nest and the phoenix will appear. Return to the crossing. (North of here is another teleportal that will take you to the pinnacle in the desert), and go West and get the cloak.

Go to the altar and take the sun-stone back to the nest. Whoops - where did he come from? Never mind, remember Gandalf and the Balinog and smite the bridge.

Now you have to take care or the eagle will get you. Go straight to the cairn-topped hill and transport the sword and bracer to the base of the hill. Drop the sword and bracer - you will warm up. Take the bracer again, and return to the top of the hill - you'll have to go the long way round - and drop it again.

Take the sun-stone and mist-stone. Enter the tunnel - it has a black dot that will take you to the seaman's cave. Go to the lake and drop the two

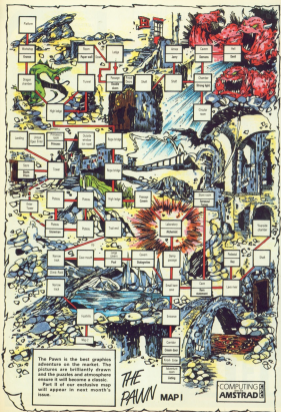
stones into the hole. Return via the cave and enter to the hill and take the bracer down to the same stage again. Drop it for warmth.

## BUG HUNTER

AUBREY Sinden has written in with what seems to be a bug in The Neverending Story. Following the solution published in the September issue, he has got Arax and gone PLW, and NW and, instead of Arax dying, the program has crashed. Oozer's reaction to this was to say that not only did he not need to go into the swamp, he doesn't even need Arax.

I can't check this out without a copy of the game. It may be that there are different versions of the game or that certain conditions need to be met before the location can be entered. Can anyone who has completed the game state whether they found any bugs?





The Pawn is the best graphics adventure on the market. The pictures are brilliantly drawn and the puzzles and atmosphere ensure it will become a classic.

Part II of our exclusive map will appear in next month's issue.

# THE PAWN

MAP I

COMPUTING BY  
**AMSTRAD**



## The Mystery of Arkham Manor

### Malbourne House ES-95 (cassette)

**T**his year is 1828. The editor of the London Chronicle has received a very disturbing letter from an eminent contributor, Major Larkin, stating there are strange, mysterious events taking place in his village of Arkham. His star reporter — you — is dispatched to investigate.

This two-part adventure begins with your arrival at the village station.

A visit to the local inn to arrange accommodation for the night should be your first stop, followed by a thorough investigation and examination of the village.

Several locations, you will discover, are not initially open to you. The barrier near the Manor is simply the divide between the two parts of the game, the *clue* is the church should pose little difficulty if you are polite to the vicar, and the cellar is the inn can be visited if you accommodate the landlord by visiting the mill.

To reach a complete solution, you will have to send telegrams to get further information about people and places you encounter during your travels.

Each telegram you send costs money and, as you begin with only a limited amount, you have to spare more by being smart. Selecting the Report option allows you to create your own from page, complete with headlines, story and even photographs. You are paid for each story you submit and can also print out the result to any Epson-compatible printer.

Once you have filed the story, you merely have to wait until the following day to find that further funds have been credited to your account at the local bank.

Your status is represented by three factors: the amount of money you have, how much you have learnt and the state of your

sanity. The last is adversely affected by frightening encounters and restored to normal by sleeping.

You will find that unless you have solved the first part of the game, your sanity slips away by the end of the third day and the game ends.

One thing not mentioned in the documentation is the time limit within which you have to complete your investigations. It is important then, to plan an overall strategy. You should spend the first day meeting as many people as possible and examining everything you find. Try to file at least one story and solve as many problems as possible.

If you are impatient of anyone, send a telegram to head office to see if they can give you any further information. You should then sleep the night at the inn.

On the second day, collect money from your account at the bank, pick up any telegrams that may be waiting for you then visit every location — changes will have taken place.

Before retiring for the night, you should be in a position to telegraph for the final clue to help you crack this first part of the game.

The screen is divided into several main areas. Most of the top half shows your character and any actions he performs, his location and any other characters and objects present. The remainder displays a menu of available options including Move, Drop, Say, Give, and Read.

You select the one you want using the arrow keys and confirms by pressing the spacebar. When you select an option that entails further action, a subsidiary menu appears. For instance, selecting Drop will bring down a menu showing the objects you possess so you can choose what to drop.

The bottom half of the screen is split into



a variety of sections detailing responses to actions incidents that take place independently of any actions and small representations of any photographs you take using the three reusable photographic plates.

It also shows text input when using the Say option, a calendar and clock to monitor your dependencies on the time, the pages from the notebook available for recording clues or conversations, and telegraph forms you enter text into to obtain further information.

I am impressed with this game. However, it is slow and that can be very frustrating sometimes, but it's the best attempt yet at an annotated adventure.

Add to this the facilities to create and print your own stories and you have a first — an adventure with a built-in word processor and desktop publishing package. The actual game isn't too hard to solve and I suspect many people will be finding it to create their own front pages long after solving it.

Overall, the closest thing yet to an annotated adventure — surely the real thing can't be too far off now!

#### Presentation 85%

Excellent graphics.

#### Atmosphere 81%

I couldn't really tell it was supposed to be 1828.

#### Frustration factor 80%

Easy in some parts, baffling in others.

#### Value for money 92%

The desktop publishing aspect is responsible for such a high score.

#### Overall 80%

Probably the best graphical adventure I have seen so far.



## Castle of Eagles

**S&M Software**  
**£4.95 (cassette)**

**T**his is a very creditable first release from a firm software company. You play the part of a man parachuted into German territory during the Second World War. Your mission is to penetrate a fortress



and find and copy some secret documents. As the game begins, you are falling towards the ground after jumping from the plane, and getting your parachute open is your first priority. Having done this, you are prompted to "Push C or S to continue".

It's not hard to fulfil the purpose of this command as pressing either key has the same result - you find yourself in the snow-covered mountains next to the dead body of your partner.

You must now gather your equipment, avoid a German motorcycle and a spotter plane that sometimes appears, pacify wild dogs, cross a river and get into the camp.

Having done this, you enter the second part of the game and continue your mission.

I feel that if the graphics and number of similar locations had been reduced and more puzzles put in their place, it would have been more impressive.

Overall, a good first release and I look forward to seeing more from them in the future.

The game can be obtained from PO Box 332, London SE15 2JL.

### **Presentation 72%**

Graphics in every location.

### **Atmosphere 77%**

After floundering around in 42 or so taken locations I was starting to get cold myself!

### **Frustration factor 52%**

The extensive graphics and repetitive locations means the puzzle content and career has suffered.

### **Value for money 58%**

A cheap over-priced but will prove good.

### **Overall 65%**

The author has tried to satisfy everyone at once. With more puzzles the mark would have been higher, but it's still a fine adventure.

## Flash Back

**Visual Dimensions**  
**£3.99 (cassette)**

**W**HEN I first read the scenario for this game I was singularly unimpressed. The more I play the game though, the more I like it and the greater my respect for the authors.

You play the part of Major Catastrophe and have 24 hours to raise the necessary funds to repair your forces before the crucial battles are won to demolish it.

In the first section of this three part graphical adventure you have to accomplish two things: find the equipment you need to save the game and a comfortable location so you can fall asleep. One of the latter is that you have to visit the Major's post in the other two sections - you gain access to this dimension by falling asleep.

I'm not going to spoil too much of your fun, but I think it only fair to point out that one of the objects you need is on an alien planet.

Visiting this planet could well be the hardest problem to overcome in Part 1, though obtaining something solid and something that creates a lot of heat were you well on the way.

You'll also need to consider your attire when visiting the planet and two obvious objects should help here. Having assembled your inventory, you should attempt to find the right location to use it in.

You'll be stoned when you do, but you should soil off before taking off or you



might go off, rather than up, with a blast.

The object you find when you get there is not immediately useful, but is necessary if you want to finish the game and will give you a boost when used.

The second part takes you back to the Major's experience in the First World War. You must kill an evil doctor and dispose of a newer weapon so well as collect further objects that may be of use.

In the final part, you return to the Second World War and have to escape from a POW camp and find the whereabouts of a valuable Egyptian relic.

You now return to the first section and, if you have done everything as you should, you are now in a position to make sure the relic reaches someone who can appreciate its value. Succeed, and you have saved your home.

There are several spelling and punctuation mistakes in the game, and its documentation, and the authors do not seem to

have quite mastered the art of vertical scrolling - so don't adjust your set when loading.

A more serious fault is that the game does not seem to have been tested before being released. In Part 1 it crashed on me when I typed in PRESS ROOM by mistake, and again in Part 2 when I entered OPEN DOOR. On both occasions I had to reload from scratch.

Aside from these bugs, I have nothing but praise. The storyline is completely original, the puzzles well constructed, the graphics comprehensive and I found myself totally immersed in the atmosphere that it evoked.

The game can be obtained from 58, Runnymede Lane, York YO2 1AA.

### **Presentation 45%**

The mark would have been a lot higher had it not been for the bugs and spelling mistakes.

### **Atmosphere 87%**

Very good.

### **Frustration factor 82%**

Original enough to make old hands get very frustrated!

### **Value for money 65%**

Could have been a lot higher if the game had been checked first.

### **Overall 70%**

Properly tested it would have been rated much higher. Even so, I can recommend it.



# Life at C

IAN SHARPE takes the plunge with Amrod's CP/M Plus implementation

Product: Amrod C  
Price: £69.95  
Supplier: Amrod Ltd., Princes House,  
Wainman Rd., Peterborough PE2  
0BU  
Tel: 0535 226011



**I**n the June 1987 issue of *Computing with the Amstrad* we reviewed Amrod's Maxam II, an excellent CP/M Plus machine-code development package. Now Amrod has followed it up with a CP/M Plus C compiler which, they say, is the first full implementation for the CPC6128 and PCWs.

I haven't tested other CP/M compilers such as Astele, Ezo and Mls which might contest the claim, but these are general CP/M compilers, not Amstrad specific.

Amrod C is supplied on one 3in disc together with a ring-bound manual. Included are Apeid, Amrod's superb program editor, the compiler, linker, joiner, function libraries, runtime system, utilities and example programs.

I won't go into detail about Apeid because it was covered in the Maxam II review, and as it's the program mode of Princes it will be familiar to most people, even if only by reputation.

Although it lacks some of the features you'd find in a dedicated C text editor, it's still the nicest I've seen and it'll take a lot of convincing before using anything else.

Before going on to the rest of the package, I'll say a few words about the nature of C in case you missed previous reviews. It's a compiled language developed to write the Unix

operating system and has since become popular in diverse areas of computing.

Your program is written in a text editor and the resulting file passed to the compiler which converts the text into a form which can be run as a program. Often this is straight machine code which is much faster than an interpreted language like Basic.

C is a small language with around 30 reserved words. You'd think this would make it easy to learn, but C isn't a language for beginners. It's harder than Basic, being a lot less forgiving of mistakes and uses concepts that imply some understanding of the fundamentals of your machine.

The standard text on the subject is *The C Programming Language* by the authors of C - Kernighan and Ritchie. When Amrod say that theirs is a full implementation they're referring to the description of the language in this book. As far as I can tell the claim is accurate with the exception of bit fields, which are a common omission and not important.

Most operations are carried out by functions - the equivalent of subroutines - many of which are supplied as standard in libraries.

Functions you would typically expect to find included are those dealing with screen output, disc filing, reading the keyboard, string manipu-

lation and mathematical operations. As you work with C you extend the range of functions with your own thus speeding up development.

Amrod supply approximately 100 functions and include the standard ones found in most C systems. Additionally they have included some useful functions of their own such as special screen handling routines which allow the use of up to eight windows and very fast printing.

The first thing noticeable about Amrod's C is that it doesn't generate a stand-alone machine code file. On the disc and central to the package is a program called *runcom*. It's a runtime system which acts as an environment for the compiler, linker, joiner and your own programs. These are all in something called *Basic Stack Code (BSC for short)* - an intermediate code designed for running C on most computers. It is interpreted by a machine code program which is part of *runcom*.

So you have written a program *fred.c*. The first step in making it something that can be run is to enter the runtime system. This is simply a matter of typing:

runcom

From either CP/M or Apeid which gives you a screen with a prompt where you can type in various instructions. If

your instruction doesn't match one of the built-in commands, the disc is searched for a file with the appropriate name. If the file is found and is BASIC with the extension .G, it will be loaded and run.

So you type:

```
compile fred
```

and the compiler (which is a .G file) is loaded and passed the name of your program. This generates a link file - fred.l - which is then passed to the linker with:

```
link fred
```

The linker resolves references to functions not defined in your program such as the ones in the libraries, in particular math.lib - the library of standard functions. If fred contained references to functions in the math library, it would be necessary to link to these as well as:

```
link fred math
```

would be required instead.

The same thing applies to libraries you may have written yourself. You compile them into a .lib file, for instance mylib.l, and use the form:

```
link fred math mylib
```

Now you have an object file fred.a which can be run from DFWD or Apud with:

```
run fred
```

For simple programs it's possible to pass the filename to run.com when you invoke it, along with instructions to link and run the resulting object code, so it's not as involved as it sounds. There's also a utility ac.com to make things even more hygienic in straightforward cases.

One thing lacking in comparison to HiSoft C is a set of functions to access GSA. Of course, not everyone wants GSA but in a GSA package it would have been nice to see it included.

Fortunately there's a function to access the CPC6128's firmware so it was an evening's work with the firmware guide to write a complete graphics library with functions like plot(x,y), draw(x,y), text(x,y,z) and so on.

All I have to do when I require graphics is to put:

```
include graph.lib
```

at the start of the source file and link the program with the compiled graphics link file.

Of course this makes programs incompatible with anything other than a CPC6128 but it gives you some idea of C's versatility.

A set of floating point mathematical functions is provided which is much more complete than Basic's. Those contemplating scientific and mathematical applications will be pleased to see both inverse and hyperbolic trigonometrical functions amongst many others.

That's the good news. The bad news is that straight floating point arithmetic is slower than Basic's which says a lot for the efficiency of Locomotive's interpreter. Even worse, the mathematical functions are written in C which in comparison to Basic's machine coded versions makes Arvor C very slow in this area.

The manual doesn't attempt to teach C and assumes familiarity with CP/M. I can appreciate the logic behind this. As mentioned earlier, C is not an easy language and if you're trying to provide anything in the way of a tutorial, to be worth doing at all it has to be very extensive and therefore time consuming and expensive to produce.

The Arvor manual only provides reference material that enables you to use their implementation and leaves you to purchase a book if you need one. Having said that, I did feel the information could have been better organised in places and with more explanation on some points. Most of what you need is there but sometimes isn't in the most obvious place.

For example, despite a range of functions to handle the screen I couldn't find one to clear it. It turned out to be a control code tucked away under the entry for getch() - the function to get a character on the screen. But the first place you would look, especially as there isn't an index.

As mentioned in the Maxam II review, the ability to link C with machine code is integral to both systems and enhances them as a serious software development tool.

The runtime system is fine for development and programs you will only use yourself, but they cannot be distributed in this form, if you want to generate stand-alone programs that don't need the runtime system there's a utility on the disc to do just that.

Table 1 lists timings for some simple benchmarks. As a comparison, timings for with Basic and HiSoft C are also shown.

I found Arvor's C easier to work with than HiSoft's but this was mainly because of my familiarity with, and preference for Apud, and the edit/compile/run/edit cycle is slower because of the intervention of the runtime system. Beyond that, the main advantages Arvor has over HiSoft are a fuller implementation, floating point arithmetic and trig functions.

Despite their slowness, they and Apud probably justify the extra cost. On the other hand, at the price of a 160 meg graphics text editor and no floating point HiSoft C offers Amibros graphics and sound, plus CP/M with GSA support for 18 pounds less. As ever, you pay your money and take your choice.

	Basic	Arvor C	HiSoft C
Add 1 to a variable 10000 times, variable and loop counter integers	16	6	2.8
As above, but all floats	30	40	N/A
Fill 80*24 screen, a character at a time	9	3	5
Work out sin(30000) times	15	40	N/A
Do 48-68 10000 times 48 is 100 characters	32	54	108

Table 1: Benchmark tests, approximate timings in seconds

They said it was quite impossible... NOW HERE IT IS!

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# The light fontastic

**P**RETEXT, Fontdes and Fontpro are a set of utilities which allow you to print in large character sets of your own design, any text files saved in Ascii format from word processors such as *Mini Office II*, *Textword* and *Protext*.

The files are printed 48-characters to the width of the page and the programs work with Epson-compatible dot matrix printers capable of eight dot graphics mode.

Best results are obtained with fully compatible printers which give 480 dots per line with the *laser-K* graphics control code. Those printers not fully compatible which give 640 dots per line in this mode should still work, but will give a printout that doesn't cover the full width of the page.

Program I - *Printext* - prints your text file and to do this it needs a font (or set of character designs) with which to display the text. So before you print a file you need to design a font with Program II - *Fontdes*.

As this can be a time-consuming task, Program III - *Fontpro* - is provided as an optional extra. It simply produces a font based on the *Arndale's* internal character set and saves it to tape or disc ready for use. The disadvantage of this method is that the font isn't as good as one you've designed yourself, but it's an easy way of getting started.

The font produced by *Fontpro* can be loaded into *Fontdes* and used as the basis for your own efforts. You'll find modifying an existing font a lot easier than designing one from scratch.

If you want to take this option, type in Program III and run it on a test

machine. After a short delay it will save the font as *rom.fun*. The programs must only be run once, and afterwards you will find that some characters such as *q, g, y* and *j* will be altered.

If you need to run it more than once, maybe because you had to correct typing mistakes, save the program, reset the computer and reload it. And when you've finished with *Fontpro*, reset the computer before doing anything else.

Designing your own font with *Fontdes* can produce very impressive results. When you run it you will see a 16 x 12 matrix in which to design characters. You can see the screen in Figure 1. Press *h* to get to the menu, where you will be presented with four options.

You can load a previously-saved font such as *rom.fun* or save the one in memory. Note that fonts are all saved with the extension *.fun*, but whenever you are asked for a filename just use the first part of the name, in this case *rom*.

The third option is to select the character you want to edit - press the appropriate key. Finally you can return to the editing screen.

Although the matrix is displayed as 16 dots high, you can only use the middle 14. This is because the distance from the top of one row to the top of the next is 16 dots (but when printing characters the *Arndale* works

best in multiples of seven. So the character on the screen is shown in the context of a full line.

The cursor is moved around the grid with the arrow keys and pixels are plotted or unplotted with *Copy*. Don't forget to save your font before leaving the program! In fact, to be on the safe side it's a good idea to save your font after editing each character.

If you have previously loaded a font, pressing *Return* when asked for the filename will save it under the previous name.

The next step is to print your text file out with *Printext* - Figure 2 gives you an idea of the sort of results you can expect.

The file you are going to print must obey certain rules:

- Lines must be a maximum of 40 characters wide, any extra characters will be lost.
- These mustn't be any control codes other than carriage return or line feed.
- The filename must have the suffix *.txt*, for example *test.txt*.

When the program is run you will be prompted for a font name and the name of your file. Remember that you don't type in the extension *.fun* and let just the filename.

If your file is long and runs over more than one page, the program will pause with an appropriate message while you insert another sheet of paper or wind the printer on to the top of the next sheet if you're using continuous stationery.

With these three routines you can now bring your dot matrix printer to life and produce your own distinctive, classy text.

Turn to Page 43 >

Current char : 60  
Current font : rom



Esc) to flip, h) for menu

Figure 1: The font editor

## COLIN JONES provides three routines to add a new dimension to your dot matrix printer

### PRINTING SAMPLE

This is a sample of text printed out using the *Printext* utility program.

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz

As you can see, the standard 12x dot matrix characters can be transformed into a big, fancy font.

Figure 2: A sample printout using *Printext*



## 4 From Page 41

### Program 1

```

10 DIM A$(100) - array 100,100
20 DIM I,J,K
30 FOR I=0 TO 99
40 FOR J=0 TO 99
50 A$(I,J)=INT(RND*100)
60 NEXT J
70 NEXT I
80 PRINT "Array 100x100"
90 FOR I=0 TO 99
100 FOR J=0 TO 99
110 PRINT A$(I,J);
120 IF J=99 THEN PRINT
130 NEXT J
140 NEXT I
150 END

```

### Program 2

```

10 DIM A$(100) - utility to design
20 DIM I,J,K
30 DIM F$(100) - array 100,100
40 FOR I=0 TO 99
50 FOR J=0 TO 99
60 F$(I,J)=INT(RND*100)
70 NEXT J
80 NEXT I
90 PRINT "Array 100x100"
100 FOR I=0 TO 99
110 FOR J=0 TO 99
120 PRINT F$(I,J);
130 IF J=99 THEN PRINT
140 NEXT J
150 NEXT I
160 END

```

This is one of hundreds of programs now available through the MicroLink on-line database.

```

100 PRINT "Array 100x100"
110 FOR I=0 TO 99
120 FOR J=0 TO 99
130 PRINT F$(I,J);
140 IF J=99 THEN PRINT
150 NEXT J
160 NEXT I
170 END

```

```

180 DIM I,J,K
190 DIM F$(100) - array 100,100
200 FOR I=0 TO 99
210 FOR J=0 TO 99
220 F$(I,J)=INT(RND*100)
230 NEXT J
240 NEXT I
250 PRINT "Array 100x100"
260 FOR I=0 TO 99
270 FOR J=0 TO 99
280 PRINT F$(I,J);
290 IF J=99 THEN PRINT
300 NEXT J
310 NEXT I
320 END

```



100x100 array 100,100

10 = 1000	100 = 1000	100 = 1000
20 = 1000	100 = 1000	100 = 1000
30 = 1000	100 = 1000	100 = 1000
40 = 1000	100 = 1000	100 = 1000
50 = 1000	100 = 1000	100 = 1000
60 = 1000	100 = 1000	100 = 1000
70 = 1000	100 = 1000	100 = 1000
80 = 1000	100 = 1000	100 = 1000
90 = 1000	100 = 1000	100 = 1000
100 = 1000	100 = 1000	100 = 1000

100x100 array 100,100

10 = 1000	100 = 1000	100 = 1000
20 = 1000	100 = 1000	100 = 1000
30 = 1000	100 = 1000	100 = 1000
40 = 1000	100 = 1000	100 = 1000
50 = 1000	100 = 1000	100 = 1000
60 = 1000	100 = 1000	100 = 1000
70 = 1000	100 = 1000	100 = 1000
80 = 1000	100 = 1000	100 = 1000
90 = 1000	100 = 1000	100 = 1000
100 = 1000	100 = 1000	100 = 1000



# DIAMOND TRAP

By JOHNATHON PUGH

**D**EEP beneath the surface of the planet Shoggor is a complex system of caves and tunnels. These are all that's left of a once thriving diamond industry.

The planet's inhabitants are long gone, but it's a well known fact that a fortune still exists down in the caves: Diamonds as yet unprocessed and locked chests of beautiful gems hidden away from prying eyes.

The mines were left open, so access is no problem. But the Shoggorians were a crafty bunch. They've cleverly trapped the place by making the floor - a series of panels - collapse as you move through. So to return the way you came will be fatal.

They've also released a rather ferocious green monster to ward off trespassers. As this moves through the caves, forming in on your scent, the floors are replaced to allow it access.

Your job is to enter the mine and recover as many diamonds as possible. At your disposal you have the Centope, a fast moving droid that can move north, south, east and west on the grid.

It has only three power packs and any action that would prove fatal, such as being caught by the monster or moving into a vein, will result in the loss of one of these.

There are five levels to the mine and in the deeper recesses are power packs left behind in earlier attempts. These look like hearts and collecting them increases the droid's lifespan.

You'll also find the treasure chests which can only be unlocked if you've collected up to three keys on the lower levels. Look out for the red bullion blocks which earn extra points if you manage to cross them.

Once you've completed level five your droid is automatically returned to level one - where the task continues. Good luck!

Turn to Page 46 >



SCORE 0 HIGH 100  
LIVES 3 LEVEL 1

## 4 From Page 48

```

10 REM ***** Standard Title *****
20 REM -- By J.Pope
30 REM (If debugging with the keyboard
40 REM ***** ON *****
50 REM 1,2,3,4,5,6,7,8,9,0,*,^,_,/,<,>,=,~
60 REM 1,2,3,4,5,6,7,8,9,0,*,^,_,/,<,>,=,~
70 REM 1,2,3,4,5,6,7,8,9,0,*,^,_,/,<,>,=,~
80 REM 1,2,3,4,5,6,7,8,9,0,*,^,_,/,<,>,=,~
90 REM 1,2,3,4,5,6,7,8,9,0,*,^,_,/,<,>,=,~
100 REM ***** Key Board *****
110 REM ***** ON *****
120 REM ***** ON *****
130 REM ***** ON *****
140 REM ***** ON *****
150 REM ***** ON *****
160 REM ***** ON *****
170 REM ***** ON *****
180 REM ***** ON *****
190 REM ***** ON *****
200 REM ***** ON *****
210 REM ***** ON *****
220 REM ***** ON *****
230 REM ***** ON *****
240 REM ***** ON *****
250 REM ***** ON *****
260 REM ***** ON *****
270 REM ***** ON *****
280 REM ***** ON *****
290 REM ***** ON *****
300 REM ***** ON *****
310 REM ***** ON *****
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330 REM ***** ON *****
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370 REM ***** ON *****
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470 REM ***** ON *****
480 REM ***** ON *****
490 REM ***** ON *****
500 REM ***** ON *****
510 REM ***** ON *****
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690 REM ***** ON *****
700 REM ***** ON *****
710 REM ***** ON *****
720 REM ***** ON *****
730 REM ***** ON *****
740 REM ***** ON *****
750 REM ***** ON *****
760 REM ***** ON *****
770 REM ***** ON *****
780 REM ***** ON *****
790 REM ***** ON *****
800 REM ***** ON *****
810 REM ***** ON *****
820 REM ***** ON *****
830 REM ***** ON *****
840 REM ***** ON *****
850 REM ***** ON *****
860 REM ***** ON *****
870 REM ***** ON *****
880 REM ***** ON *****
890 REM ***** ON *****
900 REM ***** ON *****
910 REM ***** ON *****
920 REM ***** ON *****
930 REM ***** ON *****
940 REM ***** ON *****
950 REM ***** ON *****
960 REM ***** ON *****
970 REM ***** ON *****
980 REM ***** ON *****
990 REM ***** ON *****

```



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

```

670 REM ***** ON *****
680 REM ***** ON *****
690 REM ***** ON *****
700 REM ***** ON *****
710 REM ***** ON *****
720 REM ***** ON *****
730 REM ***** ON *****
740 REM ***** ON *****
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760 REM ***** ON *****
770 REM ***** ON *****
780 REM ***** ON *****
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990 REM ***** ON *****

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1000 REM ***** ON *****
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1090 REM ***** ON *****
1100 REM ***** ON *****
1110 REM ***** ON *****
1120 REM ***** ON *****
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1150 REM ***** ON *****
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1600 REM ***** ON *****
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1880 REM ***** ON *****
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1910 REM ***** ON *****
1920 REM ***** ON *****
1930 REM ***** ON *****
1940 REM ***** ON *****
1950 REM ***** ON *****
1960 REM ***** ON *****
1970 REM ***** ON *****
1980 REM ***** ON *****
1990 REM ***** ON *****

```







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Address: \_\_\_\_\_



## Ballcrazy

(Mastertronic)

Roll up, roll up! Infinite balls 'n' bullets for Mastertronic's bawdy block buster, courtesy of CUP.

10 000 Ballcrazy (10ep)  
 20 000 C.U. (10ep)  
 30 000 C.U. (201100)  
 40 000 C.U. (20000 10ep)  
 50 000 C.U. (20000 10 0000)  
 60 000 C.U. (20000 10 0000)  
 70 000 C.U. (20000 10 0000)  
 80 000 C.U. (20000 10 0000)  
 90 000 C.U. (20000 10 0000)  
 100 000 C.U. (20000 10 0000)

100 000 C.U. (20000 10 0000)  
 100 000 C.U. (20000 10 0000)

100 000 C.U. (20000 10 0000)  
 100 000 C.U. (20000 10 0000)

100 000 C.U. (20000 10 0000)

## Ghost Hunters

(Mastertronic)

Fer all those not yet man enough to complete the game, Christian lays an infinite macho energy.

10 000 Ghost Hunter (10ep)  
 20 000 C.U. (10ep)  
 30 000 C.U. (201100)  
 40 000 C.U. (20000 10 10)  
 50 000 C.U. (20000 10 10)  
 60 000 C.U. (20000 10 10)  
 70 000 C.U. (20000 10 10)  
 80 000 C.U. (20000 10 10)  
 90 000 C.U. (20000 10 10)  
 100 000 C.U. (20000 10 10)  
 110 000 C.U. (20000 10 10)  
 120 000 C.U. (20000 10 10)  
 130 000 C.U. (20000 10 10)  
 140 000 C.U. (20000 10 10)  
 150 000 C.U. (20000 10 10)  
 160 000 C.U. (20000 10 10)  
 170 000 C.U. (20000 10 10)  
 180 000 C.U. (20000 10 10)  
 190 000 C.U. (20000 10 10)  
 200 000 C.U. (20000 10 10)



## Wizball

(Imagine)

This uses Christian's Locksmith. Just add or substitute the lines shown, run it as a normal poke and you'll find your ball is totally immune.

100 000 C.U. (20000 10 0000)  
 100 000 C.U. (20000 10 0000)  
 100 000 C.U. (20000 10 0000)  
 100 000 C.U. (20000 10 0000)  
 100 000 C.U. (20000 10 0000)

## Game Over

(Imagine)

These pokes give infinite lives, power and grenades on level one, and unlimited lives, power, laser shots and immunity from mines on part two.

Use them with Locksmith - load it in, type in the new lines (some are extra, some replace old ones) and run it like a normal poke. The access code for part two is 10010.

Game 1

100 000 C.U. (20000 10 0000)  
 100 000 C.U. (20000 10 0000)  
 100 000 C.U. (20000 10 0000)  
 100 000 C.U. (20000 10 0000)  
 100 000 C.U. (20000 10 0000)

Game 2

100 000 C.U. (20000 10 0000)  
 100 000 C.U. (20000 10 0000)  
 100 000 C.U. (20000 10 0000)  
 100 000 C.U. (20000 10 0000)  
 100 000 C.U. (20000 10 0000)



## Amaurote

(Mastertronic)

David White of Mastertronic provides infinite lives and bombs. Stops you from being damaged, allows you to specify the number of enemies to be cleaned and gives you rapid fire bombs. What more could you want?

10 000 Amurote (Tape)  
 20 000 By David White  
 30 000 CD C054700  
 40 000 Tru-8/MSX  
 50 0000 Master of Cities  
 60 river 11/0001 Jose  
 70 11 0001 00 0001 00 00  
 80 100 000000 10 0000  
 90 0000 000000000000  
 100 0000 000000000000  
 110 0000 000000000000  
 120 0000 000000000000  
 130 0000 000000000000  
 140 0000 000000000000  
 150 0000 000000000000  
 160 0000 000000000000  
 170 0000 000000000000  
 180 0000 000000000000  
 190 0000 000000000000  
 200 0000 000000000000



## Trailblazer

(Gremlin)

Here's the tape version coded by John Taylor of Bash. You get infinite jumps and can carry on playing when you've run out of time.

10 000 Trailblazer (Tape)  
 20 000 By John Taylor  
 30 000 CD C054700  
 40 000000 000000000000  
 50 0000 000000 1000  
 60 0000 000000 1000  
 70 0000 000000 1000  
 80 0000 000000 1000  
 90 0000 000000 1000  
 100 0000 000000 1000  
 110 0000 000000 1000  
 120 0000 000000 1000  
 130 0000 000000 1000  
 140 0000 000000 1000  
 150 0000 000000 1000  
 160 0000 000000 1000  
 170 0000 000000 1000  
 180 0000 000000 1000  
 190 0000 000000 1000  
 200 0000 000000 1000

## Dragon's Lair

(Software Projects)

Unlimited energy for Disk the darning should help you sort this one out.

10 000 Dragon's Lair  
 20 000 By T.L. Foster  
 30 000 111 000000  
 40 0000 1000000000  
 50 00000000 1000 1000  
 60 10000 10000000000000  
 70 10000 10000000000000  
 80 10000 10000000000000  
 90 10000 10000000000000  
 100 10000 10000000000000  
 110 10000 10000000000000  
 120 10000 10000000000000  
 130 10000 10000000000000  
 140 10000 10000000000000  
 150 10000 10000000000000  
 160 10000 10000000000000  
 170 10000 10000000000000  
 180 10000 10000000000000  
 190 10000 10000000000000  
 200 10000 10000000000000



## Dr. Destructo

(Buildlog)

Steve Webb from London tells me that if you pause the game and type in CODE CAREN in upper case you can then press Z to move to the next level.

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.

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, Amstips, Computing with the Amstrad CPC,  
 68 Chester Road, Hazel Grove, Stockport SK7 5NY.

# Auf Wiedersehen Monty

(Greenie)

Cool Ric (alias Ric Lumb from York) has come up with a solution and map for Monty Mont's latest - and last - adventure. The illustrations shown here are all based on the superbly drawn material he sent in.

To complete the game collect everything then use the special objects:

**Football:** Take to Juventus.  
**Plant:** Take to Amsterdam, give to the little man at the bottom of the screen who will then give you a key.  
**Take the trip to Juliet at the leaning tower of Pisa.**

**Monty Lisa:** Take to his Deboss and touch the yellow fence.

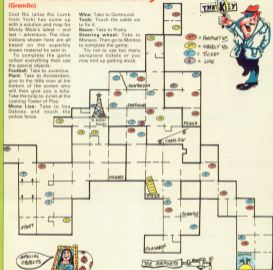
**Wine:** Take to Dortmund.

**Tools:** Touch the cable car to fix it.

**Basin:** Take to Praha.  
**Steering wheel:** Take to Monaco. Then go to Monty to complete the game.


Try not to use too many aeroplane tickets or you may end up getting stuck.

-  = Football
-  = Plant
-  = Tools
-  = Wine



-  = FOOTBALL
-  = PLANT
-  = MONTY LISA
-  = WINE
-  = TOOLS
-  = BASIN
-  = STEERING WHEEL



 = DON'T GO AROUND BY THIS TOC POINT

# Plan It

## ... the COMPLETE personal organiser

Now there's a simple way to keep track of your money, plan your budgets, sort out your files and manage your time far more effectively.

PlanIt's three main modules - Personal Accounts, Financial Diary and Card Index - take care of all your day-to-day activities and help you rationalise your future financial position.

And there are two extra utilities - a Loan Calculator and a Calendar - to complete this remarkable package.

**Personal Accounts** Gives you up-to-the minute facts about your financial position at any time. Keeps separate accounts of your banking, cash transactions, credit card payments. Allows 24 individual accounts, up to nine different credit cards (and warns you when you reach your cash limit) and as many as 400 different transactions a month. Sets up your standing orders. Automatically updates relevant accounts with each transaction.

**Card Index** Create your own address book, phone directory, tape library title list. Use the flexible editor to enter or amend data. Sort and search. Call up detailed reports on contents in any form. Produce mailing labels on your printer.

**Financial Diary** All the features of the best desktop diary - plus much more. Enter up to 10 items per day and have them automatically sorted in time order. Add your expenses and have them totalled in separate categories. Spend search for entries, then mark them for future manipulation or replication.

**DATABASE SOFTWARE**

**TO ORDER, PLEASE USE THE FORM ON PAGE 61**

**END Prize letter****Quickshot in the arm**

HAS anybody else had trouble with the Quickshot joystick? We bought one last Christmas because it looked and felt much better than the Amstrad one but unfortunately the Fire Action died once an switch-on and then no more.

The man at Spacemovies was as surprised as we and could offer no advice, so out came the soldering iron and meter. Well, a Christmas holiday was no joyride!

After probing around I found a couple of nasty capacitors labelled C1 and C2 which appeared to hold the Fire output on. I removed these together with the auto-manual switch (rendering a link into the manual position to prevent accidental switching to auto. Hey presto, it worked!

Eight months later the dog spent a happy hour manipulating the joystick with her teeth. The joystick did not survive, so it was off to the shop again.

This time the only unit available was the Quicksator II which still had the standard problems. Same solution: Wipe out the screws, find C1 and C2, wiggle violently until they come off. Ah. Tack on the auto-fire key and you're doing battles with the aliens again.

I hope this fix helps any frustrated CPC keyboard batters, but remember it will invalidate any warranty. — J.P. Howard, Bletley.

● Entirely at your own risk folks!

**A CPC speaks**

A few months ago I purchased a CPC6128 and have now got the communications bog. Being close to computers I would like clarification on a couple of points.

Firstly, if I buy the

**Win a tenner**

Each month we award £10 prizes for the most interesting letters sent to us.

So now there's room to 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: Postbox, Computing with the Amstrad, Europa House, Chester Road, Hazel Grove, Stockport SK7 5RY.

Amstrad RS232C interface which incorporates Comstar software can I still use the Mini Office II Communications module?

Secondly, with Comstar, can I use letters created with the Mini Office II Word Processor? — A. Hunter, Cambridge.

● Mini Office II was designed to work with the original Amstrad interface and regrettably will not work with the latest version redesigned by the new supplier, Pace.

Any text file created with Mini Office II can be sent with Comstar provided it is saved in Ascii format.

**Losing money**

HELP! I'm writing a program which reads text from data statements and every time I use a £ sign it disappears. I enter a line such as:

```
100 1000 100 1100
```

and when I list the line, the £ vanishes. Where's it gone? My computer is a CPC6128. — Sid Harvey, Luton.

● This is an undocumented

"feature" of Locomotive Basic: it doesn't like Ascii characters above 127 in data statements because they look like Basic tokens.

The solution is to get quotes round your data and the £ will stay put. Actually, you can get away with a single quote at the start of the line.

Try this: Reset your machine and enter a line of data containing 10 spaces as follows:

```
10 1000 1000 1000 1000
```

Now force a £ sign into the statement by poking it there using:

```
POKE 417,1000000
```

List the line and you'll see Basic has taken the Ascii value of £ as the token for INPUT.

When you enter a line of data, it it doesn't have quotes the Amstrad filters out the £ character. As far as we can see, it's the only one above 127 on the default keyboard and so it's the only one checked for.

If you put any other character above 127 on the keyboard such as in KEY (CHARB264) and put that in an unquoted data line, it isn't checked for and comes out as another Basic keyword, in this case NOT.

**Wrong format?**

AT the risk of appearing stupid I simply must ask you about David Patten's utility in the September issue in format above in 2096.

Can you clear up the confusion which exists in my mind about the part of the article stating that when the machine code has been poked into memory, it will be saved as a binary file, intrinsic?

I cannot see any reference in the program to saving itself as a binary file. The utility is made even worse by the fact that after you have formatted a disc to

2096 you are told to run the initial program from a normal disc.

One other thing. Having entered Program 1 correctly I am told data is exhausted in line 70. I cured this by adding an extra line 200 consisting of zeros. You haven't closed a line in the listing have you? — A. Entwistle, Llandaff.

● No, you're not stupid. The original listings were correct but were in Data24 format for unsuccessful experiment to make listings easier to enter, originating in the May issue.

When the proof came through, with your interests at heart we did a quick conversion to the more popular hex loader and missed the bit about saving the binary file.

Also, seeing that the last line of the first program was all zeros somebody decided to save you some typing and removed it. For a change, it wasn't the feature editor but somebody who should have known better and shall remain nameless. Oh go on then — it was Sharp's Desk.

For the record, put a line 600 DATA followed by 26 zeros in the format program and in the initialisation program add a line:

```
10 INPUT A$,BY,2,2000,00
```

While you're at it, the on-line program, list.bas, that loads the initialisation file, ought have MEMORY BEEP as its first statement.

Thanks for bringing it to our attention. We aren't infallible and the sooner somebody lets us know there's a problem the sooner we can do something about it.

Another thing has come to light which may be giving a few people problems. There are differences between disc drive mechanisms which means that some do not format reliably when pushed for extra performance, causing trouble.

Turn to Page 58

## 4 From Page 55

when saving and loading files.

To check you have a healthy disc, use the following program which verifies those formatted to 200K. You don't need 200K format initialised to use it, just run it, put a 200K format disc in drive A, and CALL @200K. Bad sectors will show as bad faces.

If you want to avoid, keep the Escape key depressed for a few seconds. If the disc is faulty, it'll reformatting it as this often affects a copy.

```

10  VERIFY DISKETTE
20  RUN GET DISK IN DRIVE
30  @ and CALL @200K
40  RETURN
50  FOR I=0 TO 255: IF I=I: GOTO 10
60  FOR I=0 TO 255: IF I=I: GOTO 10
70  FOR I=0 TO 255: IF I=I: GOTO 10
80  FOR I=0 TO 255: IF I=I: GOTO 10
90  FOR I=0 TO 255: IF I=I: GOTO 10
100 IF I=I: THEN PRINT
110 IF I=I: THEN PRINT
120 IF I=I: THEN PRINT
130 IF I=I: THEN PRINT
140 IF I=I: THEN PRINT
150 IF I=I: THEN PRINT
160 IF I=I: THEN PRINT
170 IF I=I: THEN PRINT
180 IF I=I: THEN PRINT
190 IF I=I: THEN PRINT
200 IF I=I: THEN PRINT
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950 IF I=I: THEN PRINT
960 IF I=I: THEN PRINT
970 IF I=I: THEN PRINT
980 IF I=I: THEN PRINT
990 IF I=I: THEN PRINT
1000 IF I=I: THEN PRINT

```

## 8-bit port

In the Point to Style article in the August issue, Sir George mentions there is still one flaw which only an 8-bit printer port for the CPCs, but he didn't say who the flaw is. Please could you let me know their name and address? — Tom Bradley, Trillick.

■ The KDS Electronics, 15 Hill Street, Harewood, North York YO26 5BS.

## COMPUTING WITH AMSTRAD GROUP 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  
Europe House  
65 Chester Road  
Hazel Grove  
Stockport SK7 5WY

## Advertising boob

I FEEL that I must comment about the advertisements for Barbarian that have appeared in your magazine and others. It's not the game I'm objecting to, it's a good hack-'em-up as much as the next man. No, it's the use of tactics to sell it that gets me.

Most purchasers of video games, including myself, are under 26. The advertisement does not try to sell the software on its merits but uses something only a small step away from soft porn as an incentive.

Palace's advertisement says a lot about them. They treat *their* customers as adolescent youths with no little discretion or intelligence that they will buy software not on the strength of its quality, but because there are photographs of boobs stuck to it. Therefore they do not request us, but see us as cheap men's only function is to be to make them money, no matter if their methods give offence to some people.

As a parent I object to my young son who is ten years old and at an impressionable age being presented with such material in what might be considered family reading. I don't think applying letters is having an adverse effect on him but the sort of advert could. Did Palace stop to consider this before greed got the better

of them?

I've bought Palace games before and have been very pleased with them. I am understanding a company producing poor software having to resort to these methods but it is not something that Palace needs to do.

Reading your review of Barbarian I have no doubt that it is up to their usual standards but I will not be buying it, thinking of the software that I despair at the number of people who are allowing Palace to get away with this attitude. Perhaps they're right after all. — James Langley, Sheffield.

## Seeking the arrow

PLEASE could you tell me how to get the I sign in Centipede? It occurs in lines 2250, 2255, 2270 and 2280.

It is worth having a light pen when I haven't got a printer? — Keith Cooping, Walsley.

■ The symbol is the up arrow on the same key as E. To answer your second question, we find light pens lead to a sore wrist and smudged screens. If you really want one but have no printer, the only drawback is that you will only be able to view your masterpieces on-screen.

As a dot matrix printer only gives a crude representation of the original, this may not be much of a disadvantage.

## Catalogue modifications

I WAS delighted with Robin Nixon's disc catalogue utility in the July issue and after running it through the checksum program all was well.

Well, that is until using it to load *Blade* from the February issue when I got "Program segment in line 2680". I have found similar a problem with *Moviet* which runs OK if not loaded from the catalogue program.

The common factor seems to be the SYMMOC command. Not having had the CPC8208 for that long or enough experience of Amstrad Basic I'm hoping you can help.

My second query is about the checksum utility. The original instructions were to only load a program to be checked and not run it before generating the checksums.

With Disc Catalogue the only way to get the sums to match is to run it first. — Roy Welling, Wolverhampton.

■ When we tested disc catalogue we ran many programs from it without any problems.

It seems that none of them tried to redefine characters which can cause the symptoms you describe.

Two simple modifications to catalogue will put matters right. Add a new line:

```
41 LOAD:PRINT:GOTO 41
```

and modify line 706 to:

```
500 GOTO 10:GOTO 10:GOTO 10:GOTO 10:GOTO 10
```

As you may remember, we only discovered that you mustn't run a program before checksumming it after the checksum utility was published. Disc Catalogue was introduced before the problem came to light and we must have run it beforehand. As far as we know, this is the only program to slip through the net.



## Circles solved

I REPLY to your reply to Barry Poxon's letter in the June Postbag concerning problems with printing round circles on dot matrix printers, particularly Mini Office II pic charts.

Even an Epson LX80 (now available in an updated form as the LX85) which has a one-to-one plotter mode. This produces true, circular circles. The code is:

HEX:10421190 (1090)

where K is the existing circle letter and R is the plotter code which replaces it.

K is the most common code used in commercial

## Prize letter

clubs programs, including Mini Office II, but it may be necessary to experiment with other Epson code letters before finding the correct one.

To override the Mini Office II dump, place the printer on line, send the code exactly as given above in direct mode. Now run Mini Office II.

I have owned my printer for 18 months and it has had fairly heavy use. I find it to be one of the most versatile and reliable printers available at the price. — J.B. Crabtree, Darrington, Co. Durham.

## Printer dump

I HAVE recently purchased a Commodore MPS 1000 printer which is the same as the Epson L385 (used to do lot screen dumps to the printer on a listing in Amstrad Basic) would be much appreciated.

— Nicholas Golin, Wincles. ■ We published one in August 1985. You can obtain the back issue using the mail order form on Page 61.

## Which assembler?

I HAVE been programming in Basic for quite some time and recently I decided to learn assembly language. I am at a loss as to what assembler I should buy and which book would be suitable for me.

I would like an easy-to-use assembler which would allow me to enter your machine code programs without too much trouble. — Nicolas McMillan, Banville, France.

■ There are several good assemblers on the market. We use Amos's Macro which is particularly easy to use, especially in the rom version. If you're looking for

a cassette-based product Picturepak's Code Machine is also excellent.

As for books, one man's meat is very often another's poison but Amstrad Machine Language for the Absolute Beginner by Joe Pritchard is quite reasonable. It's published by Melbourne House, ISBN 0 8811 1034.

We're often asked for the titles of good books on both machine code and Basic. An experienced programmer it's difficult for us to judge how successful a particular volume is for a beginner. Can anybody recommend books which they've found to be useful?

## Contact corner

I AM a CPC601 owner and I would like to correspond with anybody with the same machine to exchange thoughts and talk about programming. — Adnan Abdallah, 44, PO Box 1248, PC 22938, Salmiya, Kuwait.

PLEASE can you let me up with a pen pal? — Tim Oliver, 7 Wester Field Way, Wyford, Nottingham NG21 3ET.

# SLOBB

Corner

The South Lancashire and Cheshire Bulletin Board

## Talking turkey

Dear Fans,

Thanks for the many letters which have flooded in to Slobb Corner. The most popular question seems to be about how I got started in the computer industry. The answer to that question is that when I left school, all I had was O'levels in maths and art — so I got a job painting computers.

The other letters were mainly complimentary — but in reply to Mr A. S. H. of Bristol: your writing was a little prozac. Did you see if I was a mason or a stonemason?

Now to the technical queries. It would seem from your letters that the majority of you are interested in getting your CPC to talk to another computer. The easiest way round that is to use the Amstrad speech synthesiser. The CPC will then happily talk to any other computer and also to your fridge, microwave oven, television set or any other domestic appliance.

Of course you'll also need some device to allow them to hear what's being said — but we can't have everything can we?

There's been quite a lot of excitement in the office this month as the software side. We've finished the complete works of Shakespeare and the most remarkable part was when we reshaped a local model to help us with Romeo and Juliet. She was a terrible actress, but she certainly knew how to hang over a balcony!

The production program I was writing has been wrapped. The gossip feature letter I'd been working with walked out after I hit him while he was laughing. It was the boss's fault though — he's always telling me to strike a happy medium. I'm glad it's over really, at my age writing software is as much fun as watching the Kinn & Ted Show on a Saturday night.

The Amstrad Show at Ally Pally was quite a success. I went down on the Friday with the rest of the regulars from the Keyboard and Mouse. Having arrived at the Dobbyline Publications stand, we immediately tried to persuade the features editor of this illustrious magazine to buy us a drink.

It would have been easier to milk a goat. The range of excesses ran from "No speaking in English" to "I seem to have lost the key to my wallet".

See ya.

Arthur Brain

Arthur Brain  
Technical Help,  
SLOBB

## TWO Accolade winners at a very special price!

In the role of Vitore, a heavily-armed humanoid, you blast, battle, bound and blunder your way over more than 100 screens in this spectacular space epic. The graphics, sound and playability combine to make it a knockout game which would be a blockbuster in the arcades – but you can play it on your CPC for as little as £4.95!

*'Graphically Exolon is a masterpiece...[the] graphics surpass all that has gone before, yet somehow combine them with faultless animation. Having played Exolon for the past few weeks I hereby vote it my favourite game of 1987 – nothing comes close!'*

– Jan Revis, Computing with the Amstrad CPC, September 1987



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UP TO  
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Zynaps is one of the most exciting shoot-'em-ups to appear on the Amstrad CPC. It features slick movement and smooth right-to-left scrolling. With 16 levels, nearly 450 screens and a two-player option, there's enough here to keep you busy for many months!

*'Zynaps is certainly a superior shoot-'em-up and one that will provide hours of fun and frustration in equal quantities. If this*

*is the kind of game you like, Zynaps is a must! (Addictive qualities 93%)'*

– Tony Flanagan, Computing with the Amstrad CPC, September 1987



Available for	Product	Format	RRP	Special reader offer	YOU SAVE	Offer including subscription	YOU SAVE
CPC range	Exolon	Tape	£8.95	£8.95	£2	£16.95	£4
CPC range	Exolon	Disc	£14.95	£11.95	£3	£20.95	£8
CPC range	Zynaps	Tape	£8.95	£8.95	£2	£16.95	£4
CPC range	Zynaps	Disc	£14.95	£11.95	£3	£20.95	£8

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## 2 CLASSIC COMPILATIONS

Now you can obtain some of the all-time classics on the CPC for as little as £1.20 each!

Beas Jolly have brought together 10 top-quality games in two value-for-money packs.

### What you get in Five Star Games

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### What you get in Five Star Games II

- Dandy
- Frostbyte
- Cackkron II
- Alien Highway
- Doomsday Blues



There are no 'stocking fillers' here - every game has been highly commended, and many have been awarded coveted Amiga Accolades.

4-Pak Volume 2 contains some of the very best games of the last 12 months.

There's non-time action with *Into the Eagle's Nest*, the fantastic tactical game *Battis*, the realistic flight simulator *Ace* and the superior shoot-'em-up *Lightforce*.

In *Shockwave Rider* you fight alien gangs on the moving walkways, and in *International Karate* you compete against another player or the computer in this top-notch oriental combat game.

This magnificent compilation is only available with a new subscription or a subscription renewal.



Available for	Product	Format	RRP	Special reader offer	YOUR SAVE	Offer including subscription	YOUR SAVE
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CPC range	Five Star Games II	Disk	£14.95	£11.95	£3	£29.95	£8
CPC range	Five Star Games II	Tape	£3.95	£1.95	£2	£29.95	£8
CPC range	Five Star Games II	Disk	£14.95	£11.95	£3	£29.95	£8
CPC range	4-Pak Volume 2	Tape	£3.95	-	-	£29.95	£4
CPC range	4-Pak Volume 2	Disk	£14.95	-	-	£29.95	£8

**TO ORDER, PLEASE USE THE FORM ON PAGE 61**

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

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



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