

October 1987

£1.00

AMSTRAD

COMPUTER USER



Full review
**SOLOMON'S
KEY**

Arnor C reviewed

**Hands-on guide to MAX,
the digital desktop**

Win: A US Golden Sovereign

Firebird's fortunes

**Help with Protext
+ other useful tips**

Official Amstrad Home Computing Magazine

Norway NOK 20.00
Spain 300 Ptas
Turkey 1650 TL
Denmark Kr. 31.00
New Zealand NZ\$4.95 Rec.

REBEL WITHOUT A CAUSE?

RENEGADE



SPECTRUM
7.95

COMMODORE
8.95

AMSTRAD

COMMODORE
12.95

DISK

AMSTRAD
14.95

ATARI ST
19.95

Licensed from © Taito Corp., 1986
Programmed for Amstrad, Spectrum,
Commodore by Imagine Software.



TAITO
COIN-OP

In the knife-edge world of the vigilante there is no place to rest, no time to think – but look sharp – there is always time to die! From the city subways to the gangland ghettos you will always encounter the disciples of evil who's mission it is to exterminate the only man on earth who dares to throw down the gauntlet in their path – the Renegade.

A breathtaking conversion of the arcade hit by Taito now for your home computer. With all the original play features – when you play Renegade you would not have believed you could play so mean!

IMAGINE SOFTWARE · 6 CENTRAL STREET ·
MANCHESTER · M2 5NS · TELEPHONE 061 834 3939 · TELEX 66997

...the name
of the game

REGULARS

- 5 News
- 10 Gallup chart
- 11 Letters
- 23 The Hairy Hackers Haunt
- 36 Adventures
- 74 LSB

PROGRAMMING

53 Killabells

Can you control the mad ball? You'll need to, there are dots to eat.

FEATURES

25 Cage Page

A dip into the letters which appear daily on Micronet's 'Amster's Cage.

28 Solomon's Key

US Gold's coin-op conversion with panache, the best game we've played for a long while.

31 Applications Advice

Help with Protext and a look at Tassign in David Foster's serious column.

40 Firebird interview

Jerry Muir takes to the streets, in this case New Oxford Street.

REVIEWS

15 MAX factor

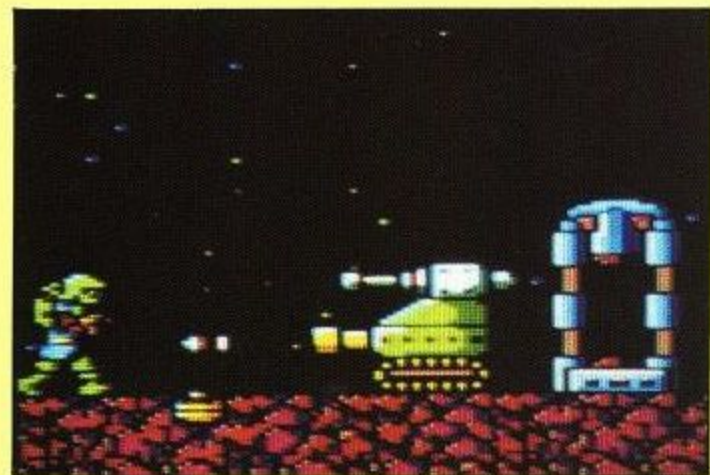
Can your micro handle WIMPs? Rupert Goodwins looks at MAX from AMX, the system which provides a graphic interface, and a good deal of jargon.

19 Precision printing

Speedy printing at a lower cost than ever before. But how good and how fast?

44 Arnor C

Oh I do like to be beside the C. The trendy programming language for CP/M Plus is the latest offering from Arnor.



57 Software reviews

Sunstar, Wonderboy, Quartet, Game Over, Convoy Raider, Exolon and Basketball all pass through the reviewers hands.

OFFERS

- 68 Goodies, and no baddies, to make your Arnold feel better.

COMPETITION

- 47 Win a golden sovereign in a competition from US Gold.

AMSTRAD

COMPUTER USER

The official magazine for all users of Amstrad computers

Editorial and Advertising offices:
169 King's Road, Brentwood, Essex CM14 4EF.
Tel: 0277-234459 (Editorial); 0277 234434 (Advertising)
Telecom Gold: 72:MAG021

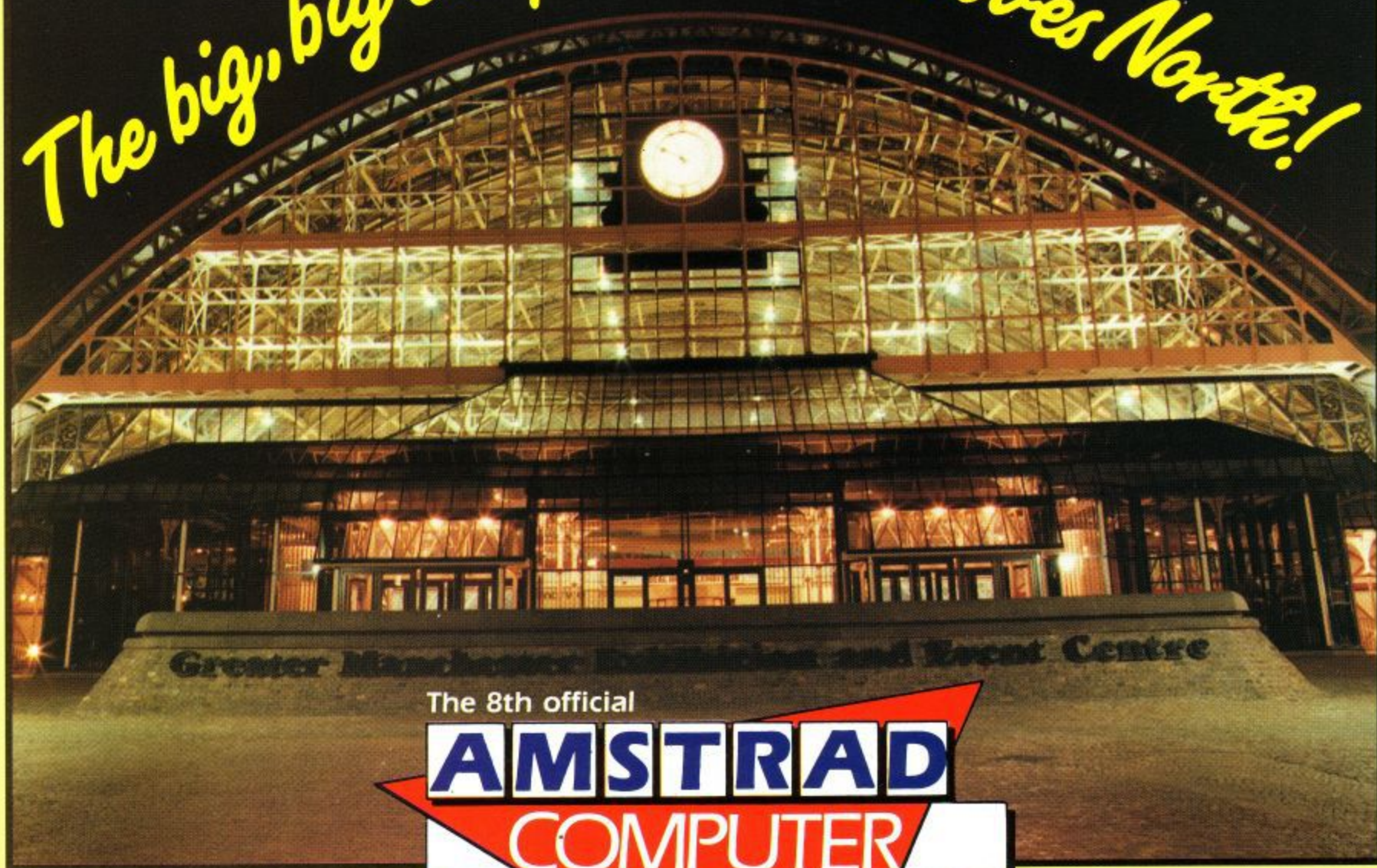
Published by Avralite Ltd, 36/38 St. Petersgate, Stockport SK1 1HL.

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

Editor: Simon Rockman
Advertisement Manager: Jane Nolan
Advertisement Assistant: Lorraine Day

Amstrad is a registered trade mark, and with the title Amstrad Computer User, is used with the permission of Amstrad Consumer Electronics plc. No part of this publication may be reproduced without permission. While every effort is made to ensure the accuracy of all features and listings we cannot accept any liability for any mistakes or misprints. The views and opinions expressed are not necessarily those of Amstrad or Amsoft but represent the views of our many readers, users, and contributors. Material for publication is only accepted on an all-rights basis. We regret that Amstrad Computer User cannot enter into personal correspondence. © Avralite Ltd 1987.

The big, big computer show moves North!



The 8th official

AMSTRAD COMPUTER SHOW

Organised by
Database Exhibitions

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

G-Mex Centre, Manchester

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

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

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

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

How to get there

Situated in the heart of the city centre, G-MEX is only one mile from the M602, and there's ample parking space beneath the hall.

Within easy reach of Victoria and Piccadilly railway stations.

Advance ticket order

Please supply:

- ☐ Adult tickets at £2 (save £1) £.....
☐ Under-16s tickets at £1 (save £1) £.....
Total £.....

☐ Cheque enclosed made payable to
Database Publications Ltd.

☐ Please debit my credit card account

☐ Access ☐ Visa

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

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

**AMSTRAD
COMPUTER
SHOW**

**THE G-MEX CENTRE
MANCHESTER**

October 23-25

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

Name
Address
.....
Signed

PHONE ORDERS: Ring Show Hotline: 061-480 0171
PRESTEL ORDERS: KEY *89, THEN 614568383
MICROLINK ORDERS: MAILBOX 72:MAG001
Please quote credit card number and full address + A104

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

Freescape: A new technique unveiled

IT is not every day that a software house claims a major breakthrough in programming techniques, it's actually about once a month. And about once a year the software house is actually talking sense and has done something clever. This year it seems to be Incentive. The firm has actually been honest when claiming all the guff that software houses usually claim.

Freescape is a programming technique which centers around space and shapes. A model universe is built inside the computer and you are free to wander around buildings and explore.

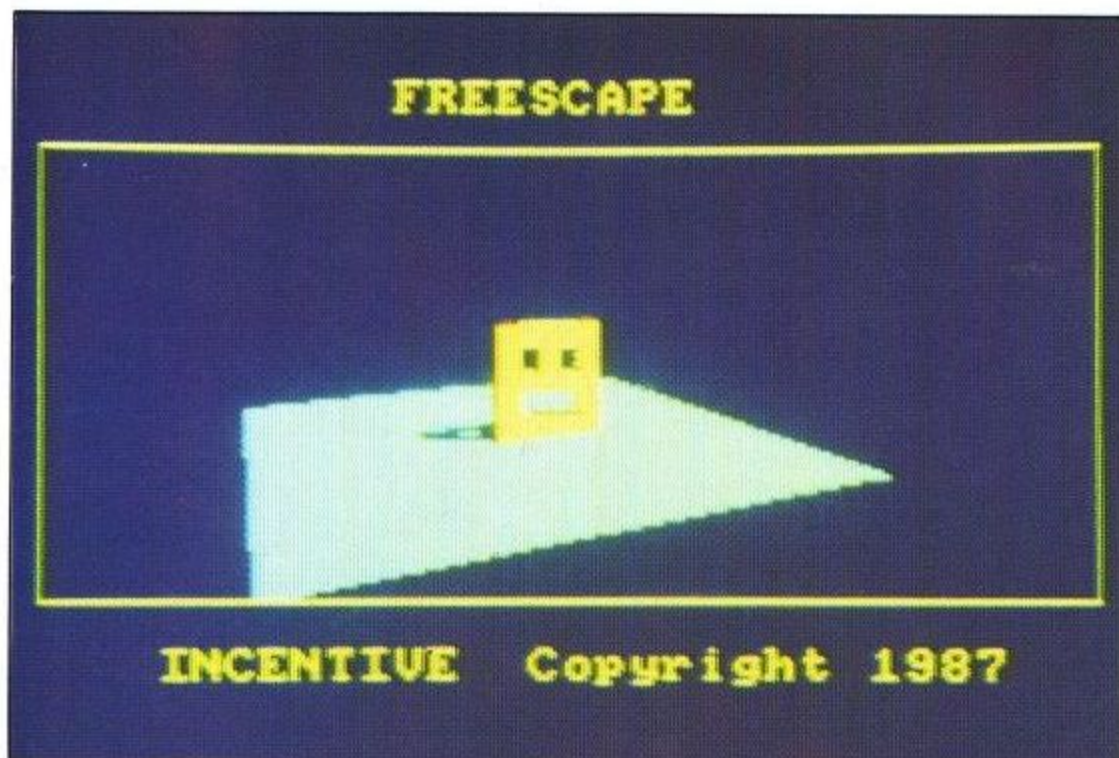
You can have one of two views, either from a tank or a plane. Because the views are calculated, not stored, it is possible to have thousands of billions of views.

All this processing takes time and will slow things down a bit, so games will have to be designed with the limitations of Freescape in mind. The first title will be Driller and should be available towards Christmas.

The good thing about Incentive is that they have always produced good Amstrad versions of their programs and Freescape is no exception. So when Freescape appears in the shops it may well be on a CPC before anything else.

New games at PCW

The PCW Show at Olympia is the place to see all the new products which software houses are lining up for Christmas. Heading the line-up are Gremlin, who have seven new games. **Gary Lineker's Superstar Soccer** is a mixture of strategy and arcade games. You play the centre forward but have to select the team as well as train and decide on tactics. **Mask II** the sequel to Gremlin's current game based on the TV series. Divided into four missions which rely on your using a mask to best effect. **Basil the Great Mouse Detective**, is not based on a Siberian hamster (*Is no rat - Mr Fawltly*), but the Sherlock Holmes-like character from the latest Disney film. **Blood**



Valley is a fantasy fighting adventure based on the Duellmaster books. You play a character trapped in a world peopled by evil warriors. Your aim is to escape, and when you find out that this has been programmed by Mark Smith and Jamie Thomson, who did *The Way of The Tiger*, you get the idea that this is not going to be easy.

Compendium is a novelty title. Up to four players take part in a game featuring the bacchanal Tiddly Wink and his wife Mavis, where the games of your childhood come to life. **Alternative Games** is a country fete simulation, wellie wanging, sack racing and pole climbing. A game for the fete-hearted perhaps. Rounding off the Gremlin goodie gathering is **Masters of the Universe - The feature movie**, the game in which you take on the role of He-man, to out-wit and out-fight the unbelievably evil Skeletor.

Activision plans quite a splash. It'll be showing **Rampage**, the arcade game where you play a king kong-like monster and get points by demolishing buildings, **Predator** a game based on the Arnold Schwarzenegger film, and **Bangkok Knights** a Thai boxing simulation from System 3, plus the two new

Infocom adventures, **Plundered Hearts** and **Beyond Zork**.

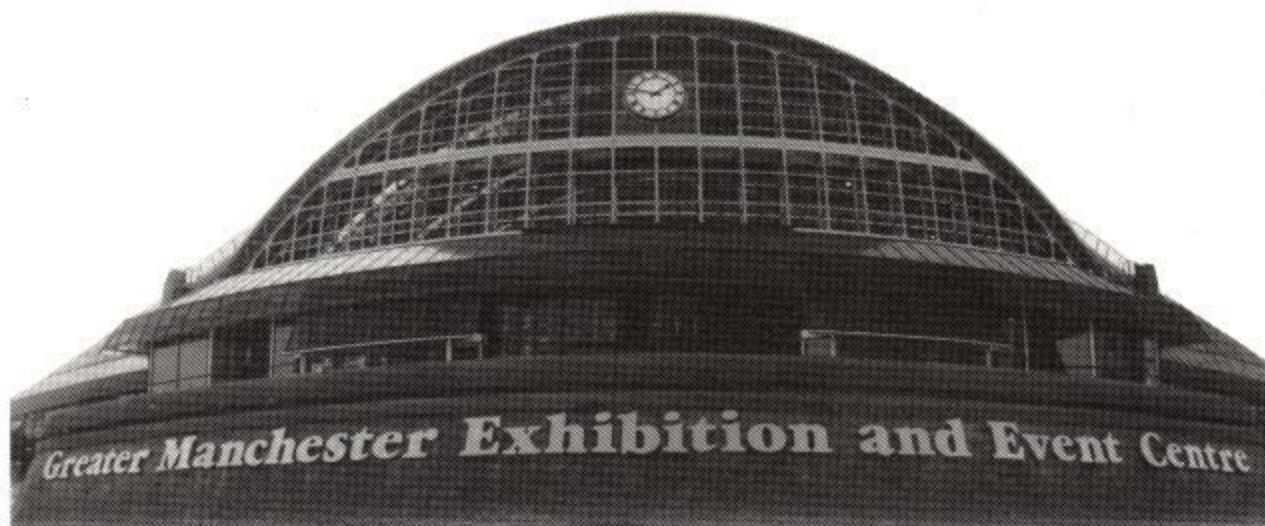
Activision's sister title, Electric Dreams, will model it's stand on motor racing as it will be showing **Super Sprint**, the excellent Atari overhead view motor racing game, **Super Hang-on** the motorcycle racing game from Sega, and **Firetrap** from Data East.

The motor racing theme is continued over on the Martech stand, where has been tied up a deal to produce **Nigel Mansell's Grand Prix**. The game will put you between the wheel and engine of the Honda V6-powered Cannon Williams FW11B formula 1 car which looks set to win the constructors championship this year.

The game can be played at two levels, either a simple racing game like 3D Grand Prix, or a fully planned race with fuel limits, tyre changes and a computer link to the pits.

The second new licence from Martech is for **Slaine the King**, the 2000AD character. This will be released under the new Creative Reality label. Bargain hunters should seek out the Martech stand for discounts on current titles like *Nemesis the Warlock*.

The big show goes North



G-MEX in Manchester – Britain's most impressive exhibition centre outside London – is the setting for the next Amstrad Computer Show which runs from October 23 to 25.

It will house the country's biggest computer specific show ever held outside London and was chosen for its ability to accommodate and reflect Amstrad's current dominance of the UK micro scene.

It took three years to develop the 100,000 sq ft Greater Manchester Exhibitions and Events Centre. The £20 million project began with the shell of a listed former railway station.

There will be no shortage of attractions for enthusiasts – including the PC1640 just launched by Amstrad, all the latest hardware and software and lots of bargains.

"The last Amstrad Computer Show at Alexandra Palace was the biggest and most successful computer specific exhibition ever held in the UK", said Derek Meakin, head of Database Exhibitions.

"Now the scene moves North to Manchester where once again we have had to take much more space than before in order to accommodate the ever growing number of Amstrad users and exhibitors.

"The event seems sure to set new records for attendance and turnover".

Midi marvels

A MIDI interface will allow you to connect your CPC to an increasing number of musical instruments. The British Music Fair saw a huge variety of boxes which you to connect your CPC to an increasing number of musical instruments, the British Music Fair saw a huge variety of boxes which would benefit from being connected to something like an Amstrad.

Along with the usual synthesiser keyboards were midi-compatible guitars from Casio, piano accordions from Honer and a 68000-based drum kit from Simmonds.

This offers special areas on the drum pad for damping the sound and a visual display for setting up the kit. All the

controls are icon driven with a trackball.

It sounds splendid, but then it should not-only has it got a 16 bit CPU, it also uses four input/output processors and two NEC gate arrays (the same technology used by Amstrad in the PCW and +3 computers). This little lot will set you back £6,000.

On a more down to earth level Cheetah launched a budget priced digital drum kit. for under £300 you get both the drum pads and a drum machine to fill in beats. More details are available from Cheetah on 0222 555525.

Hewson cheapies

HEWSON is a software house dear to our hearts. It produces good games because programmers like working for

it. Until now only good full price games have been produced, but what about all the games which don't quite make the Hewson grade? Well the Hewson solution is a Rack-It, well not really a racket, more a new games label.

Rack-It is the name of Hewson's range of £2.99 games. Meanwhile Hewson is about to launch Evening Star, a Southern Bell type steam train simulation.

The difficult thing about selling budget games is getting them to all the non-computer shops which sell them. You may have noticed Mastertronic games in your local 7-11 or petrol station. It is this distribution which is the key to making money with budget titles and Hewson has not got the experience in this field. So it has teamed up with Mastertronic who will be selling Rack-It games alongside Mastertronic and Americana titles. Look out for them soon.

Aston Martin competition

LAST month's Aston Martin competition has caused some problems. We discovered, after the magazine had gone to press, that the company is starting work on a secret new car to replace the current range.

Details which have emerged show that the new car is a real cracker, but Aston Martin has had to cancel all factory visits until after the new dream machine is launched.

This would mean delaying the prize

for a year, so an alternative first prize has been arranged.

The winner and a friend will be taken to the National Motor Museum at Beaulieu for a VIP tour of the sights, including a 1922 Aston Martin racing car. Because of this change of plans we are extending the deadline until Friday October 30. The questions remain the same as last month's and you can enter using either that coupon or the one below.

ENTRY FORM

Name

Address

Telephone number

1)

2)

3)

Send your entry to:

Domark Competition, Amstrad Computer User,
169 Kings Road, Brentwood, Essex, CM14 4EF

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

MicroLink



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



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



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



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



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



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



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



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



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



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

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

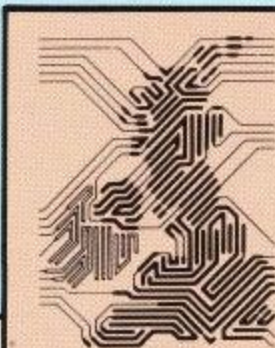


All you need – apart from your Amstrad – is a modem, which plugs into your telephone wall socket, an RS232 interface and suitable communications software.

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

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

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



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

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

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

A B C D

Name _____

Address _____

Postcode _____

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

For all those who Announcing a competition you
want to win £250 can enter without a coupon,
in the Electronic a stamp or an envelope. All
Yellow Pages you need to do is follow the
competition, here's instructions in the panel oppo-
the answer. site to programme Electronic

Yellow Pages into your



computer. Answer one simple

question and enter your name on the screen, and you then stand a

chance of winning £250 or one of the many other cash prizes.

But ours is not the only competition you'll find on Electronic

Yellow Pages. Rivalry is fierce between different plumbers, car

rental companies, builders and other competing advertisers.

Each one can display their latest rates and special offers. So if

you want to compare the prices of several different firms, just

tap a few keys to find the lowest quote. Electronic

Yellow Pages already covers all of London,

Guildford, Reading and Watford. To find out more

about how this new service works, or if you

have any difficulty gaining access, phone our

Helpline on Reading (0734) 506259. And even if

you don't win the competition, you'll still find that

Electronic Yellow Pages offers many rewards.

HOW TO ENTER

First, you must programme your terminal to connect to EYP:

if you have a Videotex terminal with a Database Directory, simply add EYP and the appropriate telephone number below to the menu, as shown in the terminal handbook;

if you have a Teletype terminal, (e.g. a microcomputer) simply set up a profile for EYP using the relevant telephone number and technical settings. If you are not sure how to do this, ask your computer supplier.

To gain access, dial the number you've programmed and, once connected, you'll be asked for a user ID number. Simply enter the special competition ID shown below, and follow the instructions.

ACCESS NUMBERS

For Teletype 300/300

Dial: Reading (0734) 586255

Enter ID: 5005

For Teletype 1200/1200

Dial: Reading (0734) 597231

Enter ID: 5005

For Videotex 1200/75

Dial: Reading (0734) 585151

or go to Prestel page 3813

Enter ID: 5006

Like the whole EYP database, entering the competition is free.

TECHNICAL SPECIFICATION

Technical settings for EYP are:
7 data bits, 1 stop bit, even parity

PRIZES:

1st £250; 2nd £100; 3rd £50;

150 consolation prizes of £20.

The closing date for entries is

30th September 1987.



GALLUP

SOFTWARE

CHART

				Last month	Market strength
1	▲	BMX Simulator Code Masters 1.99	Cycling simulator best played with a friend, a good, fun game with a low price. BMX may be on the decline, but the memory kind of lingers.	2	100
2	●	Destructo Bulldog 1.99	This month's fastest climber is, surprise surprise, a budget game. While many software seers are predicting the downfall of budget, the pound speaks mightier than the pen.	NE	97
3	●	Paperboy Elite 8.95	This game was late out on the Amstrad due to strict quality control. Written by an ex-Vortex man, it is the best conversion of the arcade game, even if it has no sound at all.	NE	96
4	▼	Grand Prix Simulator Code Masters 1.99	The racing game for those who know their opposite lock from a four wheel slide. Super Sprint by any other name would still play as sweet. This is a bargain.	3	95
5	▼	Barbarian Palace 9.99	Showing that sexism is good for sales and a bit of a decapitation doesn't hurt the bank balance. Palace has exploited the fighting game theme with panache.	4	86
6	▼	Ghost Hunters Code Masters 1.99	A spooky game by the same programmers as Grand Prix Simulator. It will be interesting to see what happens with the full price games from Code Masters.	1	80
7	●	Milk Race Mastertronic 2.99	Good to see Mastertronic sponsoring sport. I would prefer to see more effort directed at the motor racing car sponsored by Mastertronic.	NE	56
8	▲	Big 4 Durell 9.95	Top notch compilation which has two excellent games, one good game and a totally new program. With this kind of value it is a surprise that Big 4 has tumbled so far from number 1.	9	45
9	●	Stormbringer Mastertronic 2.99	David Jones brings back Magic Knight in the latest menu-driven arcade game. You don't need to have played the other MK games to win at this where the pixel man battles with his alter ego.	NE	56
10	▼	Feud Bulldog 1.99	First game on Mastertronic's new label. Chunky sprites and a mystic plot go to make up this 2D arcade game.	6	51
11	▼	Six Pak Hit Pak 9.99	Proving that compilations are as popular as ever this has scorched a trail into the chart and can be expected to hold on in there for some time.	5	55
12	●	Run for Gold Alternative 1.99	Proof positive that the small-time software house can still make a good showing if the price is right. Making a new entry into this chart is some achievement with so many good new titles around.	NE	44
13	●	Ballcrazy Mastertronic 1.99	A 2D Q-Bert type game, where you play the ball and have to bounce on bricks until they all reach the prescribed colour. Cute and fun, but lacks depth.	NE	39
14	▼	Ninja Mastertronic 1.99	The fist fiends fight in. This time with a more vicious trait and at a lower price. You have to fight off the hordes using a variety of weapons.	11	38
15	▼	Konami's Coin Op Hits Imagine 9.95	Take the best from the arcades into your home. Green Beret, Ping Pong, Hypersports, Mikie and the splendid Yie Ar Kung-Fu. Looking a shade dated now, but a good blast all the same.	16	37
16	▼	Head over Heels Ocean 8.95	Hours of entertainment make this a bargain. Deserves a top five place at least. Very difficult, but shows a good sense of humour. The next game from Jon Ritman will be a match of the day sequel.	10	36
17	▼	Four Great Games Micro Value 3.99	A cheapie compilation. To think that some people thought that budget software would see the death of the games industry. Still if they are such great games, why sell them at less than a quid each?	8	35
18	▼	Army Moves Imagine 1.99	The first Imagine game to result from a deal with the Spanish software house Dinamic. Bouncing buggies and 2D graphics.	12	35
19	●	F-15 Strike Eagle Microprose 9.95	The PC users favourite game, now available on the CPC. Both flying simulation and wargame tactics make this a cerebral shoot-em-up. Well programmed with detailed documentation.	NE	34
20	●	Ultima Ratio Firebird 1.99	The stock in trade of the budget field at the moment, a scrolly shoot-em-up. But this is an uninspired game - there are better, notably Mission Genocide from the same company.	NE	33



Non-mover



Up



Down



New entry

Chart compiled by
Gallup/MicroScope

Hi, I'm Lance Davis, your letters editor. If there is anything you think Amstrad computer users ought to know about then drop me a line. I can't deal with individual problems and this isn't really the place for programming tuition but it is the place for bouquets and brickbats, views and opinions. Write to me at the address in the front of the magazine or on Telecom Gold System 72:mag012. Remember that some writers will be sent free software, so let me know which computer you have.



Good vibrations

I HAVE a CPC 6128 and am very pleased with it and I buy your magazine every month in preference to the cheaper Australian ones.

I am writing to inform Amstrad computer users of a much cheaper alternative to SSA-1: Go to the local Tandy store (or the English equivalent) and buy a 1/8" phono lead and a mono to stereo adapter plug. Plug one end of the lead into the adapter and the other into any tape-recorder then plug the adapter into the stereo socket in the side of your 'Straddy.

Take an old cassette and rip out the magnetic tape. Put the empty cassette shell into the recorder and press the record button. Turn on the computer and presto - fabulous stereo sound, terrific with Smart Chat.

Tony Joslin
Brisbane, Australia

Exit!

FOR the last year I have used a PCW 8256 as a smart typewriter. But my daughter, my secretary and I have all thrown a wobbly through not knowing what to do when we try to save after typing away for an hour or so, only to get DISC FULL. There is, of course, no advice in the book.

Accepting the offer of disc manager by pressing ENTER is fine, and it's simple to erase or move a file to make space. But then? The next move can lead to disaster. We found the answer this morning.

The right key to press is EXIT and the precious script is safe. The process can be repeated if you haven't made enough room. Of course, it would help if the book explained in the first place that saving a document needs rather

more than twice as many ks as it is long, and why.

After a year I'm seeing the possibilities of writing educational simulations, like pretending to be Brazil borrowing a few million dollars from the World Bank, and living through the next few years of interest hikes... can you recommend a book to take us through the next year?

The Revd. Tony Graham
Crawley, West Sussex

LD: A good book to take you through the next year would be the *Letts 1988 diary*. No seriously, if you want to program then look at *Program Your PCW* by Ian Sinclair from Glentop publishing. You should also read *Amstrad PCW Magazine* which specialises in using your computer.

I ♥ Arnor

I WAS surprised to read the letter from Dr Stadler in your July issue in which he criticised Arnor. At that time I was in contact with the company, having bought ProText, ProMerge and ProSpell. Being a non-technical animal I could not make the programs work. Arnor was the epitome of patience and helpfulness, replacing eproms without

question and without even charging me postage.

Finally I received a helpful letter from Ben Carr from the Peterborough address, but by this time the programs were functioning perfectly.

Incidentally, I received the same sort of consideration from Pace when I made an awful mess of my Commstar software. It was replaced entirely free of charge. I am sure if all British firms were as competent and helpful there would be a great upsurge in our fortunes.

Michael Lewis
Rhyl, Clwyd

Help wanted

I'M interested in finding information concerning a green screen monitor, a CPC 464 computer, a MP1 modulator and a standard colour T.V. displaying the same things at the same time. I would be grateful if you could suggest a suitable piece of hardware for this task, as I am eager to do this. Also where would I buy it from?

Glyn Dewis
Walsall, Staffordshire

LD: No one makes a suitable box, although you could build one with the appropriate leads.



Programming poser

AFTER trying for the umpteenth time to find the third door in Dan Dare (a game I bought for my son - he lied), I knocked it off and wondered what else to do.

Then I remembered a book I had borrowed from the library about 12 months ago. Unfortunately it was about the BBC Micro, but a chapter contained some questions from a G.C.E. paper - one was to write a program, giving the prime numbers up to 100.

The author had included a possible answer, about 50 lines long. I thought it could be done a lot more economically and came up with the following:

```
10 MODE 2
20 N=1
30 FOR T=1 TO (N/2)+1
40 X=N/T
50 IF X>1 AND X<N AND LEN(STR$(X))<3 THEN GOTO 80
60 NEXT
70 PRINT N;
80 N=N+1:IF N>100 THEN END:ELSE GOTO 3
90
```

A lot shorter you must agree.

The routine in the book contained a complicated mathematical algorithm to solve the question, whereas I have used the `str$` command as a short cut. So I had to write to ask, if computerites regard my way as a cheat, or is it a legitimate short cut to problem solving? Please vindicate me as I have a fiver on it with a mate.

W. Elliott, Lancaster

LD: Try the algorithm method and see what it is like for speed. Your method is very slow and there are cleverer ways to calculate prime numbers, like only dividing by the previous primes.

The shortest program is not necessarily the best. The `str$` short cut is perfectly valid but it may be confusing if you do a lot of this kind of thing, so people who advocate structured programming would frown on it.

Your test is limited because it only works for values up to 100. Change line 80 to work with larger numbers and line 50 stops working.

It is not only that which is poorly

structured, but the jump out of a loop which is considered bad practice.

You can't cheat at programming - either it works or it doesn't. But if pushed I would say your friend is right.

Name dropper

I HAVE compiled a short story as did C. Wilson (ACU August)...

In the year 1942, MIKIE went to play PING PONG with KANE. He met a HACKER called SPANNERMAN, who was playing 180 games of SPACE HARRIER! He was soon SPELLBOUND, JAMMIN all night long, and he had a SHORT CIRCUIT.

Some DODGY GEEZERS entered the CAVES OF DOOM and tripped over a FAT WORM, near the COLONY. MONTY was ON THE RUN from a BARBARIAN, who had a GREAT ESCAPE from his MINI OFFICE, in STARQUAKE.

'AUF WIEDERSEHEN MONTY', he said, but it was a NEVER ENDING STORY... because BATMAN went to GET DEXTER, and they travelled through the SUPER PIPELINE in SWEEVOS WORLD.

They found the GAUNTLET and made a CURSE ON SHERWOOD, which caused a REVOLUTION between SIR LANCELOT and the

MAGIC KNIGHT. A RED HAWK was flying above, which meant the FEUD was over and you must learn to either DEFEND OR DIE!

Guy Sanders,
Herts.

Beeb boob

AS a business user of CPC computers, I was particularly interested by the review on BBC Basic by Richard Sargent in the August issue. One thing that we particularly miss with Locomotive Basic is the use of Arcsine and Arcos functions.

I write more in the nature of a complaint about the review. First, there was no reference to M-Tec's address, though after a little detective work, I managed to locate the phone number.

Richard seems to have got the cost of this software wildly wrong. I was informed that the cost was £49 plus £3 postage, plus VAT, and not the £29 quoted in the review. If you can obtain a copy of this software for us at £29, we would be most grateful.

G.E. Lewis
Canterbury, Kent

LD: OK so we are fallible, it proves that the magazine is written by humans on computers and not by the computers themselves.

Want on war

I AM looking for a serious wargame for the 6128. Two companies Strategic Software and MicroProse, produce good wargames, but not for the Amstrad. I hope you can let me know the computer wargame situation for the 6128 in the UK.

Marcus Rodda
Hammondville, Australia

LD: PSS is a company which produces a large number of strategic wargames. You can contact them on (0203) 667556.





Walkie talkie

THIS is an idea for making the Ambug talk by using the DK'tronics Speech Synthesiser. You need a miniature loudspeaker of 8ohm 38mm, with two metres of loudspeaker cable attached with solder, and a jack-plug (suitable to fit into the speech synthesiser interface) soldered to the other end.

Fit the speaker inside your Ambug and put the jack-plug into the interface. Now switch on the computer and load the speech software. It should now be easy to write a program to make it say something. If anybody is having trouble making it talk then write to me, including an sae. I have a 464.

D.J. Portman

11 Pen-y-fan Close Pentwyn, Crumlin
Newport, Gwent NP1 4JQ

All the diodes down my left side

LAST week I found an old ACU which included a review of The Hitch Hikers Guide to the Galaxy but you said it was only on disc for the PCW 8256. Is it available for the CPC 464 cassette and if it is, how much?

Lee Burridge
Caerphilly, South Wales

LD: The Infocom adventures are available for all CP/M systems, so you can run Hitchhikers on a 464, 6128 or PCW - but they do need a disc drive. It is not available on tape, sorry.

Disc dilemma

I OWN an Amstrad CPC 464 and am considering buying a disc drive, but much of the serious software is on floppy disc and I have never seen or even heard of floppy disc drives for the

464. If there is one and you know where to buy one, please tell me.

L. Glenister
Lincolnshire

LD: The disc drive for the 464 is called a DDI-1, it costs around £160 and you should be able to get one from a good local computer shop. There has been a shortage recently so you may need to shop around.

He's not wearing hairspray

I RECENTLY bought ACU and I must say that it's excellent, especially the software and hardware reviews and the hacking. I'm a 16 years old boy and the owner of a CPC 6128 and I'm very happy with it.

I'm a member of a computer club in Belgium. Two months ago we bought AMX-Pagemaker, but some things don't work like GRIDLOCK and EFFECTS (Italic, Bold, Attribute). A friend of mine bought the same program a week ago and his program works perfectly. So, I want to warn readers of ACU that they should test the program before they buy it.

I have a tip about monitors. When light falls on the monitor it's difficult to read text or to see what you are doing. A lot of shops sell screen filters to reduce the glare and the eye strain, but there is a cheaper way.

You can get the same result with hairspray. First cover the computer keyboard, then clean your monitor to make sure that all the dust is removed. When you start spraying, you must hold your aerosol can at least 30cm (12in) away from your monitor. A very good hairspray is Rojanet.

Jo Van den Berghe, Belgium

LD: Thanks for the tip, Rojanet isn't

easily available in Britain, but I'm sure others will do just as well. We often use a special matt spray when taking photographs of computers to cut down glare, but they get dirty very quickly afterwards.

Oz Club

OUR club is interested in opening communications with other groups with a view to exchanging ideas and information.

With the worldwide popularity of the Amstrad, there is, no doubt, a wealth of information that would benefit all. The Amstrad Computer Club has been incorporated in South Australia, as a non-profit body, and has the active support of most retailers.

We have been meeting every Tuesday for about two years and currently enjoy a financial membership of about 150. We conduct courses in both Basic and C/PM, and we have some talented members who have developed both software and hardware ideas, among them a commercially distributed Screen and Graphics Package (Bunyip Software).

Our hardware mods include a switch that enables a 5.25in drive to run as drive A, as well as a reset button to escape a total system lockup without powerdown.

Any group wishing to reply can write to me at Amstrad Computer Club Inc. PO Box 210 Parkholme South Australia 5043

Frank Matzka
South Australia

Dixons accolade

I READ with interest the letter from J. McCluskey in the July edition of ACU and I would like to inform him that Dixons in the Kingsgate Shopping Centre in Dunfermline stock all Amstrad peripherals, including the MP2 Modulator.

Dixons also offer a special serial interface which plugs into the printer port of the CPC 6128 and a small piece of software on tape (for the CPC 464) which will work perfectly well on the CPC 6128.

As evidence of this I wrote this letter with this set up and Mini Office II. There have been several letters asking about cheap printers for Amstrad machines and this set up would fit the bill, providing of course that the use of graphics was not required.

Robert Peffers
Kelty, Fife

LD: It just goes to show that you cannot generalise about computer shops, not even those as homogeneous as Dixons. There are good and bad everywhere.

Utilities Unlimited!

We've brought together the very best non-games programs culled from past issues of *Amstrad Computer User*.

These clever programs cover animation, business, music, games hacks, and much more. Whatever your interest, there's something here for you – and at a very special price.

Homespread – prepare your budget with this simple but flexible spreadsheet.

Amgraph – produce bar graphs, pie charts from a table of numbers.

Diary – bring some order to your busy lifestyle (disc only).

Mode 3 – Mode 0 with four colours in only 8k, with accompanying demos.

Animator – become the new Walt Disney. Built-in 'tweening' facility.

Trace – re-direct the trace output to a window or printer.

Sorcery Plus Hack – modify the sprites and increase your survival chances.

Chord Finder – learn the difference between a suspended and flattened chord.

Jet Set Willy Hack – infinite lives and a magic teleport facility.

Double Height Print – expand your horizons with these tall characters.

Elite Disc Hack – add millions of credits or Elite status to your commander.

Justin's Scroll – discover how the experts program a scrolling landscape.

RSX Lister – list all RSXes including those which have been soft loaded.

Printer Spooler – carry on using the computer while the printer is working.

Epson Dump – produce hard copies of the screen display on the DMP2000/3000.

Organ – turn your micro into an impressive musical keyboard.

ZX Loader – load Spectrum binary files into your CPC.

Tape price £7.95 Only £1.95 with a new subscription or subscription renewal

Disc price £9.95 Only £3.45 with a new subscription or subscription renewal

All games work on Amstrad CPC 464, CPC 664 and CPC 6128 computers. You can list and adapt all the Basic files – an excellent way to improve your programming skills.

TO ORDER PLEASE USE THE FORM ON PAGE 71

THE ULTIMATE CHOICE IN COMPUTER SUPPLIES

DUSTCOVERS

PCW 8256 (Full Set)	£10.35
PC 1512 (Full Set)	£9.50
DMP 2000-3000	£4.89
DMP 4000	£5.75

"THINGI" COPY HOLDER



£6.99 incl

FITS TO TOP OF PCW WITH VELCRO STRIP PROVIDED.
PLEASE SPECIFY LEFT/RIGHT REQD.

DISK STORAGE



3" DISC BOX
HINGED LID
Cap 25 Discs
(uncased) 15 cased
£9.50 incl.

◀ DIAL A DISK
10 x 3" DISKS
PROTECTED AND
DISPLAYED
£5.95 incl.



3" CF2 DISKS

**SPECIAL
SUMMER
PRICE**

~~£25.50~~ **£25.00** for 10
~~£69.50~~ **£69.00** for 30

PERSPEX VDU FILTERS FOR PCW 8512 & PC 1512

- ▶ REDUCES EYESTRAIN
- ▶ REDUCES GLARE
- ▶ REDUCES HEADACHES
- ▶ IMPROVES CONTRAST

ONLY
£14.95 incl



FITS TO VDU WITH VELCRO PADS PROVIDED
PLEASE SPECIFY IF MONO/COLOUR VDU (PC 1512 ONLY)

SCREEN CLEANING KIT PRINTER CLEANING KIT RIBBONS

DMP 2000/3000	£10.35
PCW 8256/8512, black fabric	£15.71
PCW 8256/8512, black, red, blue fabric	£4.89
PCW 8256/8512 (Black Carbon)	£4.83
PCW 8256/8512 (Black Carbon)	£4.95
LISTING PAPER	11" x 9 1/2" 60 gsm ruled/plain .. £15.43/2000
A4 continuous 70 gsm plain	£14.08/1000
A4 continuous 90 gsm plain	£14.95/1000
(Micro-perforated on all 4 edges)	
LABELS	3 1/2" x 1 1/8" 1 across the web ... £31.56/8000

▶ Call for sizes not listed.

**BARGAIN
CORNER**

ALL PRICES INCLUDE VAT — PLUS — FREE NATIONWIDE DELIVERY

SBS Computer Supplies Ltd.

UNIT 3 · CLARKS INDUSTRIAL ESTATE · NEWTOWN ROAD
HOVE · SUSSEX · BN3 7BA · TEL (0273) 726331 TELEX 878226

FOR IMMEDIATE DESPATCH ☎ OUR 24 HOUR



HOT LINE (0273) 726331

**COMPANIES
WHY NOT
ASK FOR OUR FREE
64 PAGE CATALOGUE**

PLEASE SEND ME

DESCRIPTION

QTY.

VALUE

LARGE STOCKS
AVAILABLE
ACCESS AND VISA
CARDS ACCEPTED

ACU10

TOTAL ORDER VALUE

I ENCLOSE A CHEQUE PAYABLE TO
SBS Computer Supplies Ltd.

NAME

ADDRESS

TEL

**COMPUTER
SBS
SUPPLIES**



MAX FACTOR

**Is your computer a man or a mouse?
Rupert Goodwins looks at MAX, the digital
desktop from AMX and provides a guide
to the fashionable jargon along the way.**

MAX is a desktop for your CPC. No, not the flatpack from MFI, carve undying love for Sandra, spill the ink and stick the chewing gum type of desktop, more the hi-res graphic interface to computer sort.

Load MAX, and instead of typing commands like LOAD and RUN you get to move an arrow about the screen. It might not sound like a great advance, but read on.

The first thing you see on loading (via the old-fashioned RUN "MAX route") the program is a fairly empty Mode 2 screen. At the top left hand corner sit three words and a little picture of a mouse. These are the pull-down menus. (One of the side effects of going upmarket to desktops is a proliferation of jargon of a quality and quantity sufficient to keep the most ardent acronymist happy).

Down the right hand side of the picture are grouped various sets of pictures. Only you mustn't call them pictures, 'cos everybody knows what a picture is. They are icons. Sounds much better.

Similarly, the arrow's real name is the pointer. It moves about the screen freely, going whither you would point it. You can move it by the cursor keys, a joystick or the AMX mouse. The mouse is the recommended option, as with it you can "point" by moving your hand in a similar fashion to the way you would move to pick up something from a physical desktop.

And as the idea is to allow you to use your computer in the same manner as you would use a desktop full of pencils,

files and oddments, this is why it all works better with a rodent. With the mouse, if you move your hand quickly the pointer moves quickly, and vice versa. It soon becomes second-nature.

When you move your pointer over an area of screen containing a pull-down menu or an icon, you can choose (*jargon, select*) the action that the menu or icon represents by pressing a button (*jargon, clicking*) on the mouse.

When you click on an object, it either becomes selected (you can tell because it changes from a normal picture to reverse), or springs into action.

With a pull-down menu, a list of associated options appear beneath it – move your pointer down to the option and click again, and the option happens.

Window winder

For example, there is a pull-down menu labelled DISC. Click on the word, and the options Copier, Formatter, Sector Editor, Dir. Editor and Fast Tracking appear in a list. Move down to the Copier and click, and a disc copy program starts.

You don't have to remember to type DISCCOPY followed by a string of magic letters and punctuation marks. The idea is that at each stage of the proceedings – the computer prompts you with all possible choices.

All you have to do is remember what it was that you wanted to do in the first place.

You don't even have to be able to read. A shame, after all that time we've

spent teaching the Ed that A is for Amstrad, and M11 isn't pronounced autobahn, but if you can comprehend simple pictures you can now drive a computer.

The Apple Macintosh was the first massmarket computer to try and do everything by icons, and consequently gained a huge following in the advertising and "creative" spheres where a knowledge of English is a disadvantage.

The icons in MAX are standard issue – pictures of disc drives, printer and dustbin are all guessable graphics. The selection of exploding and imploding arrows, the overendowed Trivial Pursuits pie, the graphic equaliser and the sets of rectangles might need a bit of explaining.

The rectangles represent windows. Yup, another word borrowed from reality. Windows are areas of screen that "open up" to display information, so if you select a disc drive, a window opens up to show the directory.

One of the basic ideas behind the whole desktop concept (no wonder the ad people fell in love with the Mac – concepts, ideas and pretty pictures...) is that lots of things can be going on at once.

On a CPC, where things can't actually happen simultaneously, you should be able to run something, then do something else, and finally go back to the first something without having to abandon it at any stage.

If you open a window, and it obscures an older window that you were playing with before, then the older window and

everything associated with it is remembered by the computer. When you finish with the new window, you close it and you find yourself back in the older one as if nothing had happened. Closing windows is done, as 'most everything else, by pointing and clicking.

Remember the rectangles? These allow you to swap which window you are working on (*the active window, jargon junkies*), and shuffle through sets of windows when looking for something you opened a while back.

The sets of arrows expand or contract the active window (thus hiding or revealing what's below, and changing the work area). For example, if you're going through a disc, deleting old files and having a good tidy up, you'll want as many files on screen at once as you can have.

You make the active window as big as possible. If you want to copy files from one disc to another, you open two windows (one for each disc), and generally speaking have each occupying half the screen.

The graphic equaliser icon is the control panel. Click on this, and you get a set of options allowing you to choose mouse or joystick, screen colours and speed of operation, as well as personal preferences as to how exactly the menus work.

The paper and ink colours are presented as a pair of sliding controls, and on a monochrome screen allow you to change the brightness and contrast of the display in a very impressive manner. You cannot set ink and paper to precisely the same colour, which is a good way to become totally adrift in a graphic interface (you can't type in commands blind!).

That Trivial Pursuit icon ...

The rest of the icons mirror functions available from the pull-down menus. There is a very useful sector editor (the pie icon), which allows the brave to alter any byte on a disc, including the words in games to hilarious/juvenile (depends on your sense of humour) ends. It can also mess up a program completely.

The Directory editor can mess up an entire disc completely, so merely brave hackers need not apply. Foolhardiness (or a backup) is a prerequisite.

The editor can also rescue an erased or corrupted file, so it might just save your leathery hide one of these days. But you do need a good knowledge of

make safe use of such powerful facilities.

The directory function was mentioned earlier. When you click on a disc icon, the files on the disc in the drive appear in picture format – a text file looks like a page of text, a Basic program like a listing, and so on. By clicking on the file of your choice, and then clicking on the RUN icon (a little man running) a program can be got going.

Most programs will work from the MAX desktop, certainly I did not experience any problems, although the manual does warn that certain unspecified protected programs may have unspecified problems.

Documentation

Mention of the manual allows me to slip from descriptive to reviewer mode. The manual was a little annoying, for a number of reasons. The first is that I had to look at it at all in the first half hour of playing with MAX.

The main reason for having desktops is that they are completely obvious. You shouldn't have to think when using them, and they should never be so obscure in operation that you have to resort to a manual.

MAX fell down a couple of times in this respect, the major problem being the RUN icon. In every single one of the many desktops I've used previously, there is a technique called double clicking. To run a program, you point at it and click twice in quick succession. And it runs.

This doesn't happen with MAX, I don't know why, and it is incredibly annoying. And since I'm on my soap-box...

Chock-a-block buttons

The optimum number of buttons on a mouse is one. Any more, and things get confusing, and the whole idea of point and click gets murky. The AMX mouse has three buttons, and even though it's a well-designed and sleekly finished wee tim'rous beastie, it still has two buttons too many.

A strong-willed software designer would treat all buttons equally, but MAX sometimes needs one button, and sometimes another. Resort to the manual? Well, you can try.

Like I said, the manual was annoying. When I was slowly realising that double-clicking didn't work, I looked at the manual. Running a program, I was informed, is achieved by

clicking on the program, and then clicking on the icon at the top left of the Control Icon window.

Yer wot? Looking at the labelled picture of the desktop, there was nowt labelled Control Icons. The paragraph was labelled Function Icons, but there was nothing by that name either on the picture.

In retrospect the Various Utilities window was guessable, and the stickman could have been running, but good icons don't rely on visual puns.

Other moans include the fact that it knows nothing about roms, and also doesn't think a file of type .DOC is a text file. You can't make it realise that, either. Neither can you associate a type of file with a particular program, so that when you try and run a .TXT file the desktop goes away and starts up your word processor for you.

Smooth stuff

But be still, AMX's racing heart. The rest of the desktop is wunderbar. The quality of the graphics is excellent, and full use has been made of the little known fact that the screen resolution in Mode 2 of the Arnold and that of the Macintosh are as near as dammit the same. It made me get the Windowlene and clean my green screen to do it justice (colour screens don't look quite as good, but that's Sugar's fault).

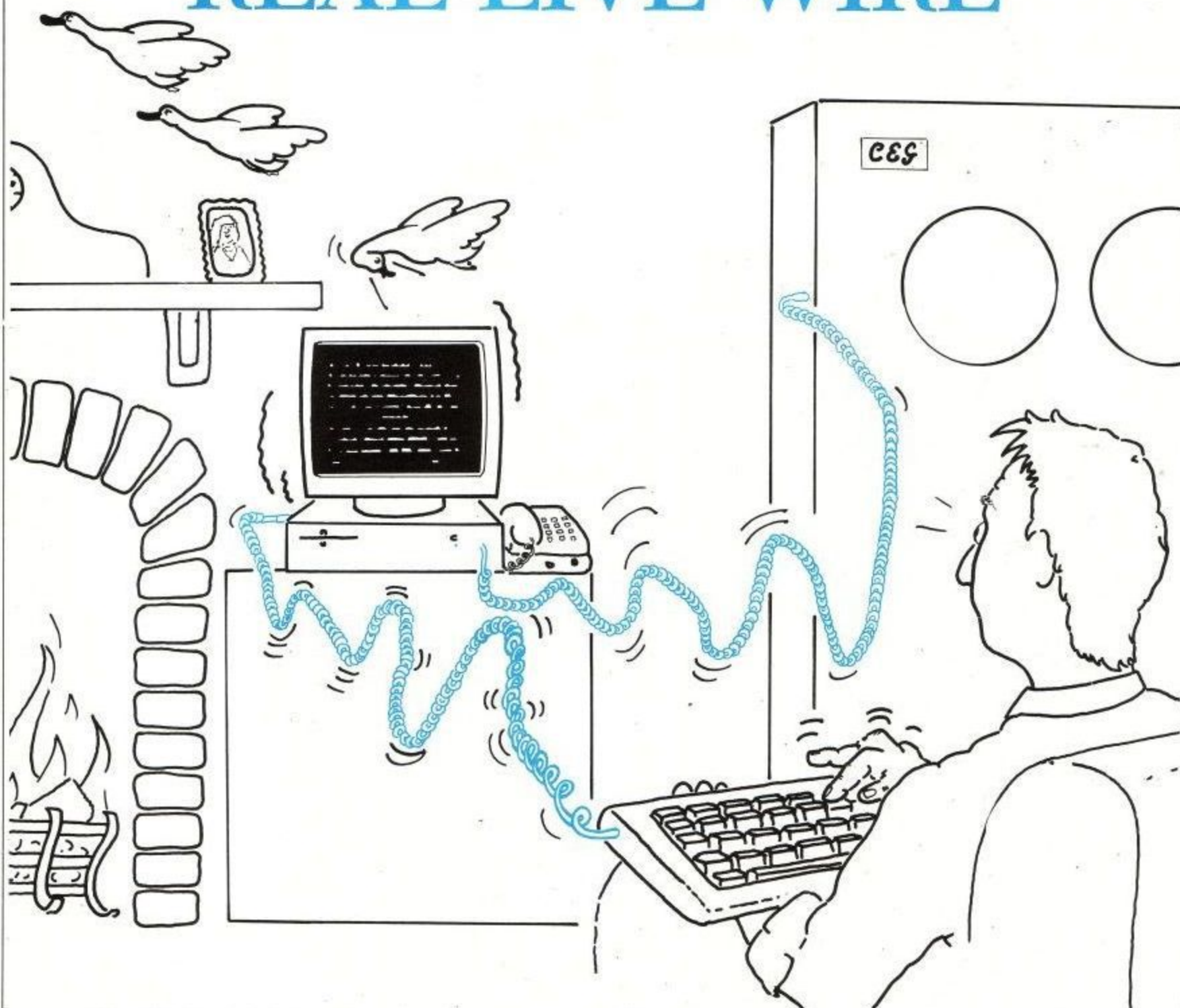
And the mouse/pointer action was so smooth, like writing with black chalk on white marble. Delicious. Similarly, the disc/sector editors are pretty indispensable, and alone justify the software. And the desktop environment really is the best way to make the most of discs.

More than that depends on AMX. It would be nice to see them produce some documentation so that people could write Basic programs that used the windowing and mousing. They've done it for the Spectrum.

And a rom version of the program, that perhaps worked in slot 7, would be almost as nice as one that used any extra memory you had to beef up the copying and other functions. But even as it stands, I think it really must be counted as a major contribution to the CPC software canon.

MAX is only available on disc, it costs £19.95 and is available from Advanced Memory Systems, 166/170 Wilderspool Causeway, Warrington, WA4 6QA. You can call them on (0925) 413501.

COME HOME TO A REAL LIVE WIRE



Inject the power of a mainframe into your micro. MICRONET is the only product that provides you with:-

- Real-time interactive chatlines
- Free and discounted telesoftware
- M.U.G.'s inc the UK's most popular SHADES™
- Daily computer news and reviews
- Free PRESTEL™ electronic mail
- Teleshopping – holidays, hotels etc.
- 70,000 PRESTEL users 56,000 Telecom Gold users
- National and International Telex
- Technical Support and Help Desk

PLUS: Access to PRESTEL and Telecom Gold, and there's much more – all for one low cost subscription. Modem owners call us now for an on-line demonstration.

With your first annual subscription MICRONET will give you a free modem. Complete and return the coupon for your MICRONET brochure.

MICRONET

MICRONET, Durrant House, 8 Herbal Hill,
London, EC1R 5EJ. Telephone 01-278 3143
Please send me a free MICRONET brochure.

Name _____

Address _____

Tel _____ Age _____

Micro _____

AMJ/LW/10/87

AMSTRAD
COMPUTER USER

Exclusive READER OFFERS

A·M·S·T·R·A·D A·N·T·H·O·L·O·G·Y

These two exciting compilations bring together the very best games listings which have helped to make *Amstrad Computer User* the best-selling Amstrad magazine in the country.

And we've kept the price right down to thank you our readers, for all your encouragement and support.

V·O·L·U·M·E

1



Roland Takes a Running Jump

**13
GAMES!**

Racer



Roland Takes a Running Jump

A colourful fast-action ladders and levels game which developed from the highly-praised series of articles on writing your own arcade game. Includes extra screen data.

Racer

Get behind the wheel of this Grand Prix racing car and take it for a spin round the tortuous test track. A nifty bit of programming.

PLUS

Life, Electric Eddy, Galaxians' Revenge, Trench Attack, 3D Maze, Missile Attack, Monsters Final Hour, Up the Beanstalk, Amthello, Frantic Freddie and Electric Fencing

V·O·L·U·M·E

2



Space Mania

**23
GAMES!**

Splatch



Space Mania

This machine-code megaprogram is worth the price of the compilation on its own. There's loads of screens to negotiate in a ladders and platforms extravaganza.

Splatch

Think you've seen this one before? Balderdash, we reply. Help the rabbit get to the carrots, and don't forget to drop an acorn on the squirrels. Great fun for all the family.

PLUS

Duck Dodgers, Rock Hopper, Froggie, Crazy Legs, Double Trouble, Up Up and Away, N-Sub, Pac-Caverns, Moonbase Alpha, Beat the Clock, Cargo King, Pinball, Sabotage, Battle of the Cars, Quoite, Sniper, Combat, Plumberdroid, Crawler (6128 only), Frootee and Helicopter.

Tape (Each volume comes on two cassettes) **£7.95**

Only £2.95 with a new subscription or subscription renewal

Disc **£9.95**

Only £3.95 with a new subscription or subscription renewal

All games work on Amstrad CPC 464, CPC 664 and CPC 6128 computers unless stated otherwise. You can list and adapt all the Basic files – an excellent way to improve your programming skills.

To order
please use
the form
on page
71

Four cylinder motoring



Rupert Goodwin tries a few laps in Precision's racing machine, the 4010

DOT matrix printers have been around for a while. Like everything else in this business, they've had the traditional price drop, and now the impecunious punter can get a very acceptable near-letter quality printer for around £150. And for most uses, this type works well. But some people will always want more, faster.

The Precision 4010 is the first printer from this company. It is imported from Japan where apparently it is made by Nakajima, a Mitsubishi-like outfit which progressed from aeroplanes to computers.

At first glance it looks like the archetypal dot matrix machine, same off-white plastic case (with the same inky smudges), same set of push buttons and little flashing lights, same instruction manual. Why should it be of the slightest interest to anyone who's seen a printer before?

Take a look under the bonnet. There, residing in linear splendour, are four print heads. Not one, not two, not even three. And these four combine to produce 480 characters a second, or so 'tis claimed.

The theory is that if you send a line of 80 characters to the printer the first head can print one to 20, the second 21 to 40, the third 41 to 60, and the fourth the final 61 to 80. And all at the same time, so whereas one head could only

produce 100 characters a second the four together can churn out 400.

Paper flow

The rest of the printer can go at the same speed as it would need to for just one head, so the mechanics can be simple and cheap. Early fast dot matrix printers of the writer's acquaintance were mostly devoted to moving large amounts of paper fast – the print mechanism itself was almost incidental. And when they went wrong, it could be the work of half an hour to hack through the floor-to-ceiling mounds of paper that filled the printer room.

No such problems with the Precision, which handled paper fed to it in a civilised and mannerly fashion (discounting the badly-positioned socket for the printer lead, which was guaranteed to foul the paper unless great care was taken).

Of course, there are potential problems with a multi-head arrangement. If they aren't all aligned up precisely with each other, horizontal lines and graphic output will look a little jagged. This wasn't a concern with the Precision, and it was impossible to tell from a straight line output where one head stopped and the adjacent head took over.

Concomitant with four heads goes four sets of driver electronics. As a result, the beast needs quite a bit more power, an area I wasn't entirely happy with. At the back of the machine is a large silver heatsink, used to dissipate the watts produced by the power supply in generating the right voltages for the printer's gubbins.

This heatsink got very hot, even when the printer was idle for long periods, and although it never got hot enough to cause a burn, touching it was very unpleasant. Having a bright silver heatsink is a little silly anyway, as any schoolboy knows matt black radiates the therms away with a much greater efficiency. There is an odd bit of power supply design in there somewhere.

Apart from that, the hardware seemed reliable enough. I did have a slight problem with the on/offline button; halfway through a series of graphic dumps the printer refused to go offline at all. I had to switch off and on again, but the problem didn't reoccur, and wasn't serious. Hohum.

Sensible switches?

Another new feature appears on this printer for the first time – the switches. Normally, switches to configure which character set to use, whether to throw in an extra line feed/carriage return

and all that sort of thing are titchy little things hidden away somewhere.

On the Precision they're on the front panel just above the main buttons, hidden away underneath a little panel. They're proper switches too, easily operable by all and sundry without the need for pointy tools. And there's a sticky label telling you just what each switch does. 'Great' I thought. 'Why hasn't anybody thought of this before'. But...

A passing computer dealer saw the switches, and rolled his eyes skywards. "Oh no", he said, "They'll fiddle with the switches and mess it up". "They" are the great printer-buying public (that's you), and my friendly dealer has a low regard for your technical skills. I know you a lot better, and was still thinking "what a good idea" until the time came when I had to use the switches.

The label is clearly marked. The switches are easy to use. There is a pretty picture in the manual. But nowhere could I find any indication as to which way was On and which was Off. In the end I had to do a little experimentation to work it out, and wrote the answer on a sticky label of my own (UP is ON, by the way).

Buffer duffer

I suppose this is as good a time as any to complain about the manual. I'd forgotten just how bad these things can be, and this is a particularly bad example of the art of Janglish. Dealers must get more than a few returns because the users can't understand the manual and think that the printer is faulty.

Why the importers can't get some English author to do a real Janglish-to-English translation I don't know. It would probably save 'em some money. As it is, I defy anyone to understand the explanation of the buffer on page 95.

The buffer is an area of memory within the computer used to store text before printing, and this one is a mystery unto me. It claims to be 8k, that's enough for 8000 characters. Since the printer can accept data at 5000 characters a second, one might presume to be able to send it an 8k document in just under two seconds and leave the printer to get on with it. In practice, the buffer seemed to fill up at just over 3000 characters. Now even 3k is bigger than most printers I use, and is a positive improvement. I would like to know where the extra memory goes. But I think I can guess.

A feature of this printer I didn't have time to explore fully is that the cha-

racter sets are totally soft. Real pushovers, the lot of them. Soft character sets can be redefined from the computer, so that if you don't like the A you can send a set of codes to the printer to change it.

This isn't much good without a program to help you design the characters, but such programs are easily written so the keener owners could have quite a lot of fun. And since the computer needs somewhere to put the information about the character definitions, it could well be using that other half of the printer buffer.

Naff Letter Quality

Another good thing about having soft character sets is that you don't have to use the ones that come built in. With the Precision this is a very good thing indeed. The standard characters are OK, the usual sets of Pica, Elite, various condensed and italic options look nicer than any others I've seen recently, but the NLQ set is abysmal.

I think it looks considerably worse than the standard dotty options. There are no true descenders (the dangly-down bits of g j and y), and the proportions of the lowercase characters are all over the shop. I'd be ashamed to write a letter using it. The fact that you can select the NLQ from a front-panel button with a little red light all its own is thus less wonderful than it could be.

That standard set looking so passable is due in some part to the carbon ribbon, the first time I've seen one on a dot matrix printer. Usually a fabric, ink impregnated ribbon is used, Carbon ribbons give a much more consistent black but don't last as long.

The ribbon in my printer had seen a little use (in the Ed's office) before I got it, but I was disappointed to see it fade as soon as it did.

Precision claims a life of two to three million characters for the carbon ribbon (cost about £8), but I'd put it nearer a week of standard use, this high ribbon wear being a common complaint amongst friends who have bought the same printer.

Fabric ribbons are half the cost. A standard Commodore type will fit, and should last a lot longer. Better keep the carbon ribbon for the occasional use when its impressive blackness is needed.

How fast? Really?

Next on the list of standard issue moans for printers is the compulsory disparity between the claimed speed and that obtained in practice. Like the good old days of "music power" with

hi-fi amplifiers, the figures manufacturers boasts bear little resemblance to those the users squeeze out of the machine.

This printer is fast. Very fast even, but it certainly isn't as fast as 480 characters a second. Even under ideal conditions (full lines of text with few spurious carriage returns) and a condensed character set I could only get about 270 cps.

Only is the wrong word, at that speed the paper pours out of the machine at a rate of knots. But it isn't the published speed. Interestingly, the cover of the manual claims 252 lines/minute, which works out at about 330 cps. Someone somewhere is telling little fiblets.

The graphic speed was also very fast, but it was quite amusing to see just how long some graphics packages take to produce the data for the printer. Slower printers cover up for this, but slap a really fast output on the computer and the joins start to show.

Again, when the carbon ribbon was new and nice and black, the quality of the dumps was very good, but they were the first to show up the ribbon's rapid degeneration.

The speed will also drop rapidly when the stuff to be printed consists mostly of lines of less than the full width of the paper. The fewer characters per line there are, the less the heads towards the right of the printer will get used and the slower the speed will get.

Basic, and particularly poorly commented assembler programs, tend to be quite nasty in this respect, but spreadsheets and account data will love this printer. Indeed our pet accountant used it to produce the monthly figures for a company. In 120 column mode the printer got through the job (some 10 pages of figures) four times faster than the Epson he was used to. However, on looking down the list there were a couple of times where the paper feed seemed to slip for a few lines and cause some nasty overprinting. I couldn't reproduce it subsequently, but then I didn't have 10 pages of account data to print.

Another inexplicability was the dire warning on the carbon ribbon cartridge saying that if you wound the paper backwards you would do irreversible damage to the print mechanism and your guarantee would be void.

Now the way I and everyone I know sets up the paper to start at the top of the page is to wind the paper in until the perforations pass the print head, and then wind back a little to line it all up. According to the warning, this is dangerous.

If it is (and I couldn't see why by peeking at the mechanism) then it

wouldn't be beyond the ken of Oriental man to put in a ratchet to prevent backwinding. They haven't, so I'm confused.

In fact this printer confuses me all around. The idea of using four heads in dischizophrenic symphony is a good one, given that the rest of the printer remains much the same, and for certain types of data it is a solution which works.

Unfortunately, the rest of the design seems to have had little thought applied to it. Lessons have been learned in the past few years by printer manufacturers about little things like manuals, lead positioning and not burning the punter. And the NLQ...

But it's so speedy. Like cars, if they go fast enough you can forgive a certain lack of refinement. The Precision isn't really up to day-to-day letter production, but for people who need to produce lots of data in a hurry it can do the job nicely. Buy one for your pet accountant.

AS Rupert has said in the review, the Precision 4010 saw extensive use in my office before he got his mitts on it. I thought the 4010 was the most impressive printer *Amstrad User* has ever had for review.

Printers are always a compromise of price, speed, noise and quality. You can get cheap daisywheels which are slow and noisy, or fast ink-jet printers which are quiet but expensive.

If you want something which gives good quality, is quiet and fast then you'll have to spend £2,000 on a laser printer. Since the price is usually the constraining factor you then have to look at the other elements of the equation.

I have a 16cps daisywheel, which today would cost around £200. It's fine for letters, but when I have to

print out long listings or articles it's sloth becomes a real nuisance. Until now I thought that I would not be able to justify the cost of a 200cps printer for my own use.

Even at the rate of 270cps the Precision printer is twice as fast as a DMP-2000. It may also be twice the price, but then anything else at this kind of speed is more like four times the price of a DMP.

Because I have a daisywheel printer I can forgive the poor NLQ. The 4010's speed is it's beauty. I like the external switches and can tolerate the inevitable noise. Printers are something you must shop around for; most places give a good discount so although the RRP is quite high you can often haggle.

More details from Precision on 01-330 7166. The 4010 has a recommended retail price of £424.35.

ACU

R.S.D. WILL SEE YOU'RE WELL CONNECTED

AMSTRAD

Printer Cable	
664/464/6128 1m	£8.95
2m	£9.95
Extension Printer Cable	
1m plus power. (PCW)	£9.95
Monitor Extension Lead	
664/6128 1m	£8.50
PCW Cable from Interface to	
Centronics Printer	£12.75
Expansion port extension lead	
6" Single F/M	£10.50
6" Double F/2m's	£14.75
Suitable - 664 & 6128	
Second drive lead	
1m 664 & 6128	£6.95
Cassette lead	£2.20

NEW
PC 1512
PRINTER LEAD



1.8m
£8.75

**RS232
GENDER
CHANGERS**
Avoid modifying or
replacing incompatible cables. n/v/m,
t/f.
Our Price only £8.50

**RS232 CABLES
MODEM LEADS
MADE TO ORDER
FOR ALL TYPES
OF COMPUTER
AND MODEMS**

All above items available from our Australian agent: tech-soft, Shop 37, Grove Plaza, 460 Stirling Highway, Cottesloe 6011 W. Australia

DATA SWITCHBOXES



This new range of slimline switchboxes enables you to switch quickly and easily between micros and printers

RS232 (Serial) metal cased	25-way 'D1' to 2-way	£54.00
	25-way 'D1' to 3-way	£69.00
	25-way 'D1' to 4-way	£79.00
Centronics (Parallel) metal cased	36-way Centronics 1 to 2-way Para	£49.00
	36-way Centronics 1 to 3-way Para	£59.00
	36-way Centronics 1 to 4-way Para	£69.00
	36-way Centronics 2 to 2 change over/Crossover	£72.00

All cables at discount prices when purchasing Data Switchboxes

TELEPHONE EXTENSION CABLE



Plugs into your phone socket enabling you to take your phone up to 50ft away - no need to pay for extensions! Enclosed in neat case with moulded carrying handle. Approval No. NS/2236/3/F/450927. British made.
£9.95

TELEPHONE CONNECTORS

Surface master jack socket	£3.75
Surface Extension socket	£2.50
Dual outlet adaptor	£4.25
Line jack cord 3m	£1.85
4 core cable per metre	.15
BT plugs	.48

DISK HEAD CLEANERS

5.25" Wet type for use with single or double-sided disks, including 6 cleaning sheets £8.95

AMSTRAD

NEW... JOYSTICK SPLITTER

Play with a friend! Splitter enables 2 joysticks to be used independently
ONLY £6.95
Twin port Joystick £6.50

DUST COVERS

PC1512	£9.50	All covers
6128	£7.25	clear with
PCW sets 3	£9.50	Grey piping

MONITOR LEADS

Fidelity (Scart) to: BBC/QL/Commodore/	
Sony/Spectrum 128 & Plus 2/Amstrad	£4.95
Microvitec to: BBC/QL/Spectrum 128 & Plus 2/Amstrad	£2.75
Ferguson to: BBC/Commodore 64/MSX/QL/	
Spectrum 128 & Plus 2/Amstrad	£3.50
Hitachi to: BBC/Commodore 64/QL/Spectrum 128 & Plus 2/Amstrad	£3.50
Sony Kaga to: BBC	£5.95
Green screen to: Commodore 64/BBC	£2.95
Green screen to: QL	£1.95
Green screen to: Commodore 128	£4.95
Phono to Phono	£1.50
Philips to: BBC/Commodore 64	£2.95

DISTRIBUTION SOCKET

4-WAY MAINS TRAILING SOCKET ONLY £9.50

RIBBON CABLE (per ft)			
10-way	15p	20-way	30p
26-way	45p	34-way	60p
40-way	70p	60-way	£1.10

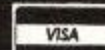
CASSETTE HEAD CLEANERS

Wet type. Set includes Pin-wheel demagnetizer & full instructions £2.50

75p P&P IN UK, Access & Visa accepted. Please add 15% VAT to all orders. Cheques made payable to:

R.S.D. CONNECTIONS LTD Dept AU10, PO Box 1, Ware, Herts

Trade, Educational & Export enquiries welcome **Tel: 0920-5285/66284**



GARWOOD SOFTWARE

☎ Chelmsford (0245) 460788 (3 lines)

Telex: 99468 GARWD G

Freepost: Garwood (Wholesale) Ltd, Freepost, BRENTWOOD, Essex, CM15 0BR

FREE 24 Page Colour Catalogue includes software for IBM PC & Compatible machines



Orders placed before 4pm. despatched same day (subject to stock availability)

SEE US ON STAND No. 1907

PCW Software

FINANCIAL MODELLING:

SUPERCALC 2 £39.95
CRACKER 2 £39.00

WORD PROCESSING:

NEWWORD 2 £59.00
POCKET WORDSTAR £39.95
LOCOMAIL or LOCOSPELL £39.95

SPECIAL:

BRAINSTORM £49.99
ROTATE £24.95

GRAPHICS:

DR DRAW £39.95
DR GRAPH £39.95

ACCOUNTS/PAYROLL:

CAMSOF (from £49.95)
M.A.P. (from £49.00)
SAGE (from £69.99)

Details on application

TRAINING:

TOUCH 'N' GO £24.99
IANKEY £24.95
AUDIO TUTORIALS £9.95

COMMUNICATIONS:

SAGE CHIT-CHAT (from £69.99)

See Catalogue

DATABASE MANAGEMENT SYSTEMS:

CAMBASE 2 £49.95
CARDBOX £59.99
CONDOR I £99.99
dBASE II £99.95
SAGE RETRIEVE OR MAGIC FILER £59.99

PC1512 Software

FINANCIAL MODELLING:

ABILITY £99.00
CRACKER 3 £64.00
SUPERCALC 3 £64.95
PC PLANNER £113.85

WORD PROCESSING:

WORDSTAR 1512 £64.95
NEWWORD 2 £89.00
PC WRITE £113.85

DATABASE:

CAMBASE £49.95
CARDBOX £59.99
CONDOR JR £99.99
dBASE II £99.95
DELTA 4 £89.95
REFLEX £49.95
RETRIEVE £113.85

ACCOUNTS/PAYROLL:

CAMSOF £49.95
M.A.P. £49.00
SAGE £69.99

(See Catalogue for details)

COMMUNICATIONS:

CHIT-CHAT £113.85

GAMES:

AMSTRAD (See Catalogue) £15.95

BOOKS:

PC1512 TECHNICAL REFERENCE £19.95
LOCOMOTIVE BASIC2 USER GUIDE £9.95

Special Offers

DISCS

FREE ACCO LIBRARY FILE WITH EVERY 10 3" COMPACT DISCS

£26.45

10 MEMOREX OR 3m 5 1/4 D/S D/D DISCS IN A LIBRARY FILE

£15.95

10 Lifetime 5 1/4" D/S D/D DISCS IN A LIBRARY FILE
(NO QUIBBLE LIFETIME GUARANTEE)

£9.95

LISTING PAPER

1000 Sheets A4 90g 1pt plain with micro perforations

£14.95 £12.95

2000 Sheets A4 70g 1pt plain with micro perforations

£21.45 £19.95

2000 Sheets 11" x 9 1/2 60g 1pt plain with micro perforations

£15.95 £13.95



ALL PRICES INCLUDE VAT & POSTAGE

Special Offers Close 3rd October



WHY PAY VAT ON YOUR SOFTWARE & SUPPLIES?

NOVAT SOFTWARE 1 has been established to cater for the needs of non-VAT registered customers. Prices include carriage.

SOFTWARE

FREE 20 Page Colour Catalogue available on request.
Full range stocked e.g.

PCW8256/8512

Pocket Wordstar £30
Supercalc 2 £36
dBase II £79
MAP Accounts £129
DR Draw £36

PC1512/1640

Newword 2 £79
Supercalc 3 £59
Reflex £45
Sage Accountant £149
Ability £89

SUPPLIES

DISCS:

10 3" CF2 £25
10 3M 5 1/4" D/S D/D £15
3 1/2" x 1 7/16" £6

RIBBONS:

DMP2/3 £4
PCW (Fabric or Carbon) £4

LABELS:

2000 (2 across) £10

DUST COVERS:

PC1512 or PCW8256 £9 DMP2/3 Printer £4

LISTING PAPER (M/PERFS):

2000 A4 70g £18 1000 A4 90g £13
2000 11" x 9 1/2" 1pt 60g Plain £13

Send Orders to:

NOVAT SOFTWARE 1

P.O. Box 725, Boreham, Chelmsford CM3 3AT



TYPESETTING

with your

AMSTRAD COMPUTER

from £1.50 per 1000 characters

Enter your data onto your computer and key in the data, tables etc. in the position you would wish the final typeset version to be, no need to enter special and confusing typesetting commands, our system requires raw text only.

The text is then sent to our page make-up facility where each individual page is made up to your specifications.

We have five years experience
typesetting from disk.

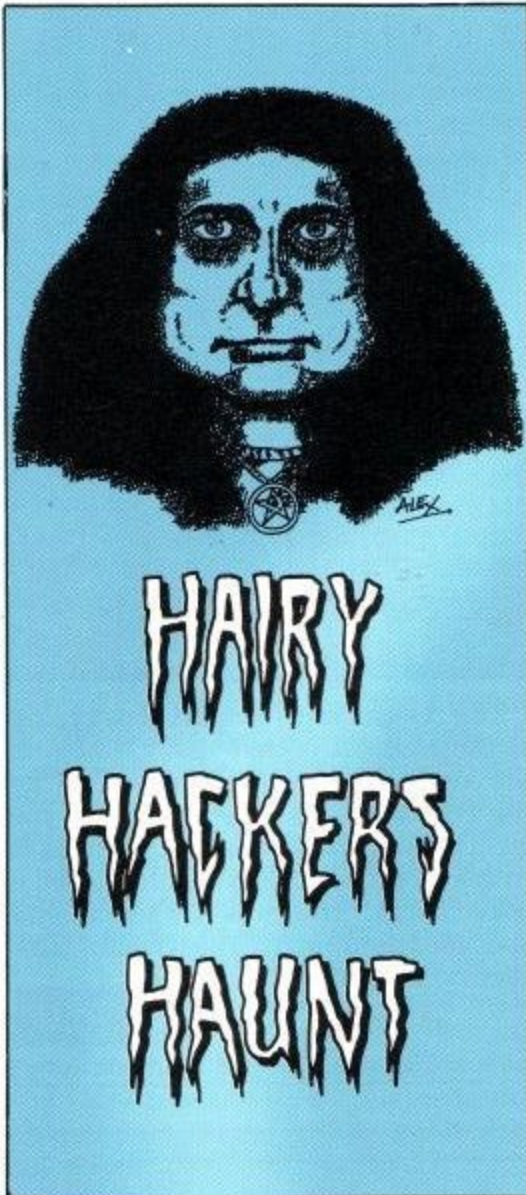
We specialise in
books, magazine typesetting, reports - especially
computer manuals and foreign language manuals.

For more information or if you wish to discuss a specific
job please contact

Kim or Milan at

KAMSET

34 Rayleigh Road, Hutton, Brentwood, Essex
Telephone (0277) 218676



THIS month, there's a fairly short Hairy Hackers section due to illness, details of which won't be gone into, and hopefully won't have to be not gone into again. Meanwhile, the rest of the world is being equally meagre with it's words, and I've only got the one coherent letter to answer.

Timothy Bell is still having difficulty finding the cloaking device without cheating in Elite. Well, not having aquired it by fair means myself, I've asked the Ed, and he has reliably informed me (for once) that you have to blow up a Thargoid space-station and sift through the debris. Easy eh?

Justin carries around with him a little case of discs containing all his useful routines. He does this because he never knows when he is going to need it. It is called a Justin Case.

It appears, from a glance through the mailbag, that some of you lot out there are aquiring 3in floppy discs with no write tabs in them. Well, to make them writable, put a sticky label over the hole in the top left corner of the disc. This write enables it.

Another, neater, way of doing it is to use a small section of styrofoam (not polystyrene; that disintegrates) in the hole at the top of the disc. To remove old labels, use Evostik's Clean Art, or Tippex thinner. Do this in a well



Of human bandage

Vax was asleep, but now he's been shaken and stirred he can present some pretty hot pokes.

ventilated environment away from lit fags and so on. or trouble will ensue.

OK, wee cockup in the GOBOTS poke a while back. The word "huperhody" on line 70 should have read "Hup Tahoody". This is apparently meaningful to somebody, and got damaged in transit to the page.

Justin's first poke of the month is some infinite lives for Ariolasoft's Killer Ring. That's the tape version (is there a version on disc?) (No - Ed.)

Killer Ring killer

Wind forward past ze first file, or PASTE [R] as we hackers say, and run

this pokette:

```
10 MODE 1:OPENOUT "d":MEMORY &103F
20 tot=0
30 FOR n=&A000 TO &A020
40 READ a$:a=VAL("&"+a$)
50 POKE n,a:tot=tot+a
60 NEXT n
70 IF tot<>3069 THEN PRINT"oh dear you
'd better check the data.":END
80 PRINT"Please wait."
90 LOAD "ring",&1040
100 CALL &A000
110 DATA f3,21,40,10,11,40,00,01
120 DATA 00,80,7e,ee,53,12,23,13
130 DATA 0b,78,b1,20,f5,af,32,93
140 DATA 17,c6,c3,32,97,17,c3,aa
150 DATA 16,4a
```

And now a treat for all of those hackers

HACKING

out there who are in on Bondage. Infinite lives and selectable start level for the tape version of The Living Daylights (apologies for the pun in line 90): PASTE[R]

```
10 MODE 1:MEMORY 12345
20 INPUT "Start Level 1-8 ",L
30 IF L<1 OR L>8 THEN GOTO 10
40 tot=0
50 FOR n=&BE00 TO &BE27
60 READ a$:a=VAL("&"a$)
70 POKE n,a:tot=tot+a
80 NEXT n
90 IF tot<>3319 THEN PRINT"oh (oh 7) t
heres an error in the data":END
100 POKE &BE20,L-1
110 LOAD "!",&9600
120 CALL &BE00
130 DATA f3,21,00,96,11,00,a6,01
140 DATA 00,01,00,ed,b0,21,16,be
150 DATA 22,28,a6,c3,00,a6,af,6f
160 DATA 67,22,88,07,32,8a,07,3e
170 DATA ff,32,27,07,c3,00,06,4a
```

Now a proggyette from Justin for one of the few games that don't exactly need a volume control. It's that Paperboy thing. I wish ours was as quiet as this game is.

Anyways, here's both infinite lives and papers for the Disc version of Paperboy. For the boring old tape ver-



sion, where it says "elite.bin", you just type "elite", OK?

Insert disc and run following proggykin:

```
10 MODE 1:OPENOUT "d":MEMORY &2FF
20 FOR n=&100 TO &112
30 READ a$:POKE n,VAL("&"a$)
40 NEXT n
50 LOAD "elite.bin",&300
60 CALL &100
70 DATA 21,09,01,22,7f,03,c3,00
80 DATA 03,af,32,07,19,32,ac,09
90 DATA c3,00,bf,4a
```

Deathride countermeasures

Wot the 'ell is Mounty Micks Deathride? Never mind, here's some infinite lives for the tape version of it from Justin.

PASTE[R] or forward past first file etc. etc.

```
10 MODE 1:MEMORY &207F
20 INK 0,20:INK 1,6:INK 2,24:INK 3,0:B
ORDER 0
30 PRINT"Dont worry!"
40 LOAD "!"res"
50 LOAD "!",&6000
60 CALL &4E20
70 tot=0
80 FOR n=&C000 TO &C033
90 READ a$:a=VAL("&"a$)
100 POKE n,a:tot=tot+a
110 NEXT n
120 IF tot<>5289 THEN PRINT"Whoops! Yo
u'd better czech? the data":END
130 LOAD "!",&2080
140 CALL &C000
150 DATA f3,21,80,20,11,e2,7f,7e
160 DATA ee,53,77,23,1b,7a,b3,20
170 DATA f6,21,00,00,22,b9,61,22
180 DATA bb,61,21,ff,9f,11,ff,bf
190 DATA 01,00,40,ed,b8,21,80,20
200 DATA 11,80,00,01,00,40,ed,b0
210 DATA c3,00,80,4a
```

The reason why I'm a bit slow typing at the moment is that the "O" key on the keyboard has been chewed off by Big Sol. So, every time I want to type an "O" (like then), I have to poke at it with a modified matchstick. It's called a poke-O stick. That was the second and last contribution to the O-pun University. Bye...

ACU

AMSTRAD USERS



Now you can get
your training
direct from Amstrad

When it comes to making the most of your Amstrad Wordprocessors, why else would you turn to for guidance than Amstrad themselves? Clearly we're the undisputed experts on our products - and on passing on their benefits to you.

NEW TRAINING COURSES

Our new one day training sessions have been designed to give you the most comprehensive knowledge of your computer and how to get the most out of it. Unlike many other courses, we insist on no more than eight per training group. And every participant is given his or her own Amstrad Computer to work from.

REAL VALUE FOR MONEY

A full one-day training course at our convenient Newcastle-under-Lyme Training Centre costs just £89 (including VAT). And

the price includes a delicious lunch and refreshments.

BOOK NOW

The training courses which are running now are just one more example of our outstanding after-sales service (an Advanced Amstrad User course is also following shortly).

We'd like to advise you that space is limited. So why not avoid the risk of disappointment and phone Miss Katherine Edge right now on 0782 610011 (ext. 208) to book your places (or for further details).



Amstrad Distribution Ltd
PO Box 299, Newcastle, Staffs, ST5 7QS.

**SCREENVISION
TURNS YOUR
MONITOR INTO
A COLOUR TV!**

AT THE AMAZING OFFER PRICE OF £59.95
Door to Door Insured delivery add £6 INC VAT

USE YOUR AMSTRAD CPC464, CPC664 & CPC6128 MONITOR AS A COLOUR TV SET!

Screenvision is a modern 'State-of-the-Art' TV Tuner which simply connects to your monitor, using the existing lead and converts it to an outstanding colour television.

Screenvision has more features than any other TV Tuner and costs less! Each tuner has seven pre-select push button channel selectors, separate controls for brightness, colour, tone and volume and has built in Speaker, Colour and Automatic gain control.

Unlike other products, Screenvision also connects to a host of other Monitors should you change your system.

DEALER & EXPORT ENQUIRIES WELCOME

**SCREENS MICROCOMPUTERS
& ELECTRONICS LTD.**

MAIN AVENUE · MOOR PARK · NORTHWOOD · MIDDLESEX · ENGLAND
TEL: 09274 20664 TELEX: 929224 SCREEN G



From Mr PS TROTT
SUN 12 JUL 1987 09:48

Is there any way that I can pre-write a MBX before logging on? I have a Pace V21/23 with Commstar.

Yes, if you have Protext, David Foster has written a program to do so. It uses Honeyterm, so you can't really see what is going on, but it works.

From Mr M T MURPHY
MON 13 JUL 1987 21:32

Is anyone else having problems with Locoscript 2, especially with instructions to printer? And I mean the normal PCW printer. I've had a couple of odd things happen on several occasions, but the strange thing is that the fault (if that is what it is) doesn't seem to be consistent.

The first concerns a draft bold which drops the bold on second and subsequent pages, even though the bold is still clearly switched on throughout the document. The second is the occasional failure to obey the Abandon Printing command, and to resume printing with the same mistake (italic inadvertently left on) even after a corrective edit. Any comments gratefully received.

From AMSTRAD PLC
WED 15 JULY 1987 09:14

Could I suggest to these people that claim to have found bugs in Loco 2 that they phone Loco on 0306 887902?. If you just sit on them they will never be fixed. Cliff.

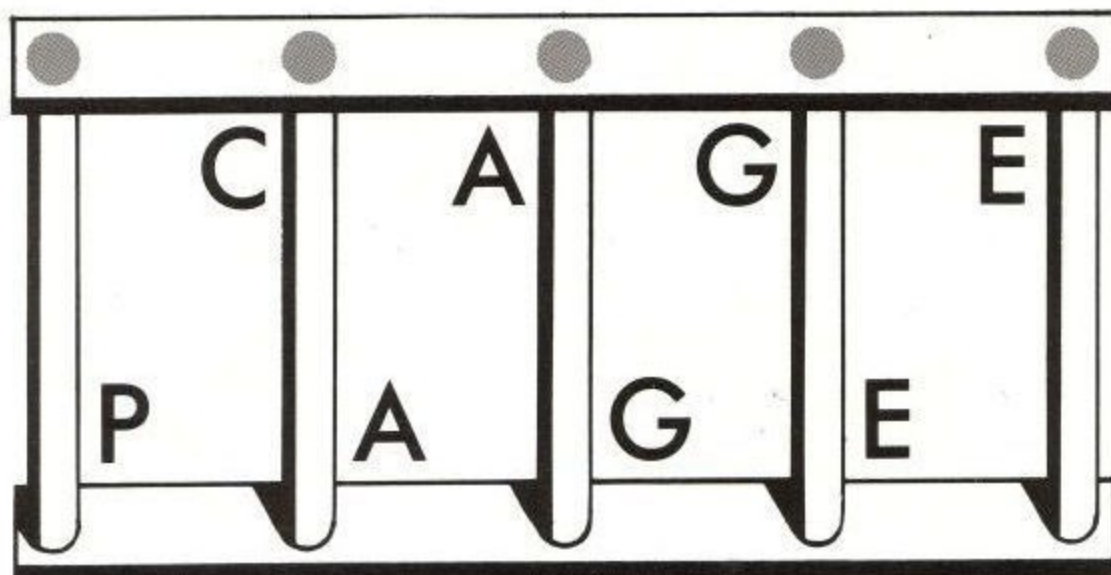
Sounds eminently sensible to me, Cliff!

From MR J H RAWNSLEY
THU 16 JUL 1987 19:29

I did tell Locomotive, but by post – and the reply is that the bugs are all known and the master discs should be returned for a free upgrade. The appearance of the Find/Exchange menu when three keys are pressed at once is apparently a fault of the PCW keyboard. Funny – it never happened with LS1. Signed, John

From AMSTRAD PLC
FRI 17 JUL 1987 18:03

John, I just booted old Locoscript, created a document and pressed Shift, K and L together. This did indeed produce the FIND menu. The reason is that the keyboard is a rectangular matrix and if you push three keys at



The folk on Micronet chew the fat over a number of topics. Can you prepare mailboxes off line? What happens to a file when it is overwritten? Why does an h appear when you press j, k and l together? You too can join the fun, if you have a serial interface and modem. Call Micronet and type *cage# for Amsters Cage. PAUL NEEDS adds his own comments.

the corner of a rectangle you automatically get a fourth.

Try JKL – where did that H come from? (Ian, here's a chance to try your editor, insert "keyboard is a" at the & above). The layout of the keys is designed so that you hardly ever notice the effect and this has been true since the 464 – try pushing JKL on that. It is also true on this PC. (I never touched the H, honest guv).

John is one of the few people I know who has spotted this effect and we've sold over 2,000,000 machines so I don't think it can be classed as an Earth stopping problem. Signed, Cliff

Satisfactory, Cliff? Gosh! Something free from Amstrad! Press three keys and get a fourth one free!

From VINCE MERRELL
WED 15 JUL 1987 18:16

Can I retrieve a file which has been duplicated on a PCW? For example, a file called CARDS.BAS. I saved a different file and called it CARDS.BAS by mistake. As far as I'm concerned, the original file has been overwritten. If anyone knows any different I'd be very pleased to hear their version of what goes on in my CF2s.

From AMSTRAD PLC
THU 16 JUL 1987 18:03

It depends on the software, but generally speaking, if I have a CARD.BAS on the disc then save a file of the same name, the old one becomes CARDS.BAK and the new one is CARDS.BAS. This is certainly true for things like MALLARD and Wordstar.

If something like PIP is used then you have to dig out a directory sector editor. There is a particularly good one

called DU-V86.COM that is downloadable from Leconsfield. (Course, you do need to know a wee bit about directory structure before you can tinker with this sort of thing).

In fact I managed to ERASE *.* on user 1 of my PCW hard disc the other day, and found the program very useful indeed. As it happens I'm in the middle of writing a slightly more intelligent UNERASE program at the moment.

If anyone else has done this then perhaps they can offer a solution to the following problem. If you have two files, both called FRED.TXT, in users 3 and 7 and you erase both of them, what does the unerase program do when it finds there are two zero extents for the same file? And things get even more complicated if you have multiple extent. It's bad enough that the extents for one file are not necessarily in order in the directory so that you have to buffer references to all erased files, sort them into order then go through the list offering the possibility of unerase only on those that have concurrent extent entries. Oh well, no one said it would be easy! Signed, Cliff.

From VINCE MERRELL
THU 16 JUL 1987 18:32

File problem solved! I renamed the file on the disc and then used RESTORE.COM to restore the original file which still had the original name. It seems strange to me that the same bit of the disc was not used again when I saved the duplicated file.

From M SALLEH & R TOUW
THU 16 JUL 1987 06:49

Can anybody tell me if Rodos uses its own rom software and interface? It is possible that if anybody (464 owners)

wants to upgrade their machine by getting a first disc drive they can get it from Rodos as the Rodos interface is cheap. (£29.95 show price, normal retail is £35+) That means good news for 464 owners if it is true. Pity no CP/M implementation. Signed, Mohamed

I don't know, Mohamed. A good question and interesting possibility. Agree.

From MR A P KEELEY
FRI 17 JUL 1987 03:17

Rodos, as I understood, is only a rom. It can either directly replace the disc rom in the DDI/664/6128 or can be used in a rom box. Preferably the latter in the case of a 6128, as otherwise CP/M+ cannot be used. Signed, Andy.

Dave Gorski, who spent some time with the Rodos author, says "Yes indeed it is just a rom, but the black box which I was shown opens up other possibilities". There is a command to change the drive accessed by B, for example.

From VINCE MERRELL
FRI 17 JUL 1987 18:38

Thanks for the help Ian, Cliff, Paul.I

don't want to appear a killjoy but good ol' Mallard has never created a .BAK file for me!! Maybe I've got a duff version with a bug?? It has occurred to me before that this is a smidgin strange but I've never had cause to worry about it before! Any ideas, Cliff?

The method I detailed for bringing back dead files definitely isn't 100%...it's only worked the once for me!! As for the .BAK files I'm flummoxed. Mallard certainly doesn't make a .BAK file if you erase a file or save a different program under a name already in the directory!

Maybe the old adage of a little knowledge is a dangerous thing or something to that effect, rings true after all! Signed, Vince

Vince, I can't speak for Mallard, but in Amsdos, the following happens if you erase a file, it disappears from the directory, but it can be unerased if you have not subsequently written to either that segment of the directory or any of those sectors of the disc which originally contained the file.

When you copy a new file with the same name as a file already on the disc, the old file is renamed 'filename.bak' This can be undone by renaming one of both files. CP/M programs often have a flag which you can set to allow auto-

matic look at your manual, pending authoritative advice from a PCW expert.

From ROBERT O'DONNELL
SAT 18 JUL 1987 12:04

The Keyboard matrix problems: this *should* be common to all computers, coz all computers use a matrix, but some manage it better than others that is, taking into account other keys that are currently pressed - two key rollover! Only if you deliberately look for a certain key will you get problems. (Beeb is like this JKL (No H!)) Signed, The Mad Sysop.

In all the time I've been working with the CPC, I've never had a key come up due to "matrixing".

From MR J H RAWNSLEY
SAT 18 JUL 1987 13:54

On page 314 of the Mallard Basic manual it says concerning SAVE: "If a file of that name already exists it is deleted". That seems pretty conclusive. Cliff, thanks for the explanation of the four key effect. I guess the reason it's taken since October 85 to notice it is that my typing is getting worse!

ACU

ROMANTIC ROBOT

present



Multiface two

NO1 AMSTRAD MULTIPURPOSE INTERFACE with

- 1) FULLY AUTOMATIC, UNIVERSAL and PROFESSIONAL back-up facility to tape and disc for Amstrad CPC 464, 664 and 6128.
- 2) MULTI TOOLKIT to study/modify/develop software/hardware
- 3) 8K RAM EXTENSION
- 4) RESET BUTTON for "warm" reset

All at an AMAZING PRICE of £46.95!

"THE CLEVEREST HARDWARE DEVICE AT PRESENT"

Amstrad
Action

**GOLDEN
SCREWDRIVER
Award**



"AMTIX NOV 86"

MULTIFACE TWO is UNIQUE both in unbeatable value and features:

- * It is the only truly automatic back-up device - the programs are RELOADED exactly as they were STOPPED and SAVED, incl. the colours and sound - no other peripheral can RESTORE COLOURS AUTOMATICALLY and some programs will not RELOAD & RUN properly then - BEWARE! and use MULTIFACE TWO only.
- * Does not occupy any part of the Amstrad RAM and requires
- * No additional software - has internal 8K ROM and 8K RAM.
- * STOPS ANY program ANYTIME. You can just PAUSE or SAVE or use MULTI TOOLKIT, etc. Programs will CONTINUE from the same point when you RETURN or RELOAD next time - everything is FULLY and AUTOMATICALLY RESTORED.
- * MENU-DRIVEN, fully ERROR-TRAPPED with prompts and one-touch commands turning complex tasks into a trivial procedure - all you need to do is to push the button and select from the menu:
SAVE - to name & SAVE a program to disc, tape or hypertape.
RETURN - to CONTINUE a program after any operation.
JUMP - not to return but to JUMP to another address, say to your own routines in the 8K RAM extension.
TOOL - to access MULTI TOOLKIT routines.

- * MULTIFACE 2 is EXTREMELY FAST in both SAVING & RELOADING - its INTELLIGENT COMPRESSING and TURBO saving to disc/tape makes a standard 64K program reload typically in up to 20 SECONDS from disk - other products take 4-5 times longer! - or just over 5 minutes from tape. The most EFFICIENT COMPRESSING also results in minimal space used on disc or tape.
- * MULTI TOOLKIT is the only existing combination of hardware and software capable of displaying & modifying EVERYTHING you may wish to know about a program and current state of computer. You can PEEK/POKE the entire AMSTRAD contents incl. extra 8K RAM, Z80 registers, colours, etc. You can open a WINDOW and scroll through 56 byte blocks in decimal, hex and even ASCII representation (ie. everything seen as text to reveal messages, etc) with full on-screen editing. You get INFO on screen mode/start address, interrupt mode, no. of characters per line, horizontal sync. position, lower and upper ROM and RAM bank states, ROM type, etc. And ALL can be changed...
- * COMPATIBLE with expansion ROMS, RAMS and any other devices.
- * PLUGS DIRECTLY into CPC 464, 664, 6128 - no need for extras.
- * Save PROGRAM or a full 25-line SCREEN ONLY.
- * THROUGH extension BUS for connecting other peripherals.

Multiface two THE ESSENTIAL AMSTRAD CPC COMPANION

Please send me a MULTIFACE TWO at £46.95 plus p&p - UK £1.00. Europe £2.00. Overseas £3.00

I enclose a cheque/PO for £ or debit my No. Card exp

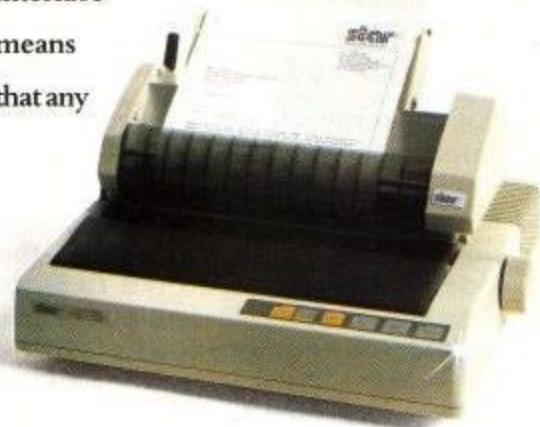
Name & address

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

Half a dozen steps to the right decision.

When you've seen one printer you really haven't seen them all. That's why, when you're trying to choose your first or your next, you really need all the help you can get. Here are a few steps to get you started.

1 Compatibility. You needn't worry about matching any of our six 9-pin printers with your present system. A simple slot-in interface means that any



Star printer can be used with virtually any terminal or PC set up. And, equally important, the software command sets are switchable.

2 Value. Getting more doesn't mean you have to pay more. All our printers are proof of that. Whatever your budget, the Star 9-pin printers start from just £248 for the NL-10 going up to £589 for the NR-15.

3 Simplicity. The Front Control Panel on all Star business printers gives you total control at the touch of a button. Selecting draft or Near Letter Quality printing, print pitch, margins and paperfeed control are sheer simplicity. No mess, no fuss and no more fiddly DIP



switches for all your usual daily needs. All our machines have semi-automatic single sheet feeding too. Simply drop your page into the top, press a lever,



and the printer advances it to the correct position ready for printing.

4 Performance. Star's 9-pin range has a choice of two paper widths, either 10" or 15" (80 col or 136 col) and three performance levels 120, 180 and 240 cps for draft quality listings, state-

ments and spread sheets. They also have very respectable Near Letter Quality speeds of 30, 45 and 60 cps for correspondence and more important documents. In either mode, Star's print clarity is envied by our competition.

5 Support. When you buy a Star

printer you buy superb back up too. We've a National three-level support system which operates through all our registered Star dealers backed by the

finest distributors in the country, so you're in good hands. Should you need any help at any time, our dealers will give you all the friendly, knowledgeable assistance you need.

6 If you still can't quite make up your mind, fill out this coupon. We'll send you our brochure so you can discover even more about the remarkable Star range of printers for business. We'll also tell you about our range of 24-Pin printers too. Or just call Belinda on 01-840 1829.

Name _____
Company _____
Address _____

Postcode _____
Telephone _____

AU 10

THE
Star
PRINTERS FOR BUSINESS

Star Micronics U.K. Ltd. Craven House,
40 Uxbridge Road, Ealing, London W5 2BS.
Telephone: 01-840 1800.

A division of Star Micronics Co., Ltd., Japan.



Simon Rockman unlocks the Arcade antics of US Gold's latest game

GAMES which require you to think on the move have always been my favourites. I have often woken up to blame Boulderdash for the late night which left me only a few hours in which to sleep – I've even been known to get up in the middle of the night to play the game.

Now I've found something new to cause more sleepless nights. A game with all the same qualities, an equally cute character and even more fiendish puzzles.

Solomon's Key is a conversion from the Tecmo arcade machine. The Amstrad version was written by long-standing ACU contributor Chris Wood. His company Chameleon Software, was commissioned to produce the game by Probe Software.

The Amstrad version of Solomon's was written straight from the arcade machine, with the Spectrum version being converted independently. As all Amstrad gamers are aware, this leads to the best end result, full size screens and better graphics.

Chris is a man who knows the CPC and it shows through in playability. This is a conversion with panache, right down to the anti-aliasing mode 0 character set.

From Chameleon to Probe to US Gold

Probe is Britain's best known conversion house, producing games for the big companies, like Elite and US Gold. Sometimes the games are written in-house, sometimes a programmer is found to produce the work externally.

This often means finding one person to design the graphics, another to code the music and a third to write the game. In the case of Solomon's Key, Chris Wood wrote the game with a little help from another friend of ACU – ZZKJ.

The music and sound effects were programmed by David Whittaker, who has done a good job with sonorous bells, atmospheric zaps and a couple of jolly tunes.

Into the catacombs

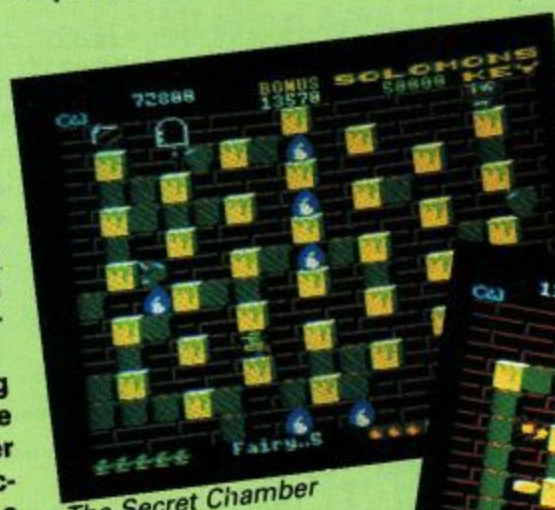
The plot casts you as an intrepid explorer, searching for Solomon's treasure. I knew that he was a wise king, but I had not been aware of any treasure until now. Still, I suppose it is fair to assume that a Middle Eastern monarch would have a few trinkets lying around.

You are a magical explorer with the ability to cast spells. These usually manifest themselves by causing stone blocks to appear and disappear.

These blocks form your stepping stones, and by building a path to the gems you can negotiate the monster infested rooms. In addition to collecting treasures you have to pick up a key to open the door out of each screen.

All this is done against the clock: The less time spent on each screen, the bigger the bonus. You will need to be pretty dexterous, and I would recommend that you put down the joy-

stick and learn to play on the keyboard. For a better idea of what goes on in the binary world it is perhaps advisable to look at its denizens.



The Secret Chamber



The blue carp-like head projects from a wall and spits firebolts. Jolly vicious it is too. They cannot be killed so either run past very quickly, or build up a defence of blocks and get by while the blocks are being destroyed.

Fortunately there are few grifins in the game. They are nasty, shooting fire as soon as you appear a level above or below them. The monster will run towards you as it fires. The best way to deal with this foe is to destroy the block below it.

The first monster you encounter is the strong silent type. He walks slowly but steadily, marching up and down. If you place a block in front of him he'll punch it hard enough to destroy the obstruction with a single blow. To kill him you need to sweep the block from under his feet.

The blue, spike-like creatures run around the edge of the screen and ledges. They are very fast and extremely nasty. The movement pattern is totally predictable, so you can build traps for them, closing the top when they roll around. This is the key to level eight. Spikers can be killed with a fireball, but getting the ball and spiker to meet without getting killed is tricky.

The nasty dragons and ghouls appear from doors, strategically placed to guard keys and exits. Often they are just there to stop you from putting a block over the square.

A pretty feeble monster, easily avoided. These dog-like creatures usually occur in pairs. They are quite swift-footed but are usually located out of the way.

OK all you Ami Stewart fans, ring this bell and Peter Pan's little friend will appear. When you pick up the bell a fairy comes out of the exit door. Ten fairies give you a bonus life, but you need to catch her. You do believe in fairies - don't you?



These can be stepped on. By casting a spell they can be made to appear or disappear in front of you, or by crouching in front and below you. Blocks can be removed by casting a second spell or by headbutting them twice. Treasures are often hidden behind blocks - it's worth removing some of the stones which seem to play no part in the game.

The exit is highlighted at the start of the game by a circle of stars. When you have picked up the key the door swings open. The higher the level, the harder it is to get to the door. If the sheet seems really easy then there are points to be collected before making for the exit. If you are killed after collecting the key the door stays open.

You don't need to be 18 to get the key to the door. There is no difference between the round and square handled keys, but watch out for the magic blue key - cast a spell and some of the harder-to-get-at red keys turn Tory. This lets you into a bonus room, with more goodies to collect and more baddies to avoid.

Your main weapon. Up to three fireballs can be carried. When you press enter or the second fire button on an adapted joystick the ball rolls around the edge of the screen and will destroy the first alien it touches. Be careful, they take a second or so to get going and only have a limited life. If the ball burns out before it hits anything your shot is wasted. Only one ball can be fired at any one time.



A sparkling flask of liquid refreshes the parts other flasks cannot reach. It gives you an extra life.

The magic scroll is very useful, and incredibly rare. You only get a scroll by killing a monster, and the odds are 64 to 1 against. I've spent a week playing Solomon's Key and have only seen a scroll once. The powerful parchment extends your fireball carrying capability. Pick up one scroll and you can carry four fireballs. A second scroll (pigs might fly) would give you the maximum of five fiery shots.

These are more powerful fireballs: They are not extinguished when they have killed a monster, but continue rolling around the screen until the ball burns out naturally. Both types of fireball are shown in your store at the bottom of the screen. The longer-lasting type are bigger.



Our Hero

BARGAIN OFFERS

Save £30

EMR Midi Interface. Save £30 Music Man Mike Beecher has a box of tricks which allows your CPC to control Midi instruments, anything from a simple synth to a whole electronic orchestra. Normally the interface and software would set you back £129.95. To you, my son, a bagatelle at £99.95.

Name
Address.....

Offer closes on November 30 1987. Please send your order to: Electromusic Research, 14 Mount Close, Wickford, Essex, SS1 8HG.

Save £5

HiSoft Pascal 80 Compiler. Save £5. Parlez Vous Pascal. Posh programming for your computer. The HiSoft Pascal compiler has been around since the dawn of the CPC. It offers both a way to learn the favourite language of graphics programmers and educational establishments, and a useful tool for program development.

HiSoft Pascal 80 usually costs £39.95 but you can save £5 and buy the disc for £34.95. Pascal 80 is disc only. It works with CP/M 2.2 and CP/M plus.

Tape ☐
Disc ☐
Name
Address.....

Offer closes on November 30 1987. Please send your order to: The Old School, Greenfield, Bedford, MK45 5DE.

Save £5

Rombo Rom Box. Save £5 A sideways rom chip is a wonderful way of storing a program. The software sits tucked away inside your computer until you need it and then comes to your aid in a microsecond of need.

To add roms to your machine you need a rom box, and the best one around is from Rombo, it will accept up to eight chips. Normally such a luxury would cost you £34.95, but by using this Amstrad User coupon you need only pay £29.95. That will do nicely.

Save £10

Arnor's Maxam Assembler. Save £10 Maxam is a simple to use yet powerful assembler, ideal for knocking off a quick routine and easy enough to use to be perfect for the machine code beginner. The rom offers instant loading and a large area of memory for developing programs. The disc usually costs £27 and the rom £40, but you can save £10 on either with this coupon. Availability of the rom version is subject to the availability of blank eproms. Please indicate which version of Maxam you would like.

Rom ☐
Disc ☐
Name
Address.....

Offer closes on November 30 1987 Please send your order to: Arnor Ltd, Protex House, Wainman Road, Peterborough, PE2 OBU.

Save £16

Rainbird programs. Save up to £16. Super generous Rainbird has not one, not two but three deals to offer you the best bits for your CPC. You can save £6 on the Advanced Music System (disc only), which usually costs £29.95.

There are discounts on games too. You can save £5 on Silicon Dreams, the huge space adventure, and a further £5 on Jewels of Darkness, a trilogy which includes a classic cave (the one adventure everyone should play). These normally cost £19.95 on disc and £14.95 on tape, but you can have the disc for the usual tape price or the tape for a mere £9.95. Tick the boxes to indicate which program you want, you can tick as many as you like. Please make cheques payable to Amstrad Computer User.

Advanced Music System ☐
Jewels of Darkness ☐
Silicon Dreams ☐
Name
Address.....

Offer closes on November 30th 1987 Please send your order to: Rainbird offer, Amstrad User Magazine, 169 Kings Road, Brentwood, Essex, CM14 4EF.

Name
Address.....

Offer closes on November 30 1987 Please send your order to: Rombo Productions, 107 Raeburn Rigg, Livingston, EH54 8PH.

APPLICATIONS ADVICE

By **DAVID
FOSTER**

This is the first of what I hope will become a regular column in which I will try to solve your problems and questions about serious software: Programs such as word processors, spreadsheets and databases and utilities. Please don't ask about games and adventures as they are already covered very well in other parts of the magazine, but more importantly, I am hopeless at them.

When you write, please give all the relevant details, but don't send discs or tapes. It is no good just saying "I use XYZ program and it won't print" - We need to know

what model of computer and printer and the version of the program being used, as well as details of any accessories connected to the computer.

If you have any questions or problems, just write in to me, care of ACU and tell us all about it. If I don't know the program, I shall find someone who does. I cannot

answer questions directly, so all replies will be through these pages.

To start the ball rolling, I shall answer one or two questions that have appeared in recent ACU letters pages. This month: Mini Office II communications, sending codes to the printer, and redefining characters using the >OC command in Protext.

Communications with Mini Office II

ACU has received numerous letters asking how to use the communications option in Mini Office II, as readers are experiencing problems using it with their Serial Interface.

The answer is simple, though not at all satisfactory. The comms part of Mini Office II can only be used with the original Amstrad RS232 interface, not the current one made by Pace, the earlier Pace interface or any of the others available.

The reason is that Mini Office makes use of commands which are only available in the original Amstrad SIO Driver rom. If you aren't sure which interface you have, try typing:

ROMCAT,-1

If you get a message saying "Amsoft presents" and a list of names, then you have the original rom and it ought to work with Mini Office II. If you get the message "Unknown Command", then you are out of luck, as you haven't got the required interface.

It is not even possible to get the necessary rom as a spare part. That would have allowed you to use a rom box and either the current Amstrad Interface or the earlier Pace Interface. If you already have either of these interfaces, there would seem to be little need to use the Mini Office comms program anyway.

Redefining printer characters

In a recent letters page, someone was having problems using the >OC stored command in Protext and thought there

was a bug in the program. From his description, the problem was simply that he was attempting to use the command to do things it was never intended to do.

The purpose of the >OC stored command is to send printer control codes directly to the printer when the stored command is encountered during printing. The intention is to use it to send codes to change printer settings, not to output characters to the print head directly.

The advantage over using printer control codes is that there is no limit to the number of codes you can send.

For example, it is possible to redefine a number of the characters on most printers so that they will print characters of your own design. This usually requires you to send a number of codes to the printer to tell it the matrix (pattern of dots) you want it to print and what character you wish to redefine. You usually have to tell it to copy the normal character set into the printer's ram, beforehand.

The reason the writer of the letter thought that there was a bug in the command is that he was attempting to send the matrix codes directly to the printer head. This will not give the required results.

In order to use >OC you have to use it on a new line. The upshot of this is the character appears at the start of the next line rather than where it was required in the text.

The correct way to produce your own characters is to use the >OC command to send instructions to the printer to redefine specific letters in the printer's own ram. When these characters are sent to the printer by Protext, the redefined character matrix will be used by the printer.

The majority of printers have at least

some redefinable characters in their character set and the correct procedure is as follows:

First select a character to be redefined, which would not otherwise be used in the document. Then use the >OC command to send the codes required to activate the redefinable character set, and send the codes to redefine that character.

You can use as many >OC commands as necessary to redefine more than one character. When you want to use the redefined character in the document, you use the key for the character that you defined. This will appear as the original character on-screen, but when printed, the redefined character will appear.

Some printers have only a few characters which can be redefined. These are frequently characters such as the semi colon, colon and equals signs, which you might also want to use in the document. Again, there is a solution. These printers contain codes to turn on and off the redefinable character set, as and when required.

Having defined the characters with the >OC command it is necessary to define one of the unused printer control codes so that it sends the "on" and "off" codes for the redefined characters. This is done with the SETPRINT option to redefine the printer control codes. The codes for "on" and "off" should be entered for one of the unused codes and saved as part of the printer driver option.

Every time you wish to use the redefined character, wrap it with the selected printer control code, before and after. When the document is printed, if the character is found on its own, the normal character is printed.

If it is preceded by the printer control code, it turns on the redefined character.

ter set and the redefined character will be printed, before the following code turns the set back off again.

For example, I use an Epson LX80, on which it is only possible to redefine the colon, semi colon, question mark, equal signs and the greater than and less than characters. If I want to redefine the = symbol to print a box with a plus sign in it, I use the following OC commands at the start of the document:

```
>OC 27,"",0,0,0 ; rem copy char set to ram
>OC 27,38,0,61,61,0,127,0,73,0,93,0,73,0,127,0,0 ;+ codes
```

I redefine the printer control code v with SETPRINT to give :

```
27,37,1,0 for 'on' and 27,37,0,0 for 'off'.
```

To print the box symbol, I merely wrap an equals sign with the printer control code v. Justification is maintained and the correct symbol printed. Without the v printer codes, the equals sign is printed.

A similar effect can be achieved with Tasword by following a slightly different approach. You must select the "Into Basic" option from the menu, then insert a line or two of Basic, as follows:

```
5 PRINT#8,CHR$(27);";";CHR$(0);CHR$(0);CHR$(0)
6 PRINT#8,CHR$(27);CHR$(38);CHR$(0);CHR$(61);CHR$(61);CHR$(0);CHR$(127);CHR$(0);CHR$(73);CHR$(0);CHR$(93);CHR$(0);CHR$(73);CHR$(0);CHR$(127);CHR$(0);CHR$(0)
```

This has a similar effect to the >OC commands in Protex, but will send the codes to the printer when Tasword is resumed with the RUN command. You also have to redefine one of the printer control codes with the on and off codes in a similar way to Protex, in order to be able to wrap the character as described above.

Apart from that, the operation is the same as for Protex. You may find that any right justification is spoilt as Tasword does not automatically make allowances for printer control codes when justifying text.

Sign of the times

Tas-sign is a program designed to create signs. The idea is that it can be used to create signs and posters in a variety of styles and sizes, which can then be printed on a dot matrix printer.

Running under CPM Plus, Tas-sign is only suitable for use with the CPC 6128 and the PCW range of computers. The program was used on the 6128 for this review, though I also tried it on the

Font: STANDARD		Italics: off		Height: 60	
Orientation: landscape		Spacing: prop.		Gap: 5	
Strike: single		Underline: off		Border: 0	
Density: double		Reverse: off		Stretch: 100	
Meshing: on		Centering: off		Hatching: none	
Press ALT 0 to change these Options.					
Height:	ABCDEFGHJ				
Gap:					
Height:	abcdefghij				
Gap:					
Height:	123456789				
Gap:					
Height:					
Gap:					
Height:					
Gap:					
Total:	Line: 3	Col: 10	Insert: on	COPY=scroll help	STOP=print
TAS-SIGN (C)					

Figure 1: Tas-sign options screen

PCW and there appear to be no differences.

You need a dot matrix printer which offers a graphics mode, which means most of the currently available printers. Tas-sign is supplied on a single disc and comes in their customary jacket, complete with a 30 page manual.

Documentation

The manual is clearly written, if a little strange in its order of presentation. It starts with an explanation of how to create a working copy of the disc then launches straight into a tutorial, with a recommendation to read the following two chapters for details of the commands.

A READ.ME file on the disc prints out five pages giving details of features not mentioned in the manual. Despite the order, it is clear, easy to understand and shouldn't cause anyone any problems.

Installation is simple, the contents of the disc are copied on to another disc and a configuration program run to select a suitable driver from a list of printers. There is an option to create your own if you are unlucky enough to have a printer not covered by the supplied drivers.

The display consists of a deep status window at the top of the screen showing global settings of all the options. These are the settings which, unless overridden by other commands, will determine the appearance of the final printout.

Help is available in this window by pressing COPY. The remainder of the screen is divided into thin horizontal boxes for lines of text. At the very bottom is a status line showing details of the line and column being edited.

In its simplest form, all you need to do is type in the wording you want on your sign, using a separate box for each line, then press Escape to print it. A number of text editing commands are available and anyone who is used to Tasword will feel quite at home.

The values of the global settings displayed in the upper window may be changed by typing Control+O, then moving around the options.

Settings which may be changed in this way include the font (style of lettering), the height and width, whether solid or hatched (patterned) letters, left, centre or right justified text and whether it should be underlined or italicised.

You may print either across or sideways down the length of the paper, which allows larger signs. An option mentioned in the READ.ME file, provides a mirror image.

The density of print out may be varied by selecting from single or double strike, single or double density. There is also what is referred to as meshing, which is one or more further passes over the line, filling in the spaces between the dots already printed. The denser printouts give the best results, but take considerably longer to print.

Interlocking letters

Spacing between characters may be Constant, Proportional or Kerned. With Constant spacing, the letter l, for example, is very much narrower than m, but occupies the same character width as any other letter.

With proportional spacing, allowances are made for the differing widths of individual characters, so that the space between each character is the same.

Kerning goes a stage further and

makes allowances for the fact that certain characters, due to their shape, may actually overlap each other without touching. An example of this is the combination of A and W.

When kerning is in operation, those characters which might happily overlap without touching are closed up. This usually gives the best results.

As well as the global settings, it is possible to specify the height of individual lines of text by typing Control+H while editing text and specifying a dimension, which will then be used from that point. The gap between lines may also be specified in the same way, by pressing Control+G.

All dimensions in Tas-sign are specified in terms of the number of dots that will be printed. For example, on the CPC the maximum number of dots height on one pass of the printer is seven dots, so a height of 63 would give a letter of a height equivalent to seven passes of the print head, with the paper just advancing enough to clear the previous line. The actual dimension will vary a bit with different printers, but on an Epson LX80, a setting of 60 gives a character height of about 1.5 cm.

In addition to the global settings described above and the adjustments to height and gap, it is possible to set some, but not all, of the remaining options in the course of a line by means of embedded commands.

Embedded commands are instructions which are typed in at the same time as the text, but which, when recognised by the program are acted on as commands, rather than being printed as text. The way that Tas-sign recognises an embedded command is by it being wrapped with backslash symbols (The key immediately to the left of the right hand shift key). For example, the embedded command to turn italics on is 'I+' and off, 'I-', so that typing:-

"The word after the command is |I+|Italic |I-|but this isn't."

would have the effect of putting the word *Italic* in italics, whilst the remainder of the line would be printed in the current character set.

The main features which may be changed in this way are the fonts, italics and underline, kerning, hatching and the alignment of the text to left right or centre.

Every silver lining has a cloud

So far we know how to use Tas-sign, but we still don't know what it can do and what its limitations are. Well there are a number, many of them brought about by restrictions caused by the printer. The maximum width that can be printed is determined by the number of dots across the paper that can be printed in by your printer. Typically this will be from 480 to 640 dots. This

affects the maximum width of the text when in Portrait mode and the maximum height of the characters, or number of lines when in Landscape mode. When in Portrait mode, you may have to juggle height of character against width in order to get the words you require on the line.

There is also a recommended minimum size for the characters. Results using dimensions down to about 20 can be used with some of the fonts, but the results may be unpredictable. Below 60 dots Tasman don't guarantee the correct appearance of the characters, though in many cases the result is quite acceptable.

The largest size of character I managed to print in Landscape mode (down the length of the paper) gave characters about 14.5 cm. tall. The best feature about Tas-sign is that unlike most programs which give more jagged letters the bigger they get, there is no sign of this and all characters are well rounded and diagonals are about as

Figure II: The largest and smallest - recommended sizes

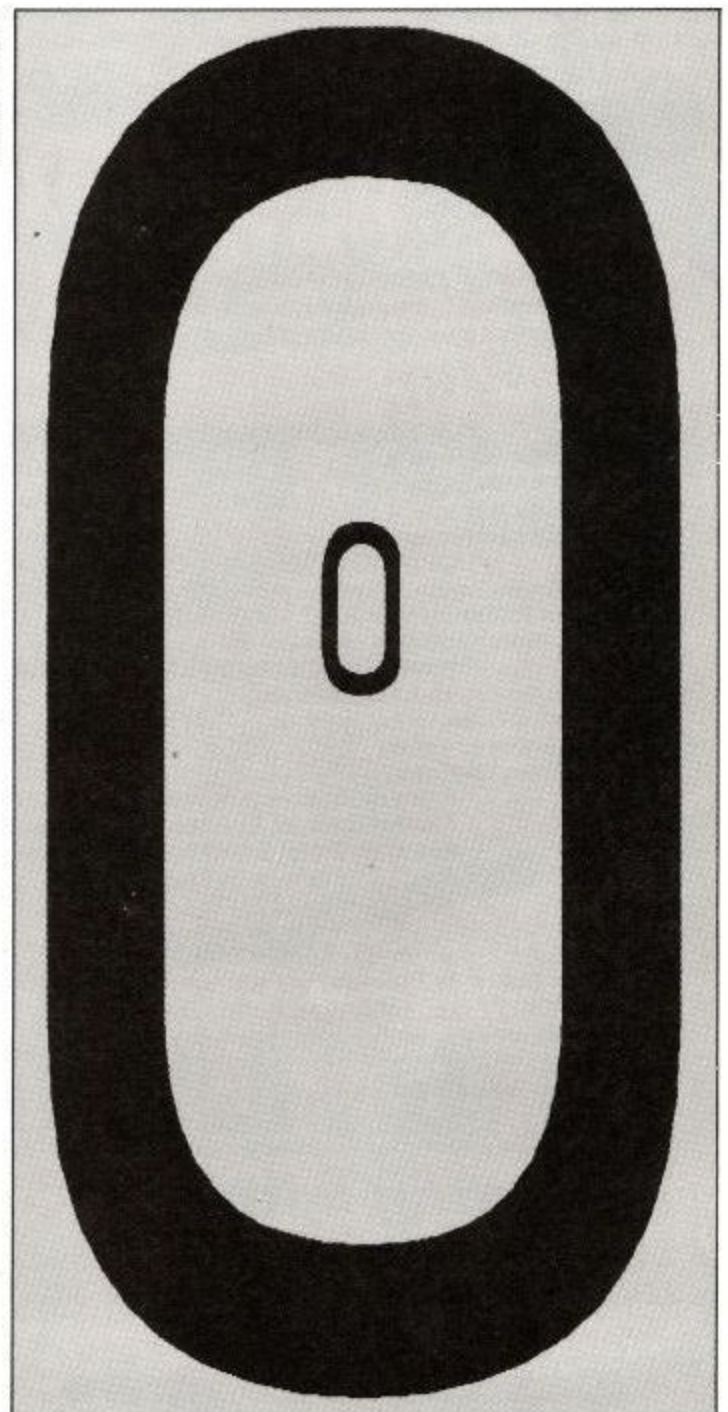
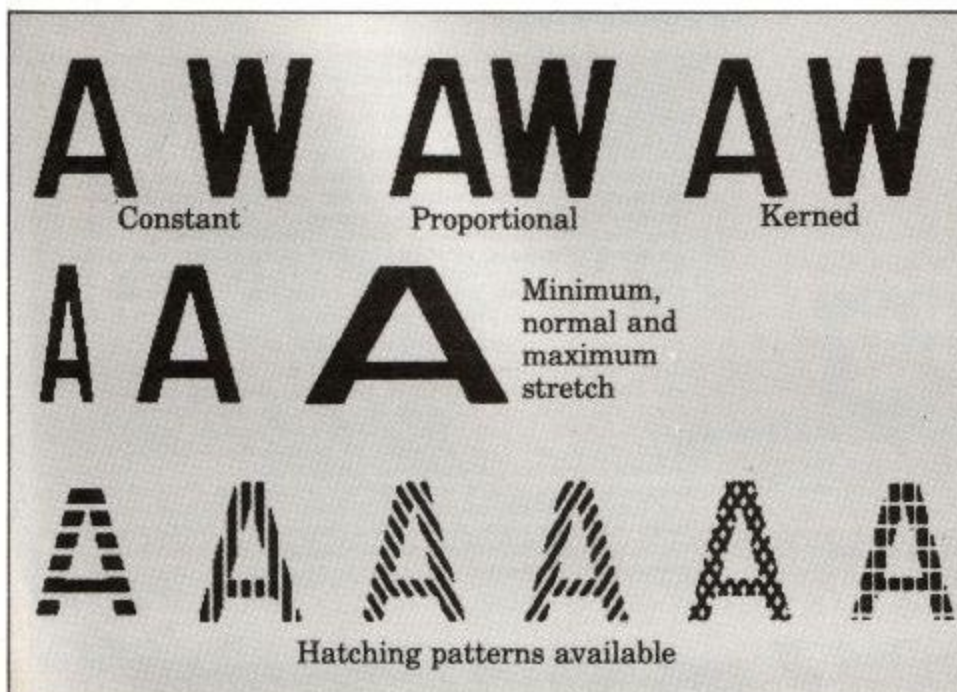


Figure III: Type styles



ABCD abcdefg
 ABCD abcdef
 ABCD
 ABCD abcde

Figure IV: Fonts available

straight as you could hope to get with a dot matrix printer.

At the moment, another restriction is that Tas-sign is supplied with only four different fonts, although any of these may be used in normal or italic form, black on white or inverse, solid or filled with one of a number of patterns and

the height and width may be adjusted. Apparently it is not a practical proposition for Tasman to supply a utility program to enable you to create your own fonts, due to the complexity of the process, but I gather that alternative fonts will be available in due course.

The program is fairly well presented,

but somewhat slow to write to the screen. You seem to wait ages whilst it draws the editing screen. It is also a little untidy in places, with incompletely drawn lines and when first loading, the messages and information cause the screen to keep scrolling up, which makes it difficult to read what it says.

In my opinion it displays far too much information on screen about what it is doing at each stage, all of which must contribute to slowing the program down.

I encountered one or two slight inconsistencies with the character sets, but understand that these have all been corrected in the current versions of the program.

If you need a program to print out signs and posters and don't require it to do anything else, then Tas-sign is what you are looking for. The end result is excellent and would be hard to beat.

That's all for this time, as I have run out of space. I hope to answer one or two questions about the Masterfile Database in the next column, but in the meantime, put pen (or printer) to paper and send in your problems.

ACU

BrunWord

"BrunWord offers considerable flexibility... excellent spelling checker... very easy to use datafile" - CWTA
 "BrunWord is a very competent programme" - AMTIX

*** SUPERB WORD PROCESSOR PROGRAMME ***

- ** Amazingly fast response
- ** Unbeaten text appearance
- ** Full printer features
- ** Displays true print format

*** LIGHTNING SPEED SPELL CHECK PROGRAMME ***

- ** 30,000 word English dictionary
- ** Checks 2500 words per minute
- ** Automatic correction and instant look up

*** INTELLIGENT DATAFILE PROGRAMME ***

- ** Alphabetical, numerical or date sorting
- ** 20 fields with user defined headings
- ** Intelligence mail merge
- ** Intelligence label printing

All three Programmes together on 3in Disc £25.00
 BrunWord+BrunSpell Tape £14.50. DataFile Tape £10.00
 For CPC464, CPC664 or CPC6128 - State which machine
 (ask for our free 8 page booklet)

7 Days Free Trial

Ring our hotline 6-9 pm and we will send you Brunword for 7 days free trial (CPC6128 disc version only). We are confident that once you have our programme you will not want to be without it.

or send a cheque/postal order to:-

Brunning Software

34 Helston Road,
 Chelmsford, Essex, CM1 5JF.

Telephone (0245) 252854 (24 Hours)



BrunWord

BrunWord is recognised as unbeatable with its superb system of justifying text, it has an excellent editor, a continuous "see what will be printed" display, comprehensive printer facilities and responds almost instantly to all routines.
 * True insert and Overwrite * Touch typing speed * Fast block save, move, copy, insert & delete * Quick local editing with word delete/undelete * Adjustable margins and TABs * Instant word wrap * Column/Line/Page display with file name * Find and replace * Security code * Help menus * Single character embedded printer commands * Page throw markers * Multiple copies * Odd/even page headers/footers with page numbers * Multi file printing with full facilities * Print specified pages * Full printer features work with any printer * True word count * True display super/subscript numbers * User defined print characters * Tired eyes facility.

BrunSpell

CPC6128 disc - 30,000 word dictionary - 2500 words/minute
 CPC464/664 disc - 30,000 word dictionary - 1100 words/minute
 CPC 464 cassette - 10,000 word dictionary - 2000 words/minute

DataFile

DataFile is specially written to complement BrunWord and is a self contained card filing programme with very fast access. Files can be selected and then sorted alphabetically, numerically or by date. The BrunWord interface has artificial intelligence which allows the programme to choose a style of addressing that is suitable for the data. BrunWord justifies the text before printing. Labels, reports, personalised letters - DataFile has unlimited print formats using BrunWord.

How BrunWord Compares

Take as an example the justification process. Tasword uses an out dated method where spaces are added only from the right hand side. This has the effect of making the lines appear to stretch across the page. The Tasword system should be much faster but in fact Tasword takes 19 seconds for a 306 word paragraph while BrunWord takes just 1.5 seconds. Tas-spell has a similarly disappointing performance. The text of our free booklet was checked by Tas-spell after the 37 unknown words had been saved, and it took a staggering 18 minutes and 31 seconds for the 3455 words. BrunSpell took just 1 minute 21 seconds for the same test.

NEW LOWER PRICES AND... EVEN BETTER SERVICE!

Now ALL Goods Despatched SAME DAY by 1st CLASS POST-FREE!

PRINTER RIBBONS

Genuine AMSTRAD Printer Ribbons...
Better Quality-Lower Price!

- NEW PCW CARBON £5.95
- STANDARD PCW £4.95
- DMP 2000/3000 £4.95

All Ribbons-POST FREE!
Please Specify Printer when Ordering

PAPER

- High Quality 11"x 9 1/2"
- 60gsm Weight
- Micro-Perf all Round

ONLY
£14.95
Post Free!

PCW SOFTWARE SPECIALS

- LOCOMAIL (Amsoft) £34
- THE MAIL MERGE PROGRAM £34
- LOCOSPELL (Amsoft) £34
- THE SPELLING CHECKER £34
- NEWSDESK INTERNATIONAL
(The Electric Studio) £44
- THE DESKTOP PUBLISHING SYSTEM £44
- SUPERCALC 2 (Amsoft) £44
- THE SPREADSHEET £44
- MASTERFILE 8000 (Campbell Systems)
THE DATABASE £44

FREE! Blank Disk with each of the above
Software Specials.

PCW STARTER PAK

- 10 CF2 Disks
 - 1 AMS 20L Box
 - 2000 Sheets of Paper
 - 1 PCW Carbon Ribbon
- £49.95**
Special Pak Price!

SAVE ALMOST £6! Post Free!

NEW IN STOCK

High Quality PVC
Dust Cover Set (for PCW) **£9.95**

How to Order...



- Simply list your order, name and full address with a cheque or postal order (made payable to Compumart) and post to our address opposite or:-



- Phone any of our 3 order lines (24 hours) and order using your credit card. Please give your full name and address, daytime Phone number, details of your order and the name of the magazine you are ordering from.



- All goods are usually despatched same day — 1st class post — FREE OF CHARGE!



- For SPEEDY GUARANTEED NEXT DAY DELIVERY by SECURICOR, Please add JUST £5 to goods total.



- We welcome official written purchase orders from plc's, government and educational establishments etc. Goods will be despatched on receipt of order, 28 day invoice will follow.

- Overseas orders:- please deduct VAT (15%) then add 25% for air mail and insurance. (All payments in £ sterling).

- All prices include VAT. Prices and delivery subject to availability. All goods fully guaranteed.

3" DISKS



New Low Price!

5 Pack **ONLY £13.95**

10 Pack **ONLY £24.95**

Post Free!

Genuine AMSOFT CF2 3" Microdisks from the U.K.'s largest supplier.

(CF2 Disks are for CPC & PCW Machines).

- CERTIFIED 100% ERROR FREE
 - LIFETIME GUARANTEE
 - INDIVIDUALLY CASED
 - USE IN 1st and 2nd DRIVE (on PCW)
- Excellent Value ONLY from Compumart
Phone for Quantity Discounts.

DISK STORAGE



ONLY
£12.95
Post Free!

The superb AMS 20L Disk Storage Box.
Save your Valuable Disks from spill drinks, dust etc.

- HOLDS 21-3" DISKS (Cased)
- HIGHEST QUALITY PERSPEX
- HINGED, LOCKABLE LID (with 2 keys)
- PRECISION MOULDED — No Disk Rattle

Excellent Value ONLY from Compumart

Compumart

A GREAT DEAL MORE-FOR A GOOD DEAL LESS!

**COMPUMART-DeptAMU Unit 8-Falcon Street
Loughborough - Leics - LE11 1EH**

☎ 0509-262259 / 233893 / 266322

Adventurer's Guide



Seek and ye shall find..

LAST month we looked at Incentive's first Double Gold package – The Mountains of Ket and Top Secret. This month we can go further along this golden trail with the second release: Black Fountain and Sharpe's Deeds. Both are written by Linda Wright, a new name in the field of adventures. From these initial offerings, we can only hope she grows like the proverbial acorn and becomes a regular and worthy purveyor of what we like. Both games are fairly logical, not too difficult and should give both newcomers and more experienced players a good run for their money.

Black Fountain is in two parts, each with over 50 locations and a host of items to examine, pick up and use. The action takes place on another world that has a less involved way of life than our own. The level of technology is probably equivalent to our middle ages, and magic still has many years to go before cynicism and science will overcome its potency.

The kingdoms are loosely ruled by High Chancellors. They respond to potential threats by acting on information from their Chief Officials, who are scattered about their lands. Aguna is the High Chancellor in the city of Loesp in the kingdom of Espadis. Under Aguna's rule is a Chief Official called Istanus, who is forever calling for help. Just like the little boy who cried Wolf too often, Istanus' pleas for help are not always treated with the seriousness they deserve.

You play the part of Shardor, a minor official in the Court of Loesp. Your three older brothers have



been sent to Istanus to investigate rumours of contamination of the river Ist. It is thought that this is caused by Abhaldos, an evil eccentric, who lives in the far north of the realm. Nothing more is heard of your brothers and the situation is forgotten – until one day an urgent message arrives from Istanus...

Now is the chance you have been waiting for, the stage is set, the die is cast etc. etc. You offer your services to Aguna, and to your surprise they are accepted. Your quest for Abhaldos, his evil Black Fountain and your missing brothers has begun!

Normal Verb/Noun inputs will suffice for most of your journey, but more complex or specific commands (such as HIT DOOR WITH STAFF) may be required on occasion. You may use IT to refer to the last noun used and multiple inputs are accepted if they are separated by AND, THEN, a comma or a full stop. Sadly the interpreter will not recognise ALL (as in DROP ALL).

There is plenty to find and a recurrent type of puzzle in Black Fountain is finding the right object to give to the right character. Fortunately you can carry quite a number of items, so the red herrings will not cause you too much trouble. Likewise there is plenty to examine, so keep your eyes peeled and check everything carefully. You can interact with most of the people you meet - try the messenger in scene one for starters. At first, many of them just shrug their shoulders and say nothing. But, if you have some money and something they need, they become more than helpful.

There are several actions you can take that lead to

an untimely demise, so a regular saving is the order of the day. Make sure though that you only try and load back in data from the appropriate part – otherwise you may find yourself carrying some strange things and the program may crash.

To move on to the second part you need to learn the passwords given as you open a door hidden behind a cuddly bear in a cave in the Norst Mountains. To succeed in part two, five objects are needed from part one (in addition to clothing). As you will not be given the passwords unless you have the correct items make a note of where everything is – at least that makes it easier to go back to the missing odds and ends.

The second part follows the pattern of the first – having the right things at the right time with death always just around the corner. Stay alert, examine everything and I'm sure you will succeed where your brothers failed.

Last will and ...

Sharpe's Deeds is not a particularly novel plot, but the story hangs together well. And, like the Black Fountain, there are plenty of places to explore and interesting objects to find. You play the part of a great nephew (or niece) of recently deceased Ferdinand Sharpe. You are named in the will as the sole beneficiary to his estate, but of course there is a catch. You must first find a dozen special treasures and Great Uncle Ferdy's Deeds before you may inherit the rest.

The action all takes place in and around a village in Somerset. There is the village pub, the village pond and the village green. If the locals talk to you, they use that quaint "Err, Arr" dialect that really only seems to be found on postcards and the telly. There are angry swans and bulls, and several devi-

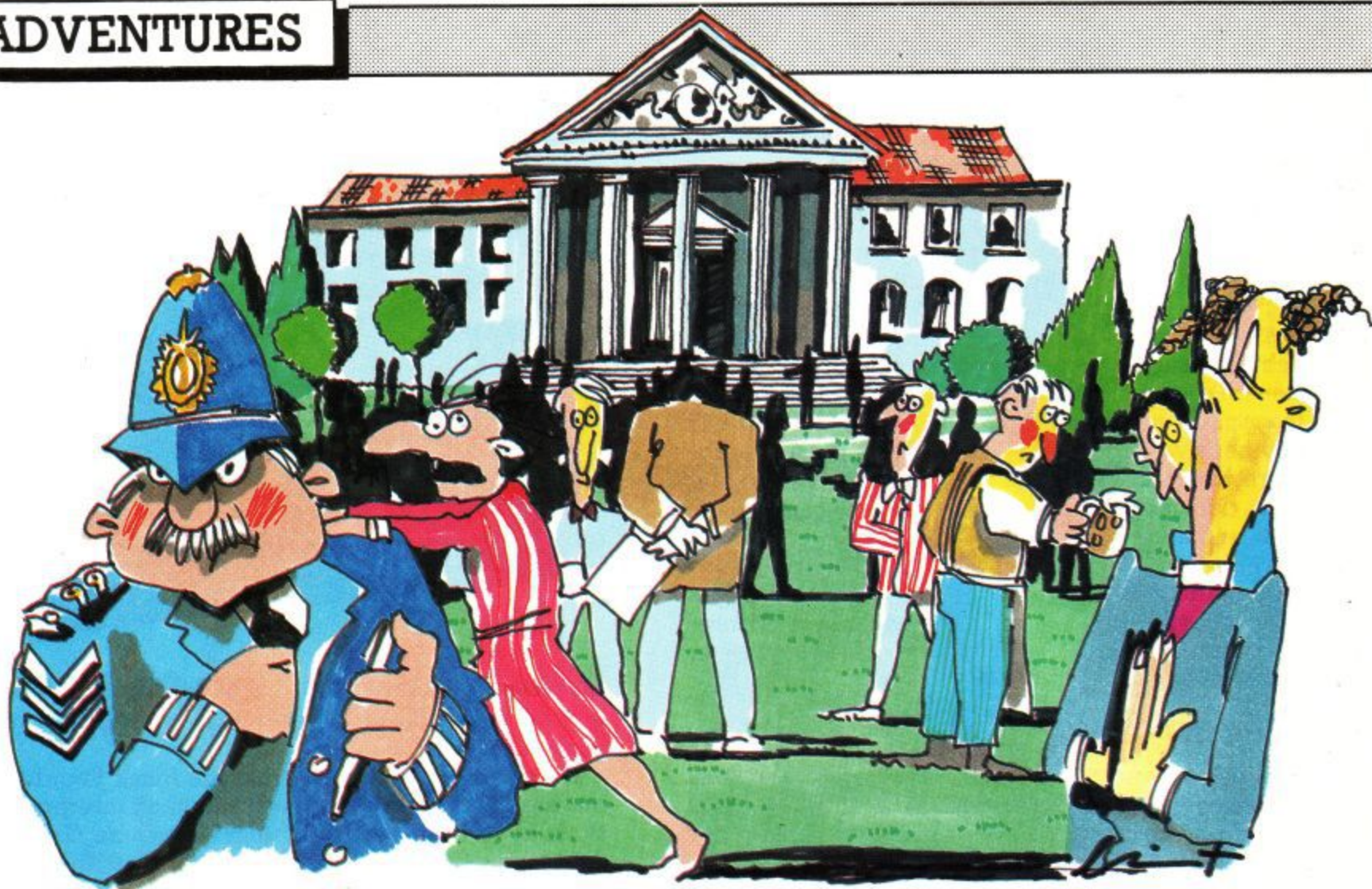


ous puzzles that may require a bit of word searching to find the right action verb to bring about the desired result.

It's a shorter adventure than the Black Fountain, but constructed with the same command interpreter. Both have been written using Incentive's Graphic Adventure Creator. The problems you will meet are slightly more tricky and if in real trouble, Incentive will send you a hint sheet on receipt of an sae. If you do resort to this – get someone else to read the clues for you. receipt of a stamped addressed envelope. If you do resort to this – get someone else to read the clues for you. They are rather explicit and could well tell you things that would spoil the rest of the game.

Let's hope Linda can keep up with the need for good adventures and give us a few more in the future. I wonder if her style will change? So far the watchwords must be – examine everything and be generous to those you meet.





Dirty work afoot

A few months ago we had a preview of Melbourne House's latest adventure - *The Mystery of Arkham Manor*. Well, now we have the real thing. Melbourne's adventures often break new ground and this is no exception. It is an ambitious program with moving graphics and everything controlled using a system of pull-down menus. This alone is nothing new, but add other features of the game and if they all work smoothly, they could have a winning system.

The inlay calls *Arkham Manor* a detective thriller. You stand in the shoes of a newshound of the 1920s, working as a freelance reporter for *The London Chronicle* (published daily and costing just one penny - an old penny too, none of your decimal rubbish). The paper has had a letter from one of its regular contributors about peculiar happenings in a country village called Arkham. Normally the paper takes such letters with a pinch of salt and files them - but as the writer of this one is well known to the paper, they decided to take it seriously.

You arrive in Arkham knowing no more than the above, it is up to you to ferret around and produce the scoop that has yet to be unveiled. The *Chronicle* is leading the way with its new fangled photography machine. This is a portable plate camera that is now issued to their top reporters and comes complete with three reusable plates. Due to its bulk it cannot be used above head height - so look for low to middle level clues.

The screen has a number of windows. At the top is the graphics window, displaying the location you are in, together with an animated picture of you and anyone else present. To the right of this is the command window that lists the options available: Move, get, drop, say, examine, use, give, read,

camera, report, notebook and system. The cursor keys will control a highlight bar, that is moved over the options required. Pressing the spacebar will implement the option selected and call down an additional command window if needed. EXAMINE will display objects at a location that can be examined and MOVE will highlight the direction arrows displayed at the bottom of the screen - the appropriate cursor key will then move you in that direction.

Objects that may be picked up are shown graphically just below the graphics window. Beneath these icons are the three camera plates showing the photographs you have taken. Beneath these again is today's date. To the right is the information window that displays the responses to input commands, any other pertinent events and also any speech you enter via the SAY command.

Finally at the bottom of the screen are the arrows showing possible directions of movement and also a moving sun/moon depicting the passing of time. This may all sound rather complicated but the layout is logical and easily understood.

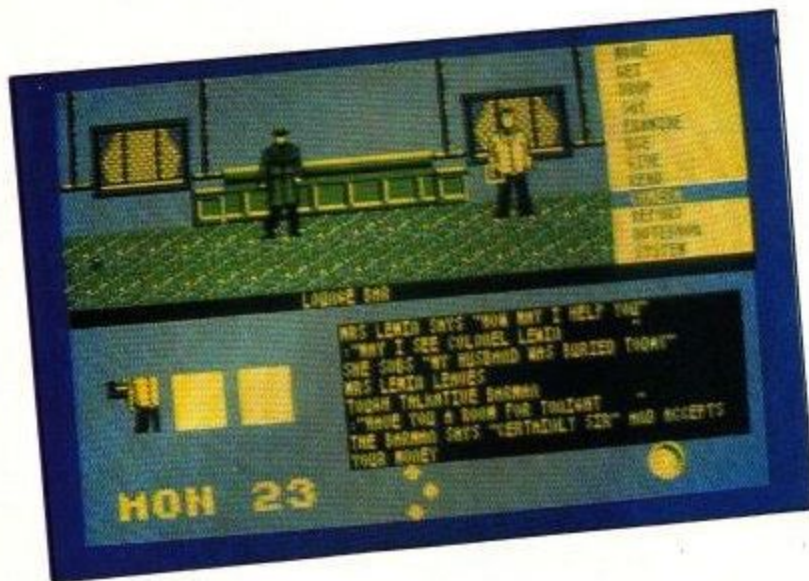
The game is in two parts: A saved position is necessary to enter the second - and of course you must be sure you have learnt all there is to learn from the first. There are more than 50 locations in the first part and each of these must be investigated thoroughly.

There are a number of people to interview and the passing of time also plays its part. The local inn locks up at night, so don't expect to find a bed after closing time. Objects to be found will vary as time passes, so expect a long investigation as you first determine what and who is going to appear - not only where, but when.

Most of the command options are self explanatory, but some are unique to this adventure. Choosing CAMERA produces a small square cursor that can

be moved across almost the whole width of the graphics screen from knee to shoulder height. Pressing the spacebar will capture a somewhat larger picture than represented by the cursor, and place it in one of the photo frames below.

REPORT provides a full screen window on which you can create a story for the newspaper – for which you get paid. You may create headlines, text and incorporate any photos you may have taken. When



you are in the local telegraph office you can use REPORT to send a telegram to request information from the Chronicle files on people or places.

NOTEBOOK provides four pages on which you can make notes of your investigation. These appear as a window to the left of the information panel. Check your notebook when you start playing for any notes you have already written. These can be saved to cassette independently of the normal "save game" facility. Notes and REPORT stories can also be printed out on an Epson compatible printer.

SYSTEM simply offers you the options of SAVE/LOAD a game position or to quit and start again. EXAMINE, in addition to letting you examine objects at a location, also has a STATUS option. This pulls down yet another window that graphically depicts the money you have left, the knowledge you have gained – and the state of your sanity.

Descriptions of your location are entirely graphical, so it is important to EXAMINE at every location. This will draw your attention to any specific features – they may, or may not, be significant.

Conclusion

This is a very ambitious program, offering a range of actions that few other games previously attempted. The mystery itself is not easy to solve as there are so many variables. But apart from the difficulty of learning what is happening where and when, there are also some problems in interacting with the game.

For a program that is trying to eliminate the keyboard, it is surprising that there is no joystick option. Using the cursor keys and spacebar is a reasonable alternative, but their operation is not as smooth as it might be. Obviously the program is quietly chugging away to itself while you are thinking what to do next. Time is passing, characters are moving and

various actions out of your sight are taking place. In between performing these actions the command window also has to be scanned to see if you want to do anything.

This multi-tasking means that the program may be doing something else at the moment you ask it to perform an action. Often you will have to press a key several times to get the cursor to move. This is not a major problem, but it does become very frustrating after a while.

Select SAY and you have to enter what is to be said into the information window. The letters you have keyed in may not appear, so you may find you have typed incomplete words.

Or, as the keyboard repeat timing has been altered, you may find things have been accepted a little too well and instead of one letter you have two. Either way you now have to delete back to the error and type the rest in again. The delete key works in the same manner – it may or may not work first time.

Communicating with the characters you meet would appear to be important, but is a very time consuming and frustrating business. Needless to say, the responses you get are keyed to your questions – quite rightly too – but hitting the right question or key word seems a little difficult. The barman in the village inn is said to be a talkative fellow, all I can say is that he must have been suffering from laryngitis while I was there.

Your aim in the first part is to find a way of getting past the invisible barrier that prevents you entering the grounds of Arkham Manor. After that your guess is as good as mine. The concept and story line for this program are excellent. The marks I have given it reflect my frustration with the inadequate (or over-ambitious) programming - which I feel must eventually affect the player's level of addiction.

Next month

There seems to be a growing range of cheap adventures appearing on the shelves. Some of these are older games that enterprising computer shops have managed to buy cheaply. Others are due to Incentive Software's Graphic Adventure Creator, that has encouraged many potential adventure writers to actually produce commercially finished products.

Next month I will look at several of these cheapies. Keep your eyes peeled and examine everything carefully at YOUR local computer shop – you never know what may turn up.

	RATINGS		
	Black Fountain	Sharpe's Deeds	Arkham Manor
Plot	66	62	75
Atmosphere	67	65	75
Addiction	73	70	55
Difficulty	60	62	75
Overall	68	66	66

Firebird's fortunes

Small may be beautiful, but is big necessarily ugly? Jerry Muir visited a subdivision of one of Britain's largest corporations to find out.

WHAT happens when a huge corporation gets involved in a bright, new, growth industry, such as computing? Is big money behind the software a guarantee of success... or will the faceless bureaucrats foul up in a market that they just don't understand?

"This is a market where you have to be very flexible – where you have to respond to trends. And you can't always respond in a way that corporate thinking would like you to respond. There's always going to be conflict when that happens and that conflict is very, very difficult to deal with".

Tom Watson pauses for a moment. He knows all about the potential for tension – he's in charge of marketing for Firebird and Firebird Gold, both owned by communications giant Brit-

ish Telecom. But instead of launching into a tirade against his big business bosses, he smiles.

"One of the nice things about Telecomsoft is that we're very autonomous. We're very well run, we have a very good management structure of people who understand the job. They are BT corporate people, but they understand what we are doing and they let us do what we think is right".

So how did it all start? Shouldn't BT be concentrating on giving us a better phone service instead of diverting us with games?

"British Telecom is divided into five major divisions, one of which is British Telecom Enterprises, which involves itself in new areas of business. Now one of the divisions of British Telecom

Enterprises is New Information Services which is a sub-division of yet another division".

It sounds like a classic recipe for corporate thinking so far, but eventually we reach Firebird.

"New Information Services has a brief to investigate areas of information technology – things like Micronet, MUD – Multi-User Dungeon, and Telecomsoft, which started a couple of years ago, under the auspices of a guy called James Scoular. The first release was Gyron – the second was the famed Elite".

Not a bad start and press coverage was guaranteed – Elite was already a classic on the BBC and Gyron had a tie-in prize of a Porsche. But soon after the high profile launch, tragedy struck.

Despite being a young man, James Scoular died suddenly, leaving Tony Rainbird, Herbert Wright and James Levy to run the company between them. James moved on to another area of BT within months, then Tony went off to found Rainbird, leaving Firebird under Herbert's control.

Three way split

At this stage the label was divided into three areas. Gold included products like Elite; "A tradition that continues with products like Cholo," according to Tom.

"Then there was The Hot Range, which was supposed to fill the mass market gap – £7.95, fairly simple products but well-programmed, well-executed and well-presented. But for a number of reasons it never really worked".

One of these reasons could be that the first of the four releases, Rasputin, was fiendishly difficult. "A brilliant game, but nobody knew how to play it". Tom grins. "It's soon to come out on Silver though", he adds, making it a



Part of Firebird's West End offices

good bargain. (Note: The Amstrad version was written by Paul Hibbard who is now the boss of Rainbird).

While it's possible for Firebird full-price products to appear on the budget label, Silver is now run as a separate entity. "It probably suffered from being too closely involved with the full price range. So they redesigned it and put a lot more effort into getting a broader range of software. Then a guy called Chris Smith took it over to manage it autonomously".

But that still hasn't explained how Firebird manages to retain its own personality when it's part of such a vast combine. Tom disagrees with the basic line of reasoning, that it's an impossible situation.

"People see Firebird and the large corporations in terms of what was just a couple of years ago presented to the world as a cottage industry with all these whiz kids who were all going to set up their own companies and all drive Porsches. Most of that was hype.

"Imagine was responsible for a lot of it. They'd hire Porsches if the TV cameras came. These programmers would be on six or seven thousand a year, but they'd be given a Porsche for the day just because the TV cameras were there.

Growing up

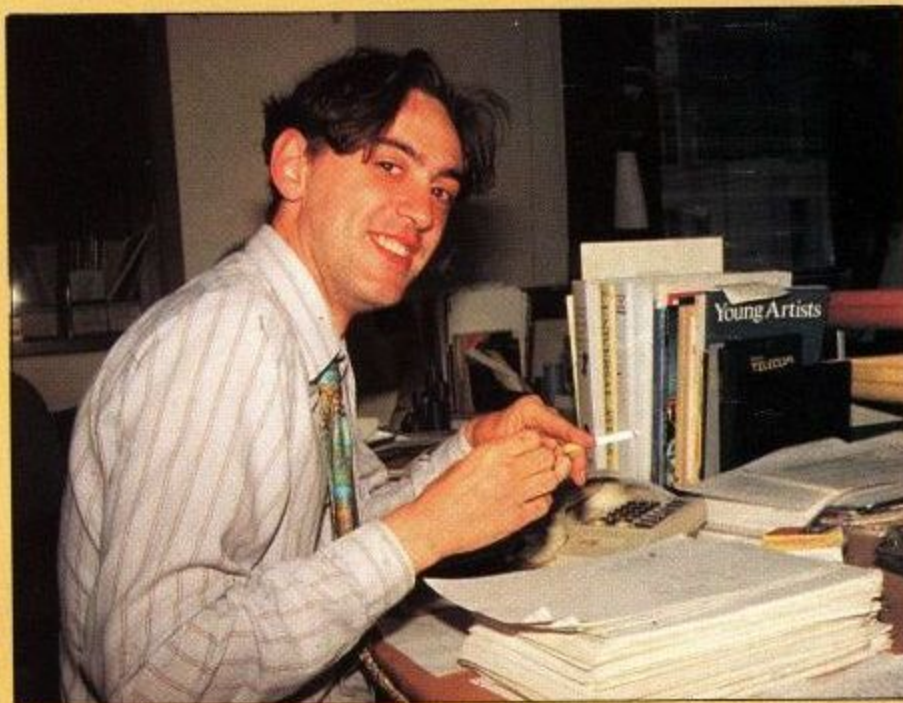
"The industry held a sort of naive charm for many people. It was the individual struggling against big business and making a buck – all those wonderful Thatcherite ideals of small businesses and things like that. That's fine, but it was always going to be the case that other people would get involved in it and the large corporations have the financial and personnel resources to do it properly".

Not all the corporations who came into this fresh, young industry have flourished. There was Thorn EMI, for example. Others have hung on; Virgin, Argus, which is part of a large publishing group, and Ariolasoft, part of a German combine, are just three.

But Tom believes that it can be difficult for these large companies to succeed. "Part of the reason is the strictures placed on the software divisions by their overlords. But, of all the large corporations in the software market, I think we are the most successful."

Still, despite sympathetic management, there are some odd constraints, such as the plush, first floor offices overlooking New Oxford Street in London's West End. "These offices are hideously expensive, but because British

**Herbie Write
keeps Firebird
flying**



Telecom has its own ways of accommodating its assorted businesses, we have to have them.

"We can't wander off and do our own thing and that makes some of our costs quite high. But it's a tiny, tiny thing – it probably makes a difference of point one of a penny to a £25 game. It's a minor stricture which doesn't affect us that much. We really do quite well within a corporate situation".

Noticing the two PCs sitting on a nearby desk, I suggest that one advantage must be that they can buy whatever hardware they want. Not so, says Tom.

"People often see companies like Telecomsoft as having open cheque-books. They see it as guys in blue suits sitting in anonymous offices saying, 'We'll keep on writing cheques until we've succeeded'. But you can't just buy yourself into an industry like this.

"If we need a piece of equipment, yes, we can go and buy it, but we've got to pay for it at the end of the month – and the only way we can do that is by selling units". To adapt a popular proverb, there's no such thing as a free Mac, – even in BT, it seems.

There is structure

The need to pay for its office space and equipment hasn't stopped Firebird growing into quite a complex structure itself. As well as software development there's production, marketing and sales, which has to cope with both England and the rest of Europe.

The task of keeping all these elements working together falls on the shoulders of Herbert Wright, who faces such brain-bending problems as a European sales department almost entirely populated by people called Jane! There's also a Sue in there, but Tom tells me that they're trying to per-

suade her to change her name by deed poll.

Despite the potential for confusion, European sales are very important to Firebird. Exports to the States are handled by a separate division, Firebird Licensees, based just outside New York. This is obviously another advantage of having an international parent company.

The international interchange works both ways, and more and more software is being written overseas, in countries as far apart as Finland and Spain. Even Hungary is getting in on the act with the ever-busy Andromeda development team. Recent Amstrad release Kinetic was programmed in Berlin and Mystery of the Nile, a forthcoming title has Hispanic origins.

Mystery will sell under the Firebird banner, which flies over the £7.95 titles. "People can look forward to a wonderful arcade-adventure", Tom promises. Meanwhile the next current Gold release is Cholo, and Tom says that, "It epitomises the Gold tradition."

It's a vector graphics game, set in a deserted city after the atomic holocaust, where you take on a number of increasingly powerful droids. The game comes complete with a novella, which made me wonder if there was ever rivalry between Firebird and Rainbird for the top titles. Isn't it a bit irritating to have a label just down the corridor which is constantly laying claim to state-of-the-art programs?

Rain and Fire

Tom assured me that any rivalry is on a friendly basis. Allocating programs is determined by the format of the original version. Rainbird takes the ST and Amiga titles, while Firebird sticks with 8 bit, apart from the PC.

Any 1512 users out there should be glad to hear that the classic Elite is



**Tom Watson -
marketing
supremo**

about to appear on their monitors, around September, in a conversion by Real-Time, who wrote *Star Strike II*.

September is a very important time in the computer industry, of course, because that's when the new products are rolled out for the PCW show. Tom says that, "There are a few changes on the way, but we can't tell you about them yet".

Despite trying everything from bribery to threats, he refuses to say anything more, but my suggestion that they could involve a new price structure seems to hit home. But don't expect Firebird to take the path towards the fiver game that some people are following. Tom holds strong views about this latest development in software.

"These people are, not putting too fine a point on it, cutting their own throats. And they're not doing the consumer any favours either.

Okay, if you drop the price to £5.95, or even £4.95, you're giving the consumer a cheaper product. It's not in the budget area, it's still full price, but it's cheaper. At that sort of price point it competes directly with records and other areas of leisure spending.

"That, on its own, is a valid point. Another argument is that because of the budget phenomenon there's a natural tendency towards lower prices. Again, just taken on its own, it has a certain validity. But I believe that it's a limited view.

"Taking the price down to give the consumer a better service is pitched towards the pocket. Competing directly with other areas of consumer spending, doesn't hang together".

Tom then went on to explain how reducing prices means less money for the retailers. "The multiples - the Boots and the Smiths - make their profits per inch and per foot of shelf space.

"If they make less profit they'll

become less inclined to stock a wide range of products. They'll only stock a top 30, say, or they may well crop the space down to a top 20, or even a top 10".

Another effect could be to cut down on the number of stores carrying software. "In either case, that's not giving the consumer a better service.

"The second point is our own investment in the product. Time is money. Programmers are becoming more and more sophisticated; they work on larger development systems and push the boundaries of programming in games like our own *Sentinel*, or even *Thrust on Silver*.

"People don't just sit down with an assembler and knock these games together in a matter of weeks. If you take away the investment you take away the time that you've paid for. Which means that if you're developing a product, suddenly you find you can't afford to develop it over four months because the money won't allow it. You can only develop it over three".

But surely lower prices will increase sales and profits will remain the same. Tom's already thought of this one.

"There's so much software out there that there isn't the market to take it all. A drop in the price point won't increase sales because there's too much competing". All in all, Tom puts down the move towards lower prices as a move of desperation and an inability to work well in the traditional price points.

Future products

So, we won't be seeing Firebird products at a cheaper rate, but what will we be seeing? Well, in addition to the other titles, mentioned above, there's the company's first arcade license, the highly addictive *Bubble Bobble*.

Shoot-'em-up addicts should chase the *Flying Shark*, with its simple weap-

ons exchange system. There's more arcade adventuring when you light the Black Lamp and play a jester. It's being developed on the ST with a conversion for the CPC by Software Creations.

The programmers of Black Lamp also worked on *Star Trek*, one of two long-awaited Mike Singleton titles, the other being *Dark Sceptre*. They've been in development for so long that they're gaining an almost mythical status. Tom promises that they are on the way.

"Dark Sceptre has presented the programmers with enormous difficulties. We're still not quite there on the target machine, which is the Spectrum". The adventures of Kirk and Co. have been developed on the ST, but they're causing even bigger headaches in scaling down to 8 bit. "There's a new development team who started a couple of months ago and they're very confident after a full feasibility study".

I couldn't help wondering whether all this meant that Mike Singleton is designing beyond the capacity of the Z80 and 6502 processors. "Star Trek was beyond the capabilities of the Amiga", Tom confided. Even Commodore's miraculous micro couldn't provide enough processing power for the original spec.

The problem was the revolutionary Multi-Vision technique, which was to have provided one main screen, surrounded by smaller windows which could be pulled into the area as required. Unluckily things overreached themselves when they tried to keep the action going in the small windows, and now only the main areas will be "live".

Tom can't promise that the program will beam up in time for PCW - but he does promise that they won't re-use last year's USS Enterprise-styled stand at the show. So what will they be showing? That would be telling, but you can be sure that it will hold some pleasant surprises.

Back on sunny Oxford Street I was still wondering about Firebird. Yes, it is different from those long-established "cottage industry" companies, and perhaps it does present a more anonymous face to the public. But don't make the mistake of thinking that Firebird's manned by middle-management zombies.

The atmosphere in the offices is keen, and the plush surrounding are cluttered with all the paraphernalia that you'd expect in a lively software house. There's a sense of enthusiasm, a belief in what everyone is doing, and an undoubted desire to put out great, innovative games.

This is certainly one Firebird that has risen from the flames of a corporate background.

DISCOLOGY NEW

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

The Copier

- * At the time of going to press Discology really is the most powerful utility ever written for your Amstrad
- * Makes full use of all 128K on a 6128.
- * Highly intelligent, compresses data allowing whole discs to be copied in one go.
- * Full file copier, copy multiple files in one go. Will cope with files of any length.
- * Copies files from disc to tape.

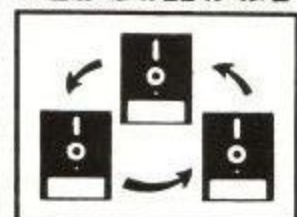
The Editor

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

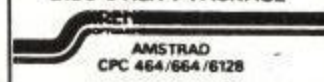
The Explorer

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

DISCOLOGY



DISC UTILITY PACKAGE



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

Discology on disc only £14.99 CPC464/664/6128

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

DISCOVERY PLUS

The ultimate tape to disc transfer program

"Discovery Plus must be the most advanced and probably most efficient tape to tape disc transfer utility to date" Amstrad Action, December 1986. 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 4 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.

Silver Screwdriver Award Amstrad January 1987.

Discovery Plus now Incorporates Splock Trans II

Discovery Plus only £14.99 on disc for the 464/664/6128

PRINT MASTER

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

- * Comes complete with 20 fonts (typefaces)
- * Prints any ASCII file (from Tasword/Protext) in a variety of fonts, sizes & styles
- * Adds NLQ (Near letter quality) printing to any printer
- * Semi proportional spacing available
- * Print large posters
- * Font designer allows you to create your own fonts
- * Dump screens to your printer in 16 shades of grey
- * Very easy to use, full instructions and demo's included.

No printer should be without this program!

On Disc, only £14.99 CPC464/664/6128

CHERRY PAINT NEW

Another new addition to our range, CHERRY PAINT is a superb mode 2 art package. CHERRY PAINT uses icons, pull down menus and windows to provide an easy to use drawing package for your Amstrad.

- * Uses 640 * 400 pixels in Mode 2
- * Full range of features and options
- * Dump designs to your printer in 5 sizes
- * Compatible with keyboard, joystick or AMX mouse
- * Superb review in Amstrad Action

Incredible value at only £9.99 on disc CPC464/664/6128

TAPE UTILITY

464 OWNERS, LOAD IN YOUR SOFTWARE AT UP TO 4 TIMES THE NORMAL SPEED

Tape Utility will allow you to make back up copies of your tape based software that will load at up to 4 times the normal speed.

...So easy to use, simple one key operation.

...Handles up to 42K (approx) in one go

...Will copy normal, headerless, speedlock & flashloaders

...Tests have shown that it will backup about 90% of all Amstrad software

...Choice of ten speeds up to 4000 baud

...Removes protection from basic and speedlock programs

"Simply the best, the tape to tape back up copier to beat all tape to tape back up copiers". AMSCLUB

...Written specifically for the 464, this is not a Spectrum conversion.

TAPE UTILITY ON TAPE ONLY £6.99. AMSTRAD CPC464 ONLY.

SOUNDBLASTER NEW

The SOUNDBLASTER is our first move into hardware. This device allows you to enjoy your games with superb STEREO SOUND. The SOUNDBLASTER is a small stereo amplifier that comes complete with TWO 20 WATT 3 WAY SPEAKERS.

- * Small compact size
- * Powerfull 20 Watt 3 way speakers
- * Speakers contain a 3" woofer, a 2" mid range and a tweeter
- * Volume and balance can easily be adjusted
- * Headphone socket for private listening

FOR A LIMITED PERIOD, COMES COMPLETE WITH STEREO HEADPHONES, ORDER NOW!

Available now at only £29.99 (+£2.00 for postage) CPC464/664/6128

SPLOCK TRANS II NEW

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
- * Saves program in full including loading screens
- * Programs reload quickly including loading screens with colours set correctly
- * Will transfer easily to disc

Available now on cassette at £7.99 CPC464/664/6128



SIREN SOFTWARE, TEL 061-228 1831
2-4 Oxford Road, Manchester M1 5QE





A is for Amstrad, B is for Binary C is for programming with

Rupert Goodwins looks at the trendy language in the mainframe world as supplied by Arnor for CP/M Plus.

COMPUTER companies sometimes generate a loyal following, as you are no doubt sick of hearing, Arnor has a special place in most CPC owners' hearts. This review is being written with Protext on a CPC664, in preference to an 80286 IBM compatible with a £450 word processing package, so they must be capable of doing things right.

One would hope that their C, which runs under CP/M+ on suitable CPCs and all PCWs, would be done right. But C is a language which can be got radically wrong. And the winner is...

Let's talk about C a little first. It is usually a compiled language, which means that a program is written using a text editor first, then turned into a runnable form by the compiler. CPC Basic is interpreted, which means that it is turned into a runnable form and run at the same time, every time. That's slower but more convenient for beginners and those who write small programs, who would find a compiled language both overly complex and unwieldy.

C GAINS a lot of flexibility from being compiled. It was designed (a fact that newcomers to the language find difficult to believe at times) to work in a similar way to the computer itself, but expressed in a form that programmers could understand without them having to learn the details of each separate machine.

The way it stores information, the ways in which it passes data around and the methods used to loop and make

decisions all have close parallels in the internal workings of most computers, if not programmers.

COMPOSING a C masterprogram takes time. With Arnor C, as with most Cs on most computers, the program goes through various stages on its way from brain to CPU. It starts out in a text editor (where it's called the source code), gets compiled to an intermediate form (the object code), and then gets linked up with various bits of machine code to form the final hunk of code that the computer runs (the executable image).

Unlike other Cs, Arnor C does this final stage every time you run your program, using a special interpreter. It's thus that exotic cross between normal compilers and interpreters, a semicompiler.

Semicompilers are exciting beasts. A significant acreage of computer science journals has been devoted to this subspecies, but for the CPC owner it can be described as producing code that is slightly slower than pure machine code.

For large programs, this code can also be smaller than the equivalent hand-tooled assembly language version. But you always need the run-time program to run a semicompiled program; like Basic you need both the language itself and the program you want to execute.

COMPILERS produce programs that can run by themselves. Arnor have produced a program that will turn your C program, once you've got it going and running in semicompiled form, into a stand-alone, fully compiled chunk of machine code. You can then distribute this to all and sundry, whereas the need for a run-time program limited the potential users of the semicompiled version to those who already had Arnor C.

At the time of writing this review

this extra program was not available, but Arnor says that it will be included in all Cs that it ships. A lot of the compiler apparently was developed using this program and the compiler itself (compilers are often compiled in this way, it's darned clever and deuced confusing).

The linking process (happens after compilation, remember?) takes the raw program you've just written and ties it in with other programs and the libraries. Libraries are sets of standard functions, screen handling, disc processing and the like, that every program needs to work. For example, the C function to write something witty on to the screen is called PRINTF (PRINT Formatted). It's used in much the same way as PRINT in Basic, but it's slightly cleverer. A typical use would be PRINTF ("My name is Gruntleworp."), which, brackets apart, is a dead ringer for the Basic sibling command.

COMMANDS like PRINTF have to be identified. Every time you put PRINTF into a C program, the compiler remembers what it is you want to do, and leaves a marker there. It's up to the linker to find PRINTF in a library file, work out where it is and fill in the marker with a real address in the compiled program. But the linker usually includes the whole library in the final file, so you can end up with two line programs that link down to tens of kilobytes in length. C isn't designed for two-line programs...

Arnor C has a choice of four libraries, from which you can pick the ones that give you all the functions that you use without (hopefully) picking up too much extraneous baggage. The libraries are STDLIB.L, the full library, SMLIB.L which has most of the "standard" functions that all versions of C have, MINLIB.L has the bare minimum of simple, basic functions that you can still produce useful programs with, and MATHS.L is unsur-

prisingly the maths library.

Most programs don't use sines, cosines and all that gas, so it's nice to be able to leave the large library functions that provide that sort of service out.

COMPILED programs are big, even with the minimal library, you can end up with 13k or so of overhead on top of whatever program you've written. Silly for titchy progs, but once you get to about 30-40k of your program it starts to compete well with other options. And most of the functions in the full libraries are composed out of simpler functions from the minimal library, so you can always improvise them yourself, if you're desperate to do so.

This isn't the place to go into the mechanics and structure of the language. C cognoscenti will know that the bible was written by a couple of swells called Kernighan and Ritchie, and is referred to by all and sundry as "the C manual", or more simply as K&R. Arnor C claims to be a full K&R implementation, which means that any programs written in it will run on 99 per cent of C compilers on any computer. Including the big ones.

CONFINING a program to the features which are available on all computers is often a shame, so Arnor C also has extra functions to make efficient use of the CPC's screen and other attributes. These extensions make for easier programming, but will cause problems if you try to move your program onto another computer. This process, called porting, was one of the things that C was explicitly designed to make simple.

Arnor has also got functions that aren't in K&R, but are found on most Cs. There is an advanced standard called ANSI C, which defines all the bits that K&R got (whisper it) a little wrong. Arnor C seems to be closer to ANSI C than K&R.

CONFIRMED Arnor addicts will like the editor supplied with Arnor C it's - surprise - Protext. Well, it's "a full implementation of the program mode of Protext", and as such is up to the job of creating C source. It does lack a few features found on more specific editors, for example Vedit (the editor I use to create C source code on my PC) has automatic indent and bracket matching.

Indenting is very important in creating readable and debuggable C source; although the language itself doesn't care where on the screen the instructions are, the human charged with keeping the code will find it impossible to read unless each new level is

shifted along an indent. For example, here's a fragment of C not indented...

```
{
  if (sizecheck(jim) == 3)
  {
    if ((++f && (!retcode))floppy)
    {
      printf("Some message");
      alert(4);
    }
    else
    {
      printf("Dodgem City!");
    }
  }
}
```

and now here it is again, all nice and neat

```
{
  if (sizecheck(jim) == 3)
  {
    if ((++f && (!retcode)) floppy)
    {
      printf("Some message");
      alert(4);
    }
    else
    {
      printf("Dodgem City!");
    }
  }
}
```

You might also see how useful automatic bracket matching could be, C lives and dies by its curly brackets... But there are features built-in to the editor which make such minor omissions seem, well, minor.

The compilation stage of the programming process can be entered from the editor (by typing AC from the command line). During compilation, any errors that crop up force a return to the editor, where they can be fixed and the compilation started again. A very civilised way of writing C.

CONCURRENT editing means that you can edit two files at once, and allows you to copy blocks of text between them. This is massively useful, especially in C, when you often need to cannibalise old programs for useful bits that you don't fancy writing again.

AC is much stronger than a mere compile command. It also links and runs the program, so during the later stages of debugging it turns into a nice environment under which the C freak can polish up his (I know of no female C freaks) creation. To a person such as I, used to skipping between compiler, linker and editor, scribbling down error messages on the back of the Guardian and losing my place, it is pleasant indeed. And it's all decently speedy, even on my minimal system.

The run-time system, called RUNC, is also capable of carrying out some

basic functions to maintain the system, like disc housekeeping. But again it's much more flexible than it could have been, as compiling, linking and running a program can all be carried out from RUNC.

Ctends to generate lots and lots of disc files. As well as the source code you wrote, there's the object file, the link file, various bits like the libraries and the compiler and editor itself. As a result, although you can make it all work on a single drive CPC6128 (or 464/664 with extra memory, as used for this review), a second drive is definitely good for the soul. And PCW owners with a second drive and oodles of M: will be laughing.

The manual is definitely for reference only. It does cover every aspect of the Arnor implementation quite thoroughly, including the black art of interfacing to machine code programs, but not going into gory details about memory allocation.

There are several appendices, but NO INDEX. Bah. Fooey. A plague of guppies on Arnor's house.

COVERING the software is one thing, but trying to teach C is another. The manual does advise the beginner to get hold of and read several books on the subject before starting, advice I'd wholeheartedly agree with, although the books you'll need are often very expensive.

It also tries (especially in the editor section) to cover both the CPC and PCW editing keys simultaneously, with the emphasis on the latter. As an Arnoldian I was left at times a little confused and feeling a second class citizen. But all the information is in there somewhere, and I've seen (and written) much worse.

Cis unusual in the CPC field, as mastering it gives the programmer a readily saleable skill which he can apply in the commercial sector. The same program that you write for Arnor C and your 464 will port across to a multi-hundred thousand pound IBM mainframe (but it won't have the graphics).

So C, like it or lump it, is a Good Thing. Arnor C v The Rest is a little more difficult to quantify, but thinking of it as a tutorial tool (albeit with the capability to produce useful programs) makes me feel that the editor/compiler interaction and general niceness are strong arguments in Arnor's favour.

For £50 it has to be worth every penny. In typical Arnor fashion, they've taken their time and got it right.

Reach the
top with...

LCL

Educational Software



Amstrad (CPC, PCW, PC) (Disc/tapes) ★ BEST REVIEWS ★
Electron, BBC (tape/disc) AS
Spectrum Commodore 64 SEEN ON TV
(Apple, VIC, ZX81, NEC PC8201A) ★ WORLD LEADERS ★
★ At all Major Shows ★ ★ Hons. Graduate/Teacher Authors ★

COMPLETE SELF-TUITION COURSES

(Each contains 24 programs)

£5 off total for 2, £10 off total for 3,
£17 off total for 4

MICRO MATHS (CPC, PCW, PC)

Course taking beginners (from age 8
yrs) to O-Level/GCSE. 24 programs on
59 topics on 2 tapes/disc + 2 books £24

PRIMARY MATHS COURSE (CPC)

Course taking beginners (from 5 years)
to secondary school entrance in 35
programs divided into 18 lessons/tests.

All animated graphics 2 discs/tapes £24

MICRO ENGLISH (CPC, PCW)

Course taking beginners to English
Language GCSE. Incorporates real
speech, no extras required. 2 tapes/disc
£24

MEGA MATHS (CPC)

A-Level course for mature beginners,
A-Level Students or Micro Maths users.
Covers 105 topics on 2 tapes/disc +
books £24

NEW

IMMEDIATE
DESPATCH

Send coupon or phone orders or requests for free colour catalogue to:
LCL, (Dept. AU), Melody House, 13 Deanfield Road, Henley,
Oxfordshire RG9 1UG

Tel: 0491 579345 (10am-10pm)

Name _____

Address _____

Title _____

Computer _____ Disc/tape _____

STOCKMARKET

THINKING OF INVESTING? ALREADY AN INVESTOR?

STOCKMARKET enables you to record details of
purchases, sales and dividends of shares, unit trusts etc.
Current share prices can be entered very easily at any
time for an automatic folio revaluation. Values of share
prices, indexes etc can be recorded, listed and plotted
along with moving averages. Practise buying and selling
shares. See if your intuition is right.

PRICES

- Store values of share prices, indexes, exchange rates etc.
- Up to 260 prices per share (eg. weekly prices for 5 years).
- Tabulate prices.
- Plot prices and moving averages with log or linear scales.
- Actual prices supplied as demonstration data (inc FT 30, British Telecom).
- Use curves to select best buying and selling opportunities.

ACCOUNTS

- Record full details of your portfolios of stocks, shares, unit trusts etc.
- Practice buying and selling techniques and accurately record your progress.
- Up to fifty shares per folio. Store many folios on one disc.
- Buy and sell shares with automatic calculation of dealing costs.
- User definable dealing costs.
- Record dividend yields and price earnings ratios.
- Update prices and automatically update yields, P/E ratios and recalculate individual share and total folio value.
- Record dividend payments, total dealing costs and keep cash accounts.
- Tabulate present folios, past transactions, dividends and cash accounts.
- Demonstration data supplied. Comprehensive forty page manual.

PC1512
version
£49.95

CPC 464 (disc)/664/6128
PCW 8256/8512
Price: £29.95 (inc. p&p)



MERIDIAN
software

38 Balcaskie Road,
London, SE9 1HQ.
Tel: 01-850 7057

NEW!

MONEY MANAGER PLUS

£39.95

Incl VAT, P&P

For all PC compatibles, such as Amstrad PC1512 Also available for Amstrad PCW computers.

Financial management software

For Small businesses
Sales Executives
Company Departments

Self-employed
Journalists
Expense accounts

Doctors
Clubs
Home accounts

Farmers
Charities
Etc, Etc.

Money Manager Plus is an easy-to-use yet powerful accounting system. It will enable you to record and analyse all your financial transactions, so that you know exactly where you stand and can make sensible and informed financial decisions. Check bank statements, monitor cash flow, analyse sources of income and expenditure, make budget forecasts, prepare financial statements. Keep one step ahead of your bank manager, convince tax and VAT inspectors, avoid nasty surprises!

Money Manager Plus is very much easier and more direct to use than other accounting systems costing many times more, and provides features that would be difficult or impossible to program using sophisticated database/spreadsheet/graphics packages. Indefinite telephone support is included free of charge, because even novice computer users require so little!

To run the system you just switch on, load **Money Manager Plus**, select a data file, make new entries in any order that suits you (or amend existing entries), produce a few reports to check the current financial situation, and then save the data for the next time you need to use it. You may have any number of data files (or sets of accounts) and store several on one disc. A data file contains 12 months of data, which may be rolled forward month by month.

Up to 300 separate transactions may be entered per month.
Each entry consists of:

- The day of the month, eg. 23rd of June
- Account number, one of up to 9 defined by you to suit your circumstances eg 1= Barclays, 2= Visa, 3= Cash etc.
- Cheque or reference number, eg ABC123
- Class code, one of up to 50 defined by you to suit your circumstances eg o1= Overheads, o1= Rent, o2= Heat/Lighting, o2= Stationery etc. or m0= Motoring, m1= Petrol, m2= Road Tax, m3= Maintenance etc.
- Descriptive text eg. "Tax Rebate", "Refrigerator", etc.
- Optional single-character mark as an extra identifier, eg. b= business, p= private, etc.
- Account reconciliation marker.
- The amount of the transaction, debit or credit.
- Optional VAT indicator, eg exempt, zero, full or part rated. If VAT is not relevant it may be ignored.

You may select categories of entries according to account, class and mark (eg all bank account entries, or all motoring expenses, or all cash account business expenses etc.) and produce reports on the screen or printer as follows:

- Detailed statements covering any period, showing each qualifying transaction with a running balance.
- Quarterly VAT statements showing input and output transactions separately with columns for exempt, zero rated, VATable, VAT paid and gross amounts, and a summary with all therelevant totals.
- Tables showing the total amounts for each class month by month, and totals for the whole year.
- Tables showing the totals for each class in each account.
- Tables showing the monthly maximum, minimum and average balances, turnover and cash flow month by month and for the whole year.
- Bar graphs of any category month by month.
- Pie charts covering any period for various categories of entry (PC version only).

Plus: Standing Orders
Comprehensive Manual

Entries optionally sorted into date order
Two sets of realistic practice data

Item search facility
Indefinite free telephone support

Money Manager Plus is a development of the successful **Money Manager** system, of which over 6000 have been sold. It is faster, has a greater capacity, and includes many extra features suggested by existing users. The original **Money Manager** for Amstrad CPC/PCW computers is still available at £24.95

Send cheque or credit card number or phone for immediate despatch (Please specify computer model)



Connect Systems

3 Flanchford Road, London W12 9ND 01-743 9792 8am-10pm 7days a week





A US Golden opportunity

SOLOMON's Key takes you on a trek through over 20 exciting and hazardous rooms, searching for gold and gems. *Amstrad Computer User* takes you through over eighty exciting pages, although they are not particularly hazardous. If you are searching for gold then this is the place to look.



RULES

- 1 The winner is the first correct entry picked on October 10 1987. The next six correct entries picked will win a U S Gold sweatshirt.
- 2 You may photocopy the form but only one entry is allowed per reader. Anyone submitting multiple applications will have all entries disqualified.
- 3 The judge's decision is final. No employees of U S Gold, Amstrad User or friends of the editor who get freebie copies may enter.

Britain's biggest software house, true to their name are offering a solid gold sovereign as first prize. A picture of the Queen made in the king of metals. The prize comes from US Gold. Six runners-up will win snug US Gold sweatshirts. It's a valuable prize so the competition is a toughie. Gen up on your Gold and Keys to win the inflation proof coin.

QUESTIONS

1. In 1817 a serious robbery at Portsmouth Naval Dockyard led to the government of the day offering a £100 reward to the inventor of a lock which could not be picked. Who won? Was it ...
a) Jeremiah Chubb b) Joseph Bramah
c) Linus Yale Jr.
2. What is the chemical notation for Gold?
a) Au b) Ag c) G
3. What is fool's gold?
a) Iron pyrite b) Mercuric Oxide
c) Sodium Carbonate

Electronic mail, telex and
in a flash — and more!

For more information
Select 1

atched!

Please send me **Mini Office II**

*Add £2 for Europe
*Add £5 for Overseas

Cassette £14.95* 6086
3" disc £19.95* 6087

Payment: please indicate method (✓)

☐ Access/Mastercharge/Eurocard / Barclaycard/Visa

Expiry date
/

Card No. _____

☐ Cheque/PO made payable to Database Publications Ltd.

Name _____ Signed _____

Address _____

Tel: _____

Please allow 28 days for delivery

ACUM010

All this in just

Line 0013114 8854 Words 1146 Free
3rd July 1986

Dear Douglas,

Further to our telephone conversation yesterday, I have pleasure in enclosing a pie chart showing the breakdown of our fixed costs for the year.

As previously discussed with yourself, I will be travelling down by train next Thursday morning.

I look forward to meeting you then.

Yours sincerely,

Jeremy Broad

WORD PROCESSOR

Compose a letter, set the print-out options using embedded commands or menus, use the mail merge facility to produce personalised circulars — and more!

Mini Office II Database 1 Database Software 1985
11146 1 00000000 Size 127 Record Number 1

Name	Address	Phone	Postcode	City	Country
John Doe	123 Main St	0123 456789	AB1 2CD	London	UK
Jane Smith	456 High St	0123 456789	AB1 2CD	London	UK
Bob Brown	789 Park St	0123 456789	AB1 2CD	London	UK

Select Item: F4 F5 F6 F7 F8 F9 F10 F11 F12 F13 F14 F15 F16 F17 F18 F19 F20 F21 F22 F23 F24 F25 F26 F27 F28 F29 F30 F31 F32 F33 F34 F35 F36 F37 F38 F39 F40 F41 F42 F43 F44 F45 F46 F47 F48 F49 F50 F51 F52 F53 F54 F55 F56 F57 F58 F59 F60 F61 F62 F63 F64 F65 F66 F67 F68 F69 F70 F71 F72 F73 F74 F75 F76 F77 F78 F79 F80 F81 F82 F83 F84 F85 F86 F87 F88 F89 F90 F91 F92 F93 F94 F95 F96 F97 F98 F99 F100 F101 F102 F103 F104 F105 F106 F107 F108 F109 F110 F111 F112 F113 F114 F115 F116 F117 F118 F119 F120 F121 F122 F123 F124 F125 F126 F127 F128 F129 F130 F131 F132 F133 F134 F135 F136 F137 F138 F139 F140 F141 F142 F143 F144 F145 F146 F147 F148 F149 F150 F151 F152 F153 F154 F155 F156 F157 F158 F159 F160 F161 F162 F163 F164 F165 F166 F167 F168 F169 F170 F171 F172 F173 F174 F175 F176 F177 F178 F179 F180 F181 F182 F183 F184 F185 F186 F187 F188 F189 F190 F191 F192 F193 F194 F195 F196 F197 F198 F199 F200 F201 F202 F203 F204 F205 F206 F207 F208 F209 F210 F211 F212 F213 F214 F215 F216 F217 F218 F219 F220 F221 F222 F223 F224 F225 F226 F227 F228 F229 F230 F231 F232 F233 F234 F235 F236 F237 F238 F239 F240 F241 F242 F243 F244 F245 F246 F247 F248 F249 F250 F251 F252 F253 F254 F255 F256 F257 F258 F259 F260 F261 F262 F263 F264 F265 F266 F267 F268 F269 F270 F271 F272 F273 F274 F275 F276 F277 F278 F279 F280 F281 F282 F283 F284 F285 F286 F287 F288 F289 F290 F291 F292 F293 F294 F295 F296 F297 F298 F299 F300 F301 F302 F303 F304 F305 F306 F307 F308 F309 F310 F311 F312 F313 F314 F315 F316 F317 F318 F319 F320 F321 F322 F323 F324 F325 F326 F327 F328 F329 F330 F331 F332 F333 F334 F335 F336 F337 F338 F339 F340 F341 F342 F343 F344 F345 F346 F347 F348 F349 F350 F351 F352 F353 F354 F355 F356 F357 F358 F359 F360 F361 F362 F363 F364 F365 F366 F367 F368 F369 F370 F371 F372 F373 F374 F375 F376 F377 F378 F379 F380 F381 F382 F383 F384 F385 F386 F387 F388 F389 F390 F391 F392 F393 F394 F395 F396 F397 F398 F399 F400 F401 F402 F403 F404 F405 F406 F407 F408 F409 F410 F411 F412 F413 F414 F415 F416 F417 F418 F419 F420 F421 F422 F423 F424 F425 F426 F427 F428 F429 F430 F431 F432 F433 F434 F435 F436 F437 F438 F439 F440 F441 F442 F443 F444 F445 F446 F447 F448 F449 F450 F451 F452 F453 F454 F455 F456 F457 F458 F459 F460 F461 F462 F463 F464 F465 F466 F467 F468 F469 F470 F471 F472 F473 F474 F475 F476 F477 F478 F479 F480 F481 F482 F483 F484 F485 F486 F487 F488 F489 F490 F491 F492 F493 F494 F495 F496 F497 F498 F499 F500 F501 F502 F503 F504 F505 F506 F507 F508 F509 F510 F511 F512 F513 F514 F515 F516 F517 F518 F519 F520 F521 F522 F523 F524 F525 F526 F527 F528 F529 F530 F531 F532 F533 F534 F535 F536 F537 F538 F539 F540 F541 F542 F543 F544 F545 F546 F547 F548 F549 F550 F551 F552 F553 F554 F555 F556 F557 F558 F559 F560 F561 F562 F563 F564 F565 F566 F567 F568 F569 F570 F571 F572 F573 F574 F575 F576 F577 F578 F579 F580 F581 F582 F583 F584 F585 F586 F587 F588 F589 F590 F591 F592 F593 F594 F595 F596 F597 F598 F599 F600 F601 F602 F603 F604 F605 F606 F607 F608 F609 F610 F611 F612 F613 F614 F615 F616 F617 F618 F619 F620 F621 F622 F623 F624 F625 F626 F627 F628 F629 F630 F631 F632 F633 F634 F635 F636 F637 F638 F639 F640 F641 F642 F643 F644 F645 F646 F647 F648 F649 F650 F651 F652 F653 F654 F655 F656 F657 F658 F659 F660 F661 F662 F663 F664 F665 F666 F667 F668 F669 F670 F671 F672 F673 F674 F675 F676 F677 F678 F679 F680 F681 F682 F683 F684 F685 F686 F687 F688 F689 F690 F691 F692 F693 F694 F695 F696 F697 F698 F699 F700 F701 F702 F703 F704 F705 F706 F707 F708 F709 F710 F711 F712 F713 F714 F715 F716 F717 F718 F719 F720 F721 F722 F723 F724 F725 F726 F727 F728 F729 F730 F731 F732 F733 F734 F735 F736 F737 F738 F739 F740 F741 F742 F743 F744 F745 F746 F747 F748 F749 F750 F751 F752 F753 F754 F755 F756 F757 F758 F759 F760 F761 F762 F763 F764 F765 F766 F767 F768 F769 F770 F771 F772 F773 F774 F775 F776 F777 F778 F779 F780 F781 F782 F783 F784 F785 F786 F787 F788 F789 F790 F791 F792 F793 F794 F795 F796 F797 F798 F799 F800 F801 F802 F803 F804 F805 F806 F807 F808 F809 F810 F811 F812 F813 F814 F815 F816 F817 F818 F819 F820 F821 F822 F823 F824 F825 F826 F827 F828 F829 F830 F831 F832 F833 F834 F835 F836 F837 F838 F839 F840 F841 F842 F843 F844 F845 F846 F847 F848 F849 F850 F851 F852 F853 F854 F855 F856 F857 F858 F859 F860 F861 F862 F863 F864 F865 F866 F867 F868 F869 F870 F871 F872 F873 F874 F875 F876 F877 F878 F879 F880 F881 F882 F883 F884 F885 F886 F887 F888 F889 F890 F891 F892 F893 F894 F895 F896 F897 F898 F899 F900 F901 F902 F903 F904 F905 F906 F907 F908 F909 F910 F911 F912 F913 F914 F915 F916 F917 F918 F919 F920 F921 F922 F923 F924 F925 F926 F927 F928 F929 F930 F931 F932 F933 F934 F935 F936 F937 F938 F939 F940 F941 F942 F943 F944 F945 F946 F947 F948 F949 F950 F951 F952 F953 F954 F955 F956 F957 F958 F959 F960 F961 F962 F963 F964 F965 F966 F967 F968 F969 F970 F971 F972 F973 F974 F975 F976 F977 F978 F979 F980 F981 F982 F983 F984 F985 F986 F987 F988 F989 F990 F991 F992 F993 F994 F995 F996 F997 F998 F999 F1000 F1001 F1002 F1003 F1004 F1005 F1006 F1007 F1008 F1009 F1010 F1011 F1012 F1013 F1014 F1015 F1016 F1017 F1018 F1019 F1020 F1021 F1022 F1023 F1024 F1025 F1026 F1027 F1028 F1029 F1030 F1031 F1032 F1033 F1034 F1035 F1036 F1037 F1038 F1039 F1040 F1041 F1042 F1043 F1044 F1045 F1046 F1047 F1048 F1049 F1050 F1051 F1052 F1053 F1054 F1055 F1056 F1057 F1058 F1059 F1060 F1061 F1062 F1063 F1064 F1065 F1066 F1067 F1068 F1069 F1070 F1071 F1072 F1073 F1074 F1075 F1076 F1077 F1078 F1079 F1080 F1081 F1082 F1083 F1084 F1085 F1086 F1087 F1088 F1089 F1090 F1091 F1092 F1093 F1094 F1095 F1096 F1097 F1098 F1099 F1100 F1101 F1102 F1103 F1104 F1105 F1106 F1107 F1108 F1109 F1110 F1111 F1112 F1113 F1114 F1115 F1116 F1117 F1118 F1119 F1120 F1121 F1122 F1123 F1124 F1125 F1126 F1127 F1128 F1129 F1130 F1131 F1132 F1133 F1134 F1135 F1136 F1137 F1138 F1139 F1140 F1141 F1142 F1143 F1144 F1145 F1146 F1147 F1148 F1149 F1150 F1151 F1152 F1153 F1154 F1155 F1156 F1157 F1158 F1159 F1160 F1161 F1162 F1163 F1164 F1165 F1166 F1167 F1168 F1169 F1170 F1171 F1172 F1173 F1174 F1175 F1176 F1177 F1178 F1179 F1180 F1181 F1182 F1183 F1184 F1185 F1186 F1187 F1188 F1189 F1190 F1191 F1192 F1193 F1194 F1195 F1196 F1197 F1198 F1199 F1200 F1201 F1202 F1203 F1204 F1205 F1206 F1207 F1208 F1209 F1210 F1211 F1212 F1213 F1214 F1215 F1216 F1217 F1218 F1219 F1220 F1221 F1222 F1223 F1224 F1225 F1226 F1227 F1228 F1229 F1230 F1231 F1232 F1233 F1234 F1235 F1236 F1237 F1238 F1239 F1240 F1241 F1242 F1243 F1244 F1245 F1246 F1247 F1248 F1249 F1250 F1251 F1252 F1253 F1254 F1255 F1256 F1257 F1258 F1259 F1260 F1261 F1262 F1263 F1264 F1265 F1266 F1267 F1268 F1269 F1270 F1271 F1272 F1273 F1274 F1275 F1276 F1277 F1278 F1279 F1280 F1281 F1282 F1283 F1284 F1285 F1286 F1287 F1288 F1289 F1290 F1291 F1292 F1293 F1294 F1295 F1296 F1297 F1298 F1299 F1300 F1301 F1302 F1303 F1304 F1305 F1306 F1307 F1308 F1309 F1310 F1311 F1312 F1313 F1314 F1315 F1316 F1317 F1318 F1319 F1320 F1321 F1322 F1323 F1324 F1325 F1326 F1327 F1328 F1329 F1330 F1331 F1332 F1333 F1334 F1335 F1336 F1337 F1338 F1339 F1340 F1341 F1342 F1343 F1344 F1345 F1346 F1347 F1348 F1349 F1350 F1351 F1352 F1353 F1354 F1355 F1356 F1357 F1358 F1359 F1360 F1361 F1362 F1363 F1364 F1365 F1366 F1367 F1368 F1369 F1370 F1371 F1372 F1373 F1374 F1375 F1376 F1377 F1378 F1379 F1380 F1381 F1382 F1383 F1384 F1385 F1386 F1387 F1388 F1389 F1390 F1391 F1392 F1393 F1394 F1395 F1396 F1397 F1398 F1399 F1400 F1401 F1402 F1403 F1404 F1405 F1406 F1407 F1408 F1409 F1410 F1411 F1412 F1413 F1414 F1415 F1416 F1417 F1418 F1419 F1420 F1421 F1422 F1423 F1424 F1425 F1426 F1427 F1428 F1429 F1430 F1431 F1432 F1433 F1434 F1435 F1436 F1437 F1438 F1439 F1440 F1441 F1442 F1443 F1444 F1445 F1446 F1447 F1448 F1449 F1450 F1451 F1452 F1453 F1454 F1455 F1456 F1457 F1458 F1459 F1460 F1461 F1462 F1463 F1464 F1465 F1466 F1467 F1468 F1469 F1470 F1471 F1472 F1473 F1474 F1475 F1476 F1477 F1478 F1479 F1480 F1481 F1482 F1483 F1484 F1485 F1486 F1487 F1488 F1489 F1490 F1491 F1492 F1493 F1494 F1495 F1496 F1497 F1498 F1499 F1500 F1501 F1502 F1503 F1504 F1505 F1506 F1507 F1508 F1509 F1510 F1511 F1512 F1513 F1514 F1515 F1516 F1517 F1518 F1519 F1520 F1521 F1522 F1523 F1524 F1525 F1526 F1527 F1528 F1529 F1530 F1531 F1532 F1533 F1534 F1535 F1536 F1537 F1538 F1539 F1540 F1541 F1542 F1543 F1544 F1545 F1546 F1547 F1548 F1549 F1550 F1551 F1552 F1553 F1554 F1555 F1556 F1557 F1558 F1559 F1560 F1561 F1562 F1563 F1564 F1565 F1566 F1567 F1568 F1569 F1570 F1571 F1572 F1573 F1574 F1575 F1576 F1577 F1578 F1579 F1580 F1581 F1582 F1583 F1584 F1585 F1586 F1587 F1588 F1589 F1590 F1591 F1592 F1593 F1594 F1595 F1596 F1597 F1598 F1599 F1600 F1601 F1602 F1603 F1604 F1605 F1606 F1607 F1608 F1609 F1610 F1611 F1612 F1613 F1614 F1615 F1616 F1617 F1618 F1619 F1620 F1621 F1622 F1623 F1624 F1625 F1626 F1627 F1628 F1629 F1630 F1631 F1632 F1633 F1634 F1635 F1636 F1637 F1638 F1639 F1640 F1641 F1642 F1643 F1644 F1645 F1646 F1647 F1648 F1649 F1650 F1651 F1652 F1653 F1654 F1655 F1656 F1657 F1658 F1659 F1660 F1661 F1662 F1663 F1664 F1665 F1666 F1667 F1668 F1669 F1670 F1671 F1672 F1673 F1674 F1675 F1676 F1677 F1678 F1679 F1680 F1681 F1682 F1683 F1684 F1685 F1686 F1687 F1688 F1689 F1690 F1691 F1692 F1693 F1694 F1695 F1696 F1697 F1698 F1699 F1700 F1701 F1702 F1703 F1704 F1705 F1706 F1707 F1708 F1709 F1710 F1711 F1712 F1713 F1714 F1715 F1716 F1717 F1718 F1719 F1720 F1721 F1722 F1723 F1724 F1725 F1726 F1727 F1728 F1729 F1730 F1731 F1732 F1733 F1734 F1735 F1736 F1737 F1738 F1739 F1740 F1741 F1742 F1743 F1744 F1745 F1746 F1747 F1748 F1749 F1750 F1751 F1752 F1753 F1754 F1755 F1756 F1757 F1758 F1759 F1760 F1761 F1762 F1763 F1764 F1765 F1766 F1767 F1768 F1769 F1770 F1771 F1772 F1773 F1774 F1775 F1776 F1777 F1778 F1779 F1780 F1781 F1782 F1783 F1784 F1785 F1786 F1787 F1788 F1789 F1790 F1791 F1792 F1793 F1794 F1795 F1796 F1797 F1798 F1799 F1800 F1801 F1802 F1803 F1804 F1805 F1806 F1807 F1808 F1809 F1810 F1811 F1812 F1813 F1814 F1815 F1816 F1817 F1818 F1819 F1820 F1821 F1822 F1823 F1824 F1825 F1826 F1827 F1828 F1829 F1830 F1831 F1832 F1833 F1834 F1835 F1836 F1837 F1838 F1839 F1840 F1841 F1842 F1843 F1844 F1845 F1846 F1847 F1848 F1849 F1850 F1851 F1852 F1853 F1854 F1855 F1856 F1857 F1858 F1859 F1860 F1861 F1862 F1863 F1864 F1865 F1866 F1867 F1868 F1869 F1870 F1871 F1872 F1873 F1874 F1875 F1876 F1877 F1878 F1879 F1880 F1881 F1882 F1883 F1884 F1885 F1886 F1887 F1888 F1889 F1890 F1891 F1892 F1893 F1894 F1895 F1896 F1897 F1898 F1899 F1900 F1901 F1902 F1903 F1904 F1905 F1906 F1907 F1908 F1909 F1910 F1911 F1912 F1913 F1914 F1915 F1916 F1917 F1918 F1919 F1920 F1921 F1922 F1923 F1924 F1925 F1926 F1927 F1928 F1929 F1930 F1931 F1932 F1933 F1934 F1935 F1936 F1937 F1938 F1939 F1940 F1941 F1942 F1943 F1944 F1945 F1946 F1947 F1948 F1949 F1950 F1951 F1952 F1953 F1954 F1955 F1956 F1957 F1958 F1959 F1960 F1961 F1962 F1963 F1964 F1965 F1966 F1967 F1968 F1969 F1970 F1971 F1972 F1973 F1974 F1975 F1976 F1977 F1978 F1979 F1980 F1981 F1982 F1983 F1984 F1985 F1986 F1987 F1988 F1989 F1990 F1991 F1992 F1993 F1994 F1995 F1996 F1997 F1998 F1999 F2000 F2001 F2002 F2003 F2004 F2005 F2006 F2007 F2008 F2009 F2010 F2011 F2012 F2013 F2014 F2015 F2016 F2017 F2018 F2019 F2020 F2021 F2022 F2023 F2024 F2025 F2026 F2027 F2028 F2029 F2030 F2031 F2032 F2033 F2034 F2035 F2036 F2037 F2038 F2039 F2040 F2041 F2042 F2043 F2044 F2045 F2046 F2047 F2048 F2049 F2050 F2051 F2052 F2053 F2054 F2055 F2056 F2057 F2058 F2059 F2060 F2061 F2062 F2063 F2064 F2065 F2066 F2067 F2068 F2069 F2070 F2071 F2072 F2073 F2074 F2075 F2076 F2077 F2078 F2079 F2080 F2081 F2082 F2083 F2084 F2085 F2086 F2087 F2088 F2089 F2090 F2091 F2092 F2093 F2094 F2095 F2096 F2097 F2098 F2099 F2100 F2101 F2102 F2103 F2104 F2105 F2106 F2107 F2108 F2109 F2110 F2111 F2112 F2113 F2114 F2115 F2116 F2117 F2118 F2119 F2120 F2121 F2122 F2123 F2124 F2125 F2126 F2127 F2128 F2129 F2130 F2131 F2132 F2133 F2134 F2135 F2136 F2137 F2138 F2139 F2140 F2141 F2142 F2143 F2144 F2145 F2146 F2147 F2148 F2149 F2150 F2151 F2152 F2153 F2154 F2155 F2156 F2157 F2158 F2159 F2160 F2161 F2162 F2163 F2164 F2165 F2166 F2167 F2168 F2169 F2170 F2171 F2172 F2173 F2174 F2175 F2176 F2177 F2178 F2179 F2180 F2181 F2182 F2183 F2184 F2185 F2186 F2187 F2188 F2189 F2190 F2191 F2192 F2193 F2194 F2195 F2196 F2197 F2198 F2199 F2200 F2201 F2202 F2203 F2204 F2205 F2206 F2207 F2208 F2209 F2210 F2211 F2212 F2213 F2214 F2215 F2216 F2217 F2218 F2219 F2220 F2221 F2222 F2223 F2224 F2225 F2226 F2227 F2228 F2229 F2230 F2231 F2232 F2233 F2234 F2235 F2236 F2237 F2238 F2239 F2240 F2241 F2242 F2243 F2244 F2245 F2246 F2247 F2248 F2249 F2250 F2251 F2252 F2253 F2254 F2255 F2256 F2257 F2258 F2259 F2260 F2261 F2262 F2263 F2264 F2265 F2266 F2267 F2268 F2269 F2270 F2271 F2272 F2273 F2274 F2275 F2276 F2277 F2278 F2279 F2280 F2281 F2282 F2283 F2284 F2285 F2286 F2287 F2288 F2289 F2290 F2291 F2292 F2293 F2294 F2295 F2296 F2297 F2298 F2299 F2300 F2301 F2302 F2303 F2304 F2305 F2306 F2307 F2308 F2309 F2310 F2311 F2312 F2313 F2314 F2315 F2316 F2317 F2318 F2319 F2320 F2321 F2322 F2323 F2324 F2325 F2326 F2327 F2328 F2329 F2330 F2331 F2332 F2333 F2334 F2335 F2336 F2337 F2338 F2339 F2340 F2341 F2342 F2343 F2344 F2345 F2346 F2347 F2348 F2349 F2350 F2351 F2352 F2353 F2354 F2355 F2356 F2357 F2358 F2359 F2360 F2361 F2362 F2363 F2364 F2365 F2366 F2367 F2368 F2369 F2370 F2371 F2372 F2373 F2374 F2375 F2376 F2377 F2378 F2379 F2380 F2381 F2382 F2383 F2384 F2385 F2386 F2387 F2388 F2389 F2390 F2391 F2392 F2393 F2394 F2395 F2396 F2397 F2398 F2399 F2400 F2401 F2402 F2403 F2404 F2405 F2406 F2407 F2408 F2409 F2410 F2411 F2412 F2413 F2414 F2415 F2416 F2417 F2418 F2419 F2420 F2421 F2422 F2423 F2424 F2425 F2426 F2427 F2428 F2429 F2430 F2431 F2432 F2433 F2434 F2435 F2436 F2437 F2438 F2439 F2440 F2441 F2442 F2443 F2444 F2445 F2446 F2447 F2448 F2449 F2450 F2451 F2452 F2453 F2454 F2455 F2456 F2457 F2458 F2459 F2460 F2461 F2462 F2463 F2464 F2465 F2466 F2467 F2468 F2469 F2470 F2471 F2472 F2473 F2474 F2475 F2476 F2477 F2478 F2479 F2480 F2481 F2482 F2483 F2484 F2485 F2486 F2487 F2488 F2489 F2490 F2491 F2492 F2493 F2494 F2495 F2496 F2497 F2498 F2499 F2500 F2501 F2502 F2503 F2504 F2505 F2506 F2507 F2508 F2509 F2510 F2511 F2512 F2513 F2514 F2515 F2516 F2517 F2518 F2519 F2520 F2521 F2522 F2523 F2524 F2525 F2526 F2527 F2528 F2529 F2530 F2531 F2

ONE package!

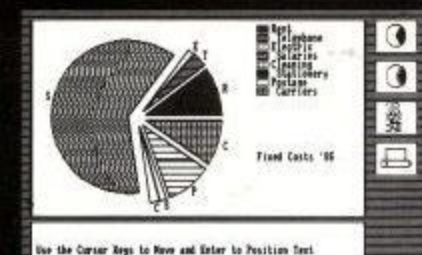
SPREADSHEET
Prepare budgets or tables, total columns or rows with ease, copy formulae absolutely or relatively, view in either 40 or 80 column modes, recalculate automatically – and more!

FreeSpace: 10872 Auto
Cell B9 (Locked)
Contents: B9: B2*B7

Down
Formula

	Jan	Feb
1		
2		
3	Electric 60.00	50.00
4	Telephone 130.00	125.00
5	Salaries 2450.00	2400.00
6	Postage 375.00	360.00
7	Carriage 420.00	380.00
8		
9	TOTALS	3845.00
10		

GRAPHICS
Enter data directly or load data from the spreadsheet, produce pie charts, display bar charts side by side or stacked, overlay line graphs – and more!



COMMS MODULE
Using a modem you can access services such as MicroLink and book rail or theatre tickets, send electronic mail, telex and telemessages in a flash – and more!

```

>br
*****
British Rail Service
Tickets / Fares / Timetable
*****

1  * Ticket Bookings
2  * Pullman/Steam Bookings
3  * Seat Reservations
4  * Sleeper Reservations
5  * Pullman Rail
6  * Steam Excursions
7  * Electric Express - Newsletter
8  * Timetable and Fares from May 18th

* No For HELP
1-B Rcdisplay Quit
Select
    
```

that can't be matched!

DATABASE SOFTWARE

FREEPOST, 68 Chester Road,
Hazel Grove, Stockport SK7 5NY.

Amstrad CPC 464, 664, 6128

Cassette £14.95
3" disc £19.95

PC and PCW

Versions for the
machine out soon

Order at any time of the day or night

Telephone Orders:
061-429 7931

Orders by Prestel:
Key *89, then 614568383

MicroLink/Telecom Gold
72:MAG001

Don't forget to give your name, address and credit card number

ENQUIRIES ONLY: 061-480 0171 9am-5pm

Please send me **Mini Office II**

*Add £2 for Europe
*Add £5 for Overseas

Cassette £14.95* 6086
3" disc £19.95* 6087

Payment: please indicate method (✓)

☐ Access/Mastercharge/Eurocard / Barclaycard/Visa

Card No.

☐ Cheque/PO made payable to Database Publications Ltd.

Name Signed

Address

Tel:

Please allow 28 days for delivery

ACUM010

TASWORD 6128

THE WORD PROCESSOR FOR THE AMSTRAD CPC 6128



TASWORD 6128
The Word Processor
© Tasman Software Ltd 1985

Print text file	P
Print with Data merge	D
Save text file	S
Load text file	L
Merge text file	M
Return to text file	R
Customise program	C
save Tasword	T
Erase file from disc	E
into Basic	B
check spelling	K
Install Tasprint	I

8 words 1 lines 8 characters 65276 characters free Drive A

^ move text left ^ delete word ^ start of text ^ fast scroll up
 ^ centre line ^ delete line ^ end of text ^ fast scroll dn
 ^ move text right ^ undelete line ^ start of line ^ word right
 ^ rejustify para (up) ^ clear text ^ end of line ^ word left
 ^ rejust line (m-o) ^ insert line/char ^ scroll up ^ scroll down

Mr J H Shears
17 High Street
Lockton Bay
Lancashire LA7 6LX

3rd February 1985

Dear John,

Thank you for your letter of the 31st January. I have corrected the first draft of the article and incorporated your suggested changes. It is a good thing TASWORD has a find and replace facility! You will see from the enclosed print out of the corrected draft that I have also made some other changes and I hope that you agree that they are an improvement. a

Line 16(Col 58)J on /M/N on /Insert off/Paging off/ESC for help/NORMAL CHARS

TAS-DIARY THE ELECTRONIC DIARY

TAS-DIARY for the Amstrad CPC 6128, 664 and 464 with disc drive disc **£12.90**

Keep an electronic day-to-day diary on disc! TAS-DIARY features a clock, calendar and a separate screen display for every day of the year. Each year stored on disc includes a memo pad and several note pages. TAS-DIARY is an invaluable aid to keeping records, reminders, and any other data which is related to that most valuable commodity of ours - time!

TASWORD 6128 THE WORD PROCESSOR

TASWORD 6128 for the Amstrad CPC 6128 disc **£24.95**

Brilliant value for money.

AMSTRAD ACTION December 1985.

A powerful and easy to use word processor and a superb data merge program.

AMTIX December 1985.

TASWORD 6128 is the word processor especially developed to utilise the extra memory in the CPC 6128.

The program uses ALL the additional 64K of memory in the CPC 6128 as text space. This means that text files can be around ten thousand words long.

TASWORD 6128 includes a built-in data merge program. Mail merge, in which a letter is printed any number of times, each individually addressed to a different person, is just one of the applications of this powerful facility.

The notepads are a unique feature of TASWORD 6128. Four separate notepads are available. Typing reminders and storing letter headings are just two possible applications for the notepads.

Up to one thousand characters can be stored in ten user definable keys allowing commonly used words, sentences, or even paragraphs to be typed with a single keypress.

TASWORD 6128 has comprehensive customisation features. These allow many of the program facilities to be changed to personal requirements. A customised program can be saved and includes the notepads and user definable keys.

TASWORD 6128 is fully compatible with TAS-SPELL and TASPRINT. It will also read in data from Masterfile 6128. It can even be used to enter and edit your own Basic programs.

With all standard and many extra word processing facilities TASWORD 6128 is the most powerful of the TASWORDS, for the Amstrad CPC computers.

TASWORD 464-D

THE WORD PROCESSOR - WITH MAIL MERGE!

TASWORD 464-D disc **£24.95**

This is the new TASWORD especially developed to utilise the capabilities of the CPC 464 and 664 disc drives. The additional facilities include a larger text file size and automatic on-screen disc directories during save and load operations. A major new feature is the mail merge facility. This gives multiple prints of your standard letters, forms, etc., with each copy containing, for example, a name and address automatically taken from a disc file containing the data. This data can be entered using TASWORD 464-D, or created using the Masterfile Program Extension package. A powerful and useful conditional printing facility is included - parts of a document can be printed according to user-specified criteria. TASWORD 464-D will only run on, and is only supplied on, disc.

TAS-SPELL

THE SPELLING CHECKER

TAS-SPELL disc **£16.50**
for the Amstrad CPC 464 and 664 running
TASWORD 464-D and for the CPC 6128 running
TASWORD 6128

Spelling mistakes and typing errors spoil any document whether it is a private letter or your latest novel. With TAS-SPELL you are free to be creative in the confident knowledge that your spelling won't let you down.

TAS-SPELL checks the spelling of TASWORD 464-D and TASWORD 6128 text files. TAS-SPELL has a dictionary of well over twenty thousand words which it compares with the words in your text. If a word is not recognised then the relevant part of your text is displayed with the suspect word highlighted. You can correct the word, ignore it (it might be a name), or even add it to the TAS-SPELL dictionary. Please note that TAS-SPELL will only work with TASWORD 464-D and TASWORD 6128.

TASWORD UPGRADES

TASWORD 464 and Amstrad owners: send your original cassette or disc (not the packaging) as proof of purchase and £13.90. Your original will be returned together with TASWORD 464-D or TASWORD 6128 on disc.

TASPRINT 464

THE STYLE WRITER

TASPRINT 464 cassette **£9.90** disc **£12.90**

A must for dot-matrix print owners! Print your program output and listings in a choice of five impressive print styles. TASPRINT 464 utilises the graphics capabilities of dot-matrix printers to form, with a double pass of the printhead, output in a range of five fonts varying from the futuristic DATA-RUN to the hand-writing style of PALACE SCRIPT. TASPRINT 464 drives the dot-matrix printers listed below and can be used to print TASWORD/ TASWORD 464 text files. TASPRINT 464 gives your output originality and style. Completely compatible with the 664 and 6128.

TASWORD 464

THE WORD PROCESSOR

TASWORD 464 cassette **£19.95**

"There is no better justification for buying a 464 than this program"
POPULAR COMPUTING WEEKLY,
NOVEMBER 1984

Your 464 becomes a professional standard word processor with TASWORD 464. Supplied complete with a comprehensive manual and a cassette which contains both the program and TASWORD 464 TUTOR. This teaches you word processing using TASWORD 464. Whether you have serious applications or simply want to learn about word processing, TASWORD 464 and the TUTOR make it easy and enjoyable.

TASCOPY 464

THE SCREEN COPIER

TASCOPY 464 cassette **£9.90** disc **£12.90**

A suite of fast machine code screen copy software for the CPC 464, 664 and 6128. Print high-resolution screen copies in black and white and also large 'shaded' copies with different dot densities for the various screen colours. TASCOPY 464 also produces 'poster size' screen copies printed onto two or four sheets which can be cut and joined to make the poster.

TASPRINT 464 and TASCOPY 464 drive the following dot-matrix printers:

AMSTRAD DMP1 MANMANN STARDMP501/5/515 SHINWA CP-80
EPSON FX-80 TALLY MT-80 BROTHER HRS COSMOS-80
EPSON RX-80 BROTHER M1009 DATA PANTHER AMSTRAD DMP2000
EPSON MX-80 TYPE III NEC PC-8023B-N DATA PANTHER II

TAS-SIGN

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

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

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

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

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

FOR
SALE
A BARGAIN
ACQUIRE WITHIN

Your Invitation To
A PARTY
at T and A's
Sat 9pm

ANNOUNCEMENT!
Tasman Software
have released
TAS-SIGN
the sign-maker!

PRIVATE

BEWARE
OF THE
DOG
PRIVATE
Out!

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

VOTE FOR ME

All prices include VAT and post and packaging

TAS-SIGN £29.95

FOR THE CPC 6128 AND PCW 8256/8512

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

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

Tasman
SOFTWARE

Available from good stockists and direct from:

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

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

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

NAME _____
ADDRESS _____

ITEM

PRICE

£ _____
£ _____
£ _____
£ _____

Outside Europe add £2.00 per item airmail.

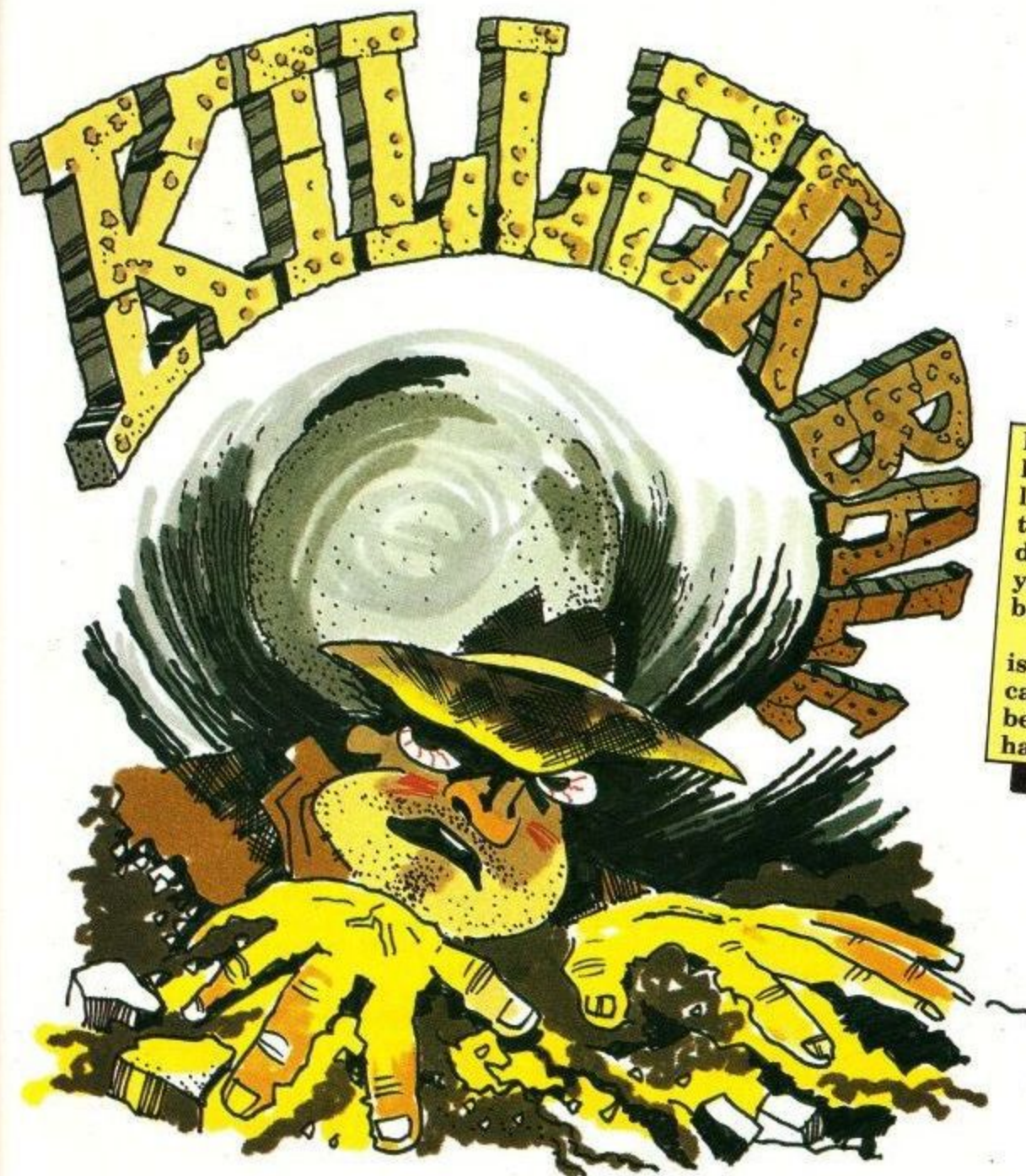
TOTAL £ _____

Telephone Access/Visa orders: Leeds (0532) 438301



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

Overseas: The following distribution of Tasman products may be contacted for the address of local suppliers. Many products are supplied in translated form. FRANCE & SWITZERLAND: Semaphore Logiciels, CH 1287 La Plaine, Geneva. SCANDINAVIA: Postboks 192, 1371 Adler, Norway. NETHERLANDS: Floortje, PO Box 1353, 9701 B1 Groningen. GERMANY: Postfach, Südhauser Str 50/52, D4500 Oberbruch, BEI/GUM Easy Computing, Avenue Gullayene Lefevre 30, 1160 Brussels. PORTUGAL: Informatica, Campo Grande 284A, 1700 Lisbon. AUSTRALIA: Dolphin Computers, Unit 2, 7 Waltham Street, Artarmon, New South Wales 2064. NEW ZEALAND: Software Supplies, PO Box 865 Christchurch. USA: Ramer International, 17620 26 Mile Road, Washington MI 48094. ITALY: Omega Soft, Via G. Pascoli 3, 24100 Bergamo. SPAIN: Ofertas Informatica, Avda Isabel 11, 16-B, 208 San Sebastian.



An arcade game in Basic and machine code from D.L. Lau.

EAT the dots and defeat the evil killaballs. You've got plenty of lives, and you're going to need them. The 'balls are savage. You don't even have total command - you control left and right, but the ball goes up and down by itself. This is a single load listing, but it is not checksummed - so please be careful typing it in. Save the game before running it. Good luck and have fun.

```

10 REM      K I L L A B A L L S
20 REM      By D.L.Lau
30 REM ----- CPC -----
40 REM *** once only initialisation ***
50 MEMORY &7FFF:SPEED KEY 8,1
60 x=&8504:y=&8503:dir=&8505:disp=&8362:
  flag=&860B
70 CLS:INK 0,0:BORDER 0:INK 15,2,6:INK 9
  ,3,3
80 LOCATE 14,13:PRINT"PLEASE WAIT ....."
90 FOR f=&8021 TO &8032:READ a:POKE f,a:
  NEXT
100 DATA 0,1,1,1,1,0,1,1,1,0,1,1,1,
  1,0
110 FOR f=&8020 TO &819D STEP 20:POKE f,
  1:POKE f+19,1:NEXT
120 FOR f=&819D TO &81B0:POKE f,1:NEXT
130 ENT 3,100,5,1,50,2,2:ENV 1,19,-1,30,
  26,-3,10:ENT -1,50,-1,3:ENV 5,8,8,25
140 FOR f=0 TO 8:READ a:POKE f+&A000,a:N
  EXT
150 DATA 3,0,0,50,0,0,7,2,0
160 REM ***** characters' data *****
170 FOR f=&8200 TO &82DF:READ a:POKE f,a
  :NEXT
180 DATA 4,12,12,8,76,12,28,44,76,12,44,
  12,12,204,44,12,12,28,204,12,12,28,1
  2,140,28,44,12,140,4,12,12,8
190 DATA 4,12,204,8,12,76,12,12,44,76,12
  ,12,44,76,60,44,28,60,140,28,12,12,1
  40,28,12,12,140,12,4,204,12,8
200 DATA 17,51,252,34,51,118,51,51,57,11
  8,51,51,57,118,51,51,57,118,60,57,54
  ,60,185,54,51,51,185,51,17,252,51,34
210 DATA 17,51,51,34,118,51,54,57,118,51
  ,57,51,51,252,57,51,51,54,252,51,51,
  54,51,185,54,57,51,185,17,51,51,34
220 DATA 69,195,252,168,68,237,207,203,1
  99,207,237,222,237,12,201,214,237,23
  7,146,220,233,204,48,214,237,204,195
  ,204,84,252,252,136
230 DATA 0,0,0,0,0,0,0,0,0,0,0,0,16,32
  ,0,0,16,32,0,0,0,0,0,0,0,0,0,0,0,0
240 DATA 0,64,128,0,85,234,213,170,85,23
  4,213,170,193,144,96,192,192,144,96,
  192,85,234,213,170,85,234,213,170,0,
  64,128,0
250 GOTO 1970
260 REM *****
270 Lev=1:sc=0:li=5:scr=1:ball=1:POKE &8
  605,1
280 REM ***** print screen *****
290 POKE &8600,0:FOR f=&854A TO &854E:PO
  KE f,0:NEXT
300 FOR f=&8551 TO &855A:POKE f,0:NEXT
310 MODE 0:ON scr GOSUB 670,880,1090,130
  0,1510
320 ad=&8035:FOR g=1 TO 18:READ a$:FOR f
  =1 TO 18:POKE ad,VAL(MID$(a$,f,1)):a
  d=ad+1
330 NEXT:ad=ad+2:NEXT
340 PEN 1:LOCATE 2,25:PRINT STRING$(18,C
  HRS(154))
350 FOR f=2 TO 24:LOCATE 1,f:PRINT CHR$(
  149):LOCATE 20,f:PRINT CHR$(149):NEX
  T
360 LOCATE 3,2:PEN 12:PRINT"Hi      Sc
  ":LOCATE 3,3:PEN 10:PRINT"Level"
370 LOCATE 20,25:PRINT CHR$(153):LOCATE
  1,1:PRINT CHR$(11):LOCATE 1,25:PRINT
  CHR$(147):LOCATE 1,1:PRINT CHR$(150
  ):LOCATE 20,1:PRINT CHR$(156)
380 PEN 1:LOCATE 2,1:PRINT STRING$(18,CH
  RS(154))
390 MOVE 20,345:DRAWR 596,0,3:MOVER 0,-2
  :DRAWR -596,0
400 PEN 4:LOCATE 5,2:PRINT hi:FOR f=1 TO
  li:CALL &8362,f+13,3,&8200:NEXT
410 CALL &8320
420 PEN 13:LOCATE 8,3:PRINT Lev
430 REM ***** reset *****
440 POKE x,2:POKE y,5:POKE dir,3:POKE &8
  501,&82:POKE &8500,0:POKE &8507,&21:
  POKE &8508,&80:POKE flag,0
450 CALL disp,2,5,&8200
460 REM ***** main loop *****
470 SOUND 2,478,200,7,5:FOR f=1 TO 700:1
  NK 2,6,26:NEXT:INK 2,20
480 CALL &9500:

```



```

490 FOR f=1 TO (sp-1)*30:NEXT
500 CALL @9000:PEN 3:LOCATE 14,2:PRINT P
    EEK(&8600)+sc:ON PEEK(flag) GOTO 520
    ,580
510 GOTO 480
520 REM ***** killed *****
530 SOUND 1,50,110,6,0,3
540 FOR f=1 TO 4:CALL @8362,PEEK(x),PEEK
    (y),@8200:FOR g=1 TO 150:NEXT
550 LOCATE PEEK(x),PEEK(y):PRINT " :FOR
    g=1 TO 140:NEXT:NEXT

560 LOCATE Li+13,3:PRINT " :Li=Li-1:IF L
    i=0 THEN 1910
570 GOTO 430
580 REM **** completion of screen ****
590 SOUND 4,478,450,0,1,1:INK 0,0,26:FOR
    f=1 TO 3000:NEXT:INK 0,0
600 LOCATE 1,25:FOR f=1 TO 25:SOUND 1,30
    0-(f*10),2,5:PRINT:NEXT
610 sc=sc+PEEK(&8600):lev=lev+1
620 IF lev=16 THEN MODE 1:LOCATE 2,12:PR
    INT " You cheated! There is no way
    you can complete this game without c
    heating.":FOR f=1 TO 2000:NEXT:GOTO
    1930
630 scr=scr+1:IF scr=6 THEN scr=1:ball=b
    all+2
640 POKE &8605,ball
650 Li=5
660 GOTO 280
670 REM ***** screen 1 *****
680 RESTORE 690
690 DATA 2222222222222222
700 DATA 2111211121211111
710 DATA 2222222222222222
720 DATA 2111212121112111
730 DATA 2223222222222222
740 DATA 1122211121111211
750 DATA 2222222222232222
760 DATA 2112212121122211
770 DATA 2221121212222222
780 DATA 2112221212121111
790 DATA 2111222221222222
800 DATA 2222211111212121
810 DATA 2122122222222212
820 DATA 2121121111211222
830 DATA 2122222222222112
840 DATA 2221221212121212
850 DATA 1122122221222112
860 DATA 1132222222222222
870 POKE &8601,214:RETURN
880 REM ***** screen 2 *****
890 RESTORE 900
900 DATA 2222222222222222
910 DATA 2112211211221111
920 DATA 2112222222221222
930 DATA 2221112121212112
940 DA
900 DATA 2222222222222222
910 DATA 2112211211221111
920 DATA 2112222222221222
930 DATA 2221112121212112
940 DA
900 DATA 2222222222222222
910 DATA 2112211211221111
920 DATA 2112222222221222
930 DATA 2221112121212112
940 DATA 1112222222222112
950 DATA 2221211212121212
960 DATA 2112122221222222
970 DATA 2112212121321211
980 DATA 2222232122212222
990 DATA 1211122222121212
1000 DATA 2222212111222222
1010 DATA 2112212222221221
1020 DATA 2122222121121212

1030 DATA 222111321122222222
1040 DATA 2121222222322221
1050 DATA 2122211222121222
1060 DATA 2221122221122222
1070 DATA 112222222222231
1080 POKE &8601,218:RETURN
1090 REM ***** screen 3 *****
1100 RESTORE 1110
1110 DATA 2222222222112222
1120 DATA 2112211222112121
1130 DATA 2122222222222222
1140 DATA 2221221122211211
1150 DATA 2222222222222222
1160 DATA 2113211121121112
1170 DATA 2222222221222222
1180 DATA 3212212222222123
1190 DATA 2212112112112122
1200 DATA 2222222222222112
1210 DATA 1112322211212222
1220 DATA 2222122222223222
1230 DATA 2121221212122121
1240 DATA 2222222222222222
1250 DATA 3122122122112112
1260 DATA 2222221222212222
1270 DATA 11321122211222221
1280 DATA 222222222222311
1290 POKE &8601,227:RETURN
1300 REM ***** screen 4 *****
1310 RESTORE 1320
1320 DATA 2221221222111222
1330 DATA 2212122121122222
1340 DATA 2212222212112111
1350 DATA 2112332222122222
1360 DATA 2222111122222112
1370 DATA 2221222222222222
1380 DATA 1121222122121122
1390 DATA 2222111122212112
1400 DATA 2111223121112332
1410 DATA 212222222222212
1420 DATA 2122112212222222
1430 DATA 2222222121112122
1440 DATA 1112231122222221
1450 DATA 3222222212321221
1460 DATA 2212121222222222
1470 DATA 2212122121212122
1480 DATA 2112222322222222

1490 DATA 2222222222231111
1500 POKE &8601,223:RETURN
1510 REM ***** screen 5 *****
1520 RESTORE 1530
1530 DATA 2222221111222222
1540 DATA 2111221331221111
1550 DATA 2122321221232212
1560 DATA 2122222222222212
1570 DATA 2221212122121222
1580 DATA 2222221221222222
1590 DATA 1112211221122111
1600 DATA 2222222222222222
1610 DATA 2211212111212122
1620 DATA 2232212233212232
1630 DATA 1222112222212221
1640 DATA 1222221111222221
1650 DATA 2211222222221122
1660 DATA 221321123321123122
1670 DATA 21122112221122112
1680 DATA 2112222222222112
1690 DATA 2221221221221222
1700 DATA 1132222222222311
1710 POKE &8601,216:RETURN
1720 REM ***** title *****
1730 GOSUB 670:ad=@8035:FOR g=1 TO 18:RE
    AD a$:FOR f=1 TO 18:POKE ad,VAL(MID
    $(a$,f,1)):ad=ad+1:NEXT:ad=ad+2:NEX
    T
1740 POKE &8600,0:FOR f=@854A TO @854E:P
    OKE f,0:NEXT:POKE x,0:POKE y,0

1750 MODE 0:PEN 1:PRINT"K I L L A B A L
    L S"
1760 PEN 2:LOCATE 6,3:PRINT"By D.L.Lau":
    PEN 12:LOCATE 3,7
1770 PRINT"Steer your ball":PRINT:PRINT"
    left or right to":PRINT:PRINT"col
    lect white dots."
1780 PEN 4:PRINT:PRINT" Avoid your enemi
    es":PRINT:PRINT"and flahing objects
    ."
1790 PEN 3:PRINT:PRINT" Use left and rig
    ht":PRINT:PRINT"cursors or joystick
    ."
1800 PRINT:PRINT" for steering."
1810 PEN 7:PRINT:PRINT" Space bar to sta
    rt."
1820 POKE &8605,5
1830 CALL @9500:IF INKEY(47)<>0 THEN 183
    0
1840 FOR f=1 TO 25:LOCATE 1,1:PRINT CHR$
    (11):NEXT
1850 MODE 1:LOCATE 8,10:PRINT"Input spee
    d level (1 to 10)"
1860 PRINT:PEN 2:PRINT" 1 is supe
    r impossibly fast"
1870 PRINT" 10 is super boringly s
    low"
1880 PEN 1:LOCATE 20,16:INPUT sp
1890 IF sp<1 OR sp>10 THEN LOCATE 20,16:
    PRINT SPACES(20):GOTO 1880
1900 GOTO 270
1910 REM ***** game over *****
1920 PEN 14:LOCATE 7,14:PRINT"GAME OVER"
1930 sc=sc+PEEK(&8600)
1940 IF sc>hi THEN hi=sc
1950 FOR f=1 TO 1500:NEXT:GOTO 1740
1960 REM
1970 REM ** M/C for printing screen **
1980 RESTORE 1990:FOR f=@8320 TO @838A:R
    EAD a$:POKE f,VAL("&"a$):NEXT
1990 DATA 21,21,80,E,5,6,2,7E,C5
2000 DATA E5,69,60,FE,1,28,1A,FE,2,28
2001 DATA 1E,FE,3,28,22,E1,23,C1,4,78
2002 DATA FE,14,20,E6,C,79,FE,19,C8,23
2003 DATA 23,18,DB,11,80,82,CD,6E,83,18
2004 DATA E6,11,A0,82,CD,6E,83,18,DE,11
2005 DATA C0,82,CD,6E,83,18,D6,DD,5E,0
2006 DATA DD,56,1,DD,6E,2,DD,66,4,25
2007 DATA 2D,CD,1A,BC,6,4,E,8,C5,E5
2008 DATA 1A,AE,77,23,13,10,F9,E1,1,0
2009 DATA 8,9,C1,D,C2,77,83,C9
2100 REM ***** ball M/C *****
2110 adr=@8FFF:FOR f=1 TO 56
2120 READ byte$
2130 FOR g=1 TO 20 STEP 2
2140 POKE adr,VAL("&"MID$(byte$,g,2))
2150 adr=adr+1:NEXT:NEXT
2160 DATA 003E00320D86CD1BBBF
2170 DATA F32811FEF22814CD24BB
2180 DATA FE082806FE042809180C
2190 DATA 3E02320D8618053E0432
2200 DATA 0D863A0585FE04CA0191
2210 DATA FE02CA8E90FE03CACA90
2220 DATA 3A0D86FE02CC3D913A0D
2230 DATA 86FE04CC51913A0385FE
2240 DATA 06CA629111ECFFC0C591
2250 DATA 2A07867EFE01CA6291FE
2260 DATA 03CA2092FE02CC6E912A
2270 DATA 07862207852A03857D3D
2280 DATA 320385ED5B0085CD6E83
2290 DATA CDB2912A0385ED5B0085
2300 DATA C36E832A078511140019
2310 DATA 7EFE00CAEF91FE02CAEF
2320 DATA 91110100C0C5912A0786
2330 DATA 7EFE01CC5191FE03CA20
2340 DATA 92FE02CC78912A078622
2350 DATA 07852A03857C3C320485

```


2360 DATA C37A903A0D86FE02CC3D
 2370 DATA 913A0D86FE04CC519111
 2380 DATA 1400C0C5912A07867EFE
 2390 DATA 01CA6891FE03CA2092FE
 2400 DATA 02CC82912A0786220785
 2410 DATA 2A03857D3CC377902A07
 2420 DATA 85111400197EFE00CA04
 2430 DATA 92FE02CA049211FFFFCD
 2440 DATA C5912A07867EFE01CC3D
 2450 DATA 91FE03CA2092FE02CC8C
 2460 DATA 912A07862207852A0385
 2470 DATA 7C3D320485C37A902A07
 2480 DATA 85237EFE01C8FE03CA1F
 2490 DATA 923E02320585E1C92A07
 2500 DATA 852B7EFE01C8FE03CA1F
 2510 DATA 923E0418EA3E03320585
 2520 DATA C93E01320585C92A0385
 2530 DATA 2DE511ECFF181E2A0385
 2540 DATA 24E511010018142A0385
 2550 DATA 2CE5111400180A2A0385
 2560 DATA 25E511FFFF18002A0785
 2570 DATA 19AF77E13A0186473A00
 2580 DATA 863C8BCA199232008611
 2590 DATA A082C36E833A0085FE00
 2600 DATA 28063E00320085C93E20
 2610 DATA 320085C93A0586320A86
 2620 DATA 2A078519220786215185
 2630 DATA E55E23562A0786BFED52
 2640 DATA E1CA1F9223233A0A863D
 2650 DATA C8320A8618E63A0D86FE
 2660 DATA 02C262912A0785237EFE
 2670 DATA 01CA6291C3A0903A0D86
 2680 DATA FE04C262912A07852B7E
 2690 DATA FE01CA6291C313913E02

2700 DATA 320B86C9E13E01320B86
 2710 DATA C9C9E13E01320B86C900
 2720 REM ***** enemy M/C *****
 2730 adr=894FF:FOR f=1 TO 59
 2740 READ byte\$
 2750 FOR g=1 TO 20 STEP 2
 2760 POKE adr,VAL("&"+MID\$(byte\$,g,2))
 2770 adr=adr+1:NEXT NEXT
 2780 DATA 003A05863D320A86214A
 2790 DATA 85856F7EFE002817FE02
 2800 DATA CA8D95FE03CA1096FE04
 2810 DATA CA94963A0A86FE00C818
 2820 DATA DBED5F2E05FE1E380EFE
 2830 DATA 50381426132210862132
 2840 DATA 80181226082210862127
 2850 DATA 801808260D221086212C
 2860 DATA 802212862120853A0A86
 2870 DATA CB27856F364023368211
 2880 DATA 0F0019E05B1086D57323
 2890 DATA 7211200019E05B128673
 2900 DATA 2372214A853A0A86856F
 2910 DATA 3603114082E1C06E83C3
 2920 DATA 2095213085C03C97ED53
 2930 DATA 108614C09D9518262A03
 2940 DATA 85BFED52CA1F92215185
 2950 DATA CD3C97ED531286211400
 2960 DATA 197EFE02CACF96FE00CA
 2970 DATA CF962A1286C9237EFE01
 2980 DATA CAEE96C0CF951820FE03
 2990 DATA CA1197212085C03C97ED
 3000 DATA 5307862A1086C06E8321
 3010 DATA 30853A0A86CB27856FC9
 3020 DATA 5E2334CDF795181256EB
 3030 DATA E5CDF696E1C06E832151

3040 DATA 85CD3C9728C913732372
 3050 DATA C32095213085C03C97ED
 3060 DATA 5310861C2A0385BFED52
 3070 DATA CA2092215185C03C97ED
 3080 DATA 531286131AFE02CAB996
 3090 DATA FE00CAB9961B1B1AFE02
 3100 DATA CAC496FE00CAC4962A12
 3110 DATA 86111400197EFE01CAE8
 3120 DATA 96FE03CA1297212085CD
 3130 DATA 3C97ED5307862A1086CD
 3140 DATA 6E832130853A0A86CB27
 3150 DATA 856F345E2356EBE5CDF6
 3160 DATA 96E1CD6E83215185C03C
 3170 DATA 972BE521140019EBE173
 3180 DATA 2372C32095213085C03C
 3190 DATA 97ED53108615C09D952B
 3200 DATA 7EFE01CAF296CDF955E
 3210 DATA 2335CDF7951B732372C3
 3220 DATA 2095ED5FFE280602381A
 3230 DATA C33A96ED5FFE3C060438
 3240 DATA 0FC34796ED5FFE3C0603
 3250 DATA 3803C3BF95E13A0A8621
 3260 DATA 4A85856F7877C32095ED
 3270 DATA 5FFE3C3804060418E906
 3280 DATA 0218E53A0786FE402810
 3290 DATA 1E402120853A0A86CB27
 3300 DATA 856F731682C91E6018EE
 3310 DATA E1213085C03C97D52120
 3320 DATA 85CD3C97E1CD6E83214A
 3330 DATA 853A0A86856FAF772151
 3340 DATA 853A0A86CB27856F3600
 3350 DATA C320953A0A86CB27856F
 3360 DATA 5E2356C9000000000000
 3370 GOTO 1720

ACU

MICROSNIPS

37 Seaview Road · Wallasey · Merseyside L45 4QN
 24hr Ansaphone 051-630 3013

HIGHEST QUALITY CF-2
 3" DISCS
 MRP £29.95 FOR 10
ONLY £24.95
 FOR 10

20% OFF ALL SOFTWARE!

* FREE LIST WITH
 FIRST ORDER *

Don't forget -
 We have our
 own in-house
 repair service

HARDWARE

PC1512 SDMM	£479.00
PC1512 SDCM	£689.00
PC1512 DDMM	£589.00
PC1512 DDCM	£789.00
PC1512 20mHDMM	£999
PC1512 20mgbt (COLOUR)*	£1250.00
*Inc. 1yr on site maintenance	£1250(CM)
PC1640 from	£899
PC1512 DDMM+DMP 3000+	
SUPERCALC III + WORDSTAR 1512	
Saving £200	Package £769.95
CPC6128+COL/M	£379.95
CPC6128+MONO/M	£279.95
*CPC464+MONO/M	£179.95
*CPC464+COL/M	£279.95
*PLUS 12 FREE PROGRAMS	
PCW8256 INC. MON+PRINTER	£449.00
DMP4000 PRINTER	£379.00
DMP2000 PRINTER	£149.95
DMP3000 PRINTER	£169.00
CITIZEN 120D INC. £40 CENT. I/FACE	£199.95
PC HD CARD 30 mbyte	£489.00
TOP HAT 640K PC UPGRADE	£36.99

SOFTWARE

	DISC	TAPE	ROM
MINI OFFICE II (CPC)	16.99	12.99	-
TASWORD 6128	21.95	-	-
TASPRINT 464	11.50	8.50	-
TASPELL 6128	14.99	-	-
TASCOPY	11.50	8.50	-
ART STUDIO (CPC)	17.99	13.99	-
PROTEXT	-	17.50	32.00
MODEL UNIVERSE	16.00	-	-
POCKET WORDSTAR	39.95	-	-
TASWORD 464	21.95	17.95	-

ACCESSORIES

PC V21/V23 CARD MODEM + SOFT	£169.95
PCW 256K UPGRADE	£24.95
3" LOCKABLE DISC BOX (Holds 60)	£10.95
3" LOCKABLE DISC BOX (Holds 20)	£9.50
CPC TV TUNER	£69.00
AMX MOUSE/AMX ART	£59.00
AMX PAGEMAKER	£44.00
DIGITIZER FOR CPC	£75.00
KEMPSTON MOUSE + BLUEPRINT	£64.00

MULTIFACE TWO	£44.00
AMDRUM	£29.00
CPC RS232 INT + COMSTAR	£58.00
PSU/MODULATOR 464	£15.95
PSU MODULATOR 664/6128	£29.95
PCW LIGHT PEN	£69.95
FDI DISC DRIVE	£99.95
DDI DISC DRIVE *Check availability	£159.95
256K SILICON DISC 464 OR 6128	£72.50
6128 DATACORDER	£22.99
SSAI SPEECH/STEREO	£28.00
PCW AMX MOUSE + SOFTWARE	£69.95
TROJAN LIGHTPEN 6128 or 464	£19.95
CENTRONICS CABLE + SOFTWARE	£14.95
DMP 2000/3000 DUST COVER	£6.95
464 LUXURY DUST COVER	£6.99
DMP 2000 PRINTER RIBBON	£4.99
PCW PRINTER RIBBON	£4.99
DMP-1 PRINTER RIBBON	£4.99
POWER/MINITOR EXT. (CPC)	£8.95
LUXURY DUST COVER SET (CPC)	£19.95
LUXURY DUST COVER (PCW)	£14.99

We apologise for any alterations/omissions since going to press.

HOTLINE
051-691-2008
 or 24hr Ansaphone 051-630 3013

ORDER BY PHONE WITH
 Credit Charge

PART EXCHANGE WELCOME

If it's available - we stock it! Please Phone

OPEN 6 DAYS

FREE 20 Page Price List with first
 order QUOTE/AUI.

Postage and Packaging
 Items up to £20 add £1.00. Up to £50 add £2. Up to £100 add £3. For items over £100
 add £10 for Group 4 courier ensuring delivery to you the day after despatch.
 Overseas Customers: Full price shown will
 cover carriage plus free tax

Spreading the word

IN the centenary year of the international language Esperanto, a new branch – or Grupo to be exact – has been formed in London, and MicroLink is its chosen electronic route to the rest of the world.

About 52 million people worldwide – 8 million in Europe – speak the amalgam of Anglo-Saxon and Latinate tongues invented in 1887 by Polish doctor Ludovic Zamenhov. The Sud-Londona Esperanto-Grupo has been going for five months.

Secretary Gregory Porilo said: "We believe the time is ripe for a revival of interest in Esperanto. Not just because of its centenary, but also because it has been accepted as a subject for the new GCSE exams and is now the EEC's official language for basic translation.

"The South London branch of Esperanto is using MicroLink to further spread the word about the benefits of learning the language".

Typesetting over the line

LOW-COST, professional quality typesetting for everything from business cards to magazines is now available electronically on MicroLink.

Wordstream provides a 24-hours-a-day, seven-days-a-week service for companies and individuals who want to control their own printing and save on costs.

All subscribers need do is key in the text on their micro and send it via MicroLink's electronic mail system. It is switched elec-

tronically to Wordstream in Bournemouth who typeset the material and return the finished product by first class post or special delivery.

Text for typesetting can be prepared on an ordinary word processor by inserting special codes to specify typefaces, sizes and measures. Then it is transmitted to the Wordstream mailbox on MicroLink.

Special software automatically checks the text file to ensure that codes

are correct, and initiates processing immediately. Within 30 minutes a bromide repro for plate-making or camera is produced for despatch.

The service offers 155 typefaces from 4.5 to 72 point. The range includes expanded, condensed and italic type, variable letterfit, accents and fractions, and paper-saving multi column text.

Payment is by the foot length of repro and Wordstream registration is free on MicroLink.

SPEEDING THE FACTS

NEARLY 30 of Scotland's largest local authorities and six local government trades unions are communicating electronically via MicroLink.

The Scottish Local Government Information Unit was set up two years ago as an information research and publicity service for the organisations.

"We feed facts and fig-

ures in easily digestible format to well over 1,000 key elected officials and administrators", said the Unit's director Archie Fairley.

"In addition we are a source of local government information.

"MicroLink telex and electronic mail facilities will help us move all this information a lot faster than before".

Aid to trade

MICROLINK technology is helping improve trade links between Britain and the Third World.

Latest overseas businessman to take advantage of fast, efficient telex and electronic mail facilities is S.S.Wijayasinha.

He is managing director of Bureau-Matic, based in Abidjan, capital of the Ivory Coast, a former French colony in West Africa.

"My company imports computer accessories from various suppliers in the UK, but existing communications are not satisfactory", he said.

"Letters can take up to three weeks to arrive and the telephone service is very erratic.

"I plan to use MicroLink for all my international communications from now on because I know I can depend on its speed and reliability".

New Open University Club

LIKE many of the Open University's 70,000 plus students, electronics engineer Jim Hatton often feels a sense of isolation.

"I can't get to evening classes every week, I have little or no contact with other OU students, and though the instructors are very helpful they are also very busy and I dislike bombarding them with letters and phone calls", he said. Jim's solution – for

himself and other part-time students in the same situation – has been to form an Open University Club on MicroLink where people can communicate electronically about their courses.

"At a recent summer school I discovered that a lot of people like me can't get to the tutorials", he said. "But lots of us have micros and modems, so the technology for exchan-

ging ideas and opinions is there to be tapped.

"The Open University has a policy of encouraging self help groups where students can discuss problems and gain a greater understanding of their courses.

"I'm hoping that OU instructors will also log on to the Open University Club on MicroLink so that students can benefit from their input too".

EXOLON

FANTASTIC. Brilliant. Out of this world. I could play this all night. Stunning. What do you mean, it doesn't need a prescription? Well, I suppose they've taxed it.

A shoot-em-up along a planetscape has been done once or twice before, but not like this. This one had me going hammer-and-tongs for a whole afternoon. It's got everything an arcade junkie could want, targets, bombs, semi-auto weaponry, teleport, aliens, stunning colour graphics, simple controls and a few tricks which have you going "but that's impossible!". You still try to do it though.

The small suited figure (the figure, not the suit) brings to mind a Star Wars stormtrooper. But this time, it's you. Weaponry is simple, but effective. One semi-auto rifle with 100 round mags, and a 10 shot grenade launcher. The rifle is good for most of the aliens, and the grenade launcher takes care of everything but lasers and double rocket launchers (I think). Ammo dumps are all over the place, but if you DO run out, you is sunk anyways mate.

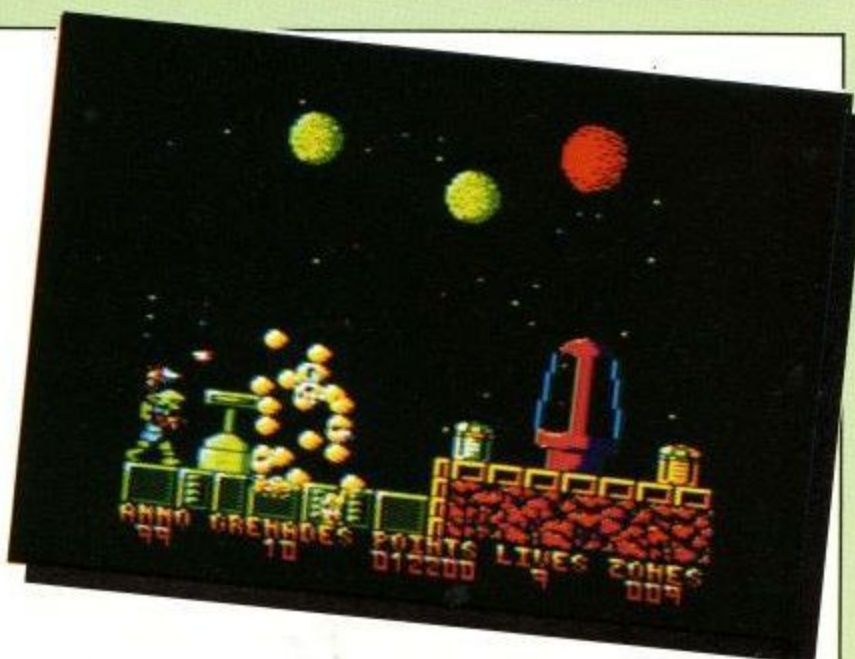
The little guy can go forwards, backwards, jump and bite dust. The rifle fires one shot at a time, and leaving the trigger down launches a grenade (it also wastes a bullet, winge winge). Grenades launch in a spectacular manner, dwarfed only by the explosions they cause, seemingly composed of glitter and malevolence. All this poetic exploding doesn't make up for the wee problem that while you're firing grenades, you're not shooting bullets.

The enemies, origin of whom is never fully explained, come in various nasty varieties. Blobs, grenades, jellyfish and so forth.

There's this pod of red blobs (a bit like a pod in defender, but more like a goldfish bowl full of gobstoppers) which disintegrates when you grenade it to release loads of the little beggars. You have to shoot it, 'cos its in the way.

The worst nasty I can remember defeating is the double rocket launcher. You blast, run forward, blast, duck, blast and run forward until you can jump over it.

An easy but spectacular obstacle is this force field thing that comes all down the screen. To blow its fuse, just pump rounds into it, and Wham! What an



explosion. You seem well padded enough to remain unscathed through it all.

After blasting your way through the first few screens you find the pink pod. This magically refits your suit and weaponry to something awesome (and you don't lose it when you lose a life either). The suit is now bullet-(but not alien) proof and the rifle is now a double-barrelled alien filth zapper. Very handy.

After a few more screenfuls of good 'ol mindless blasting you finish the level. Goodbye suit, sniff! In compensation, there is a bonus table, a bit like those things that you find on fruit machines (the ed is an addict, by the way). You know the sort of thing; a row of lights with writing like "Evens, double, triple, even more, zero" on them. And, just like fruit machines, guess which one it always lands on.

Still, to keep you occupied there are 125 levels. It really is possible to do them all (even level 87), but careful planning is required as you can't go backwards to get to that teleport that you desperately need to get up to the suit ...

This game is only for hip froods. Go out. Buy it. Now.

Author: Hewson

Price: £8.95

Nigel

I wondered what all the fuss was about until I played Exolon for a bit. I am delighted that Cliff has produced a poke for it. It may not make this issue though - look out for next month's mag.

Everything reeks of quality, the arc of the grenades, the flames from thrusters. Even the animation when your man dies. Whatever this chap programs next, I want to play it.

29/20

Liz

Good programmers like to work for good companies, so when Raffaele Cecco left Mikro-Gen (RIP), where he coded the excellent Equinox, he went to Hewson. The Abingdon software house is the one with the best name among programmers.

I found the force field on sheet 35 a bit tough, but

after I'd blasted it enough times it gave in. This has got a huge "just one more go" rating. The arcade equivalent must be something like Gryzor or Side Arms. Those machines have hardware sprites, so when Mr Cecco does everything in software and there is still no degradation in speed he must be a pretty nifty coder.

19/20

Colin

Now this is a game. I can go for. What it hasn't got, I don't want ('cept maybe the grenades on fire 2). Even in defeat, the guy in the tin suit flops well. This is very addictive, and fights fans will tear the office over this tape.

Even without the instructions (they're always lost

by the time the game gets as far as me), this were a good zap. Technique is important here, but if you think about it for too long, this thingy leaps out and grabs you. Methinks that this one, like Sorcery, Manic Miner, JSW etc. will run for ever.

19/20

SUN STAR

IF you find yourself dreaming about chain-link fences, pinning sheets of graph paper up on your bedroom wall and generally living a square-matrix oriented life, you are suffering from what we psychologists call a grid fixation. This game is for you.

Early in the 22nd Century it transpires that there is a small problem with the solar power stations set up to provide energy crystals for spaceships. The stations orbit stars, and due to a build-up of unstable disruptive energy pulses (watch out for the radioactive lentils) it has become impossible for normal craft to collect these here crystals. Note the normal.

What is clearly needed is an abnormal craft. Sun Star is that craft, faster, more totally weaponed and redesigned to do the deed with only a modicum of personal jeopardy. But somebody's still got to fly it, and since it's an abnormal craft the job description clearly calls for an abnormal pilot.

Your card has been marked ever since you wrote a fan letter to Max Headroom's interior designer (... love those parallel lines) as a griddie. Climb into that cockpit, six eyes, and learn the ropes.

Staring out of the window reveals a universe of squares as far as the optical reception organ can perceive. Most of these squares are blank, but some are filled in with yellow or blue to show the walls of the maze-like grid upon which the game is played out. There are also white, green and red squares, which represent disruptor pulses, energy crystals and ordinary pulses. Fire on a disruptor pulse, and it will leap to a new part of the grid leaving behind it a green crystal for you to pick up.

Leave a crystal too long, and its resultant disintegration will set up matrix resonances that make all your previously collected rocks go poof. Wonder if they're dilithium? You can (and indeed should) collect 10 of these pebbles before heading for the hyperwarp cell (they must be dilithium) and migrating to a new section of the grid. The hyperwarp cell can also recharge your batteries, and adds a little extra sage and onion to the



game by being hidden in the middle of an almost impenetrable square. There is a way in, but it's very small and moves.

There are a few guidance systems to systematically guide you. To the left is a "from the top" view of your immediate vicinity, and to the right a much larger schematic map of you and the things that surround you. Both are purty damn useful. There's also a meter for you to watch as your energy runs down, and indicators to track objects. Good stuff, all of them.

Tactics? If you must play to win, try and get to know the maps intimately. There's a lot going on, and not all that much energy to spread about, so try and get the fastest circuits off pat. And if he won't give them to you, do it yourself.

Author: CRL

Price: £8.95 (tape) £14.95 (disc).

Nigel

Guess who's discovered the magic of the palette register? The between-games screen of Sun Star is by far the most potent argument against colour I've ever seen. Urgh.

The game itself, while a little on the blocky side (no

finely detailed sprites here), is much easier on the eyeball. It's also infuriating and enjoyable, but a little more technical cleverness in the conversion could have produced some much more impressive graphics. Doesn't affect the playability though.

17/20

Liz

My feelings towards this game varied from the impressed (nice loading screen) to the appalled (the attract mode was horrendous) to the unimpressed (that's the playing screen?) back to the appreciative again (one more game won't hurt... ahem).

I'm writing this in the appreciative mode, which

must mean the game has something to recommend it even if the physics in the game description is as genuine as an Arthur Daley guarantee. Why Sun Star? Would you buy a game called Guardian Daily Telegraph?

16/20

Colin

Humm... Tron light cycles, no not quite, it may look like Trail blazer but that doesn't fit the bill either. Sun Star is a different game, and certainly very addictive.

You don't need the six eyes my friend has referred to, but the usual homo sapiens quota is an eye too few.

There is a fair sense of being on the grid, and in many ways it feels a bit like Ballblazer, the smigin of panic, the feeling of being lost and that there is something out there trying to get you.

18/20

BASKETBALL

Well, you sure picked the wrong person to do a review of a two-man basketball game. I'm so short I have difficulty in reaching the fire button on the joystick. Still, any fool can manage this, load it up, joystick option, one player ("novice" level), bingo.

Teensy sprites are the order of the day, the players being about 10 pixels high in mode one. The players could best be described as "ethnic", as the only colours used are blue, yellow, black and brown. No palette switching and, while I'm wingeing, only one third of the screen is used to play on.

Anyway, one side or another gets the ball and bounces it up and down on his/her (the graphics aren't *that* detailed) foot. Completely ignoring the pain, and completely beyond your control (attempts to move at this point cause a noise best described as breaking wind) everybody charges off down the field.

There is no way of telling which is your bloke, and which is the one the computer is playing. The only way of finding out is to whip the joystick round and see who does the breakdance. And he still doesn't drop the ball!

Ok, I've got the ball. Charge! What does "Team foul" mean? Come off it ref. He hit my fist with his groin. Other side then have a bash at what I just did, but with the result "Professional foul". Very professional. So bleeding professional even I didn't see how I did it.

Trying to pass the ball is fun. "Press the fire button briefly" it says. My bloke then tries a shot. From the half way line. It missed (you'd never have guessed). One in three presses seem to be just brief enough to pass instead of shoot.

I suppose you want to know how you shoot then eh?



Well, you press the fire button. Very skilful that. Even if your sprite is facing the other way, he spins round through 180 degrees and whangs it at the net. You have no control over this whatsoever, all you have to do is get as close as possible to the net, which gives you a better chance of scoring, trying all the time to avoid messages like "3 second penalty", "Charging", "No eye-spiking or spitting" and so on.

One of the biggest let-downs is the lack of shadows. I know they're difficult to program in, but when you're playing a 3D game, it's very nice to know if the ball is on the ground in the top left, or 10 feet up in the air top right. You've gotta know where your balls are.

Author: Activision

Price: £14.95 disc, £9.95 tape

Nigel

Basketball is a fast, exciting game, so how Activision has managed to portray it as awkward and confusing I don't know. There is all the jargon and the computer is just too damn good. Sports simulations are last years fad.

By looking around the arcades I predict that things are going to get more violent. This months crop of games from Activision has done a lot of harm to a previously good reputation (built on Enduro racer). It can, and must, do better.

6/20

Liz

I've never been one for basketball simulations, I even found the Amiga version of One-on-one a disappointment. I suspect it is because basketball is too complicated a game to simulate with just one joystick, you need a track ball and a number of

"move" buttons at the very least.

The programming is uninspired, and the sprites a fair bit too small. Certainly not worth the full price Activision is asking.

7/20

Colin

Perhaps the true spirit of this game can be told by the fact that I couldn't find anyone sufficiently enthused to partner with me. I've played Atari basketball before, and that knocks this little lot into a cocked hat thank you very much.

The Atari job never had as much detail in it, but was infinitely more playable. Maybe if you like or understand real basketball, you'll get on better than I did. This one gets nine out of ten - on the "Yeuch" scale.

8/20

GAME OVER

THIS game gained a certain infamy even before it hit what passes for streets around here. Let's not be too prissy, it was the amazing vanishing nipples that did it – the original adverts for Game Over featured a female with those attributes prominent, as they say. Later adverts were modified to omit them, however those who care passionately about matters mammary will be relieved by the loading screen. I'm glad I've got that off my chest...

Somebody shouted: "But what about the game?". Thank you, sir. Having dispensed with the sex, I'm happy to report that the violence is left untouched. A hero, Arkos by name, was once the right hand man (man isn't exactly specified, but given the undeniable nature of the aforementioned attributes, I feel we can take it as read that the protagonists in the plot are as close to homo sapiens as makes no discernable difference) of the absolute ruler of these parts, Gremla. And what do you mean, you've forgotten the beginning of the sentence?

Together, this team was tri-nitrotoluene. None could stand before them. They could even spell invincible. But power corrupts, and absolute power makes you forget about arms deals. In short, Ramleg lost her marbles, and Arkos is set to do her in and set the galaxy to rights.

As is the norm in these sort of games, the dramaturgists dash around a scene set with platforms, lifts, and other architectural acoutrements. LaMarg has a formidable army of robots, which glide and swoop around the place, loosing off bolts of an un-named and unhealthy nature.

As Arkon has a limited energy supply, and each bolt drains a unit, he is understandably keen to indulge in a little discorporation. He is kitted out with a gun and grenades, both of which have this much desired anti-robot feature.

Robots can also be sent to their maker by physical contact. This activity is also a tad draining on Arkos, who loses three times as much energy this way than by sitting there and absorbing bolts. As luck would have it,



there are containers with extra energy about the place, and three shots from Arkos' gun opens them up.

Identical containers contain extra grenades, power, invulnerability shields (with very vulnerable batteries) and the odd mine. These last objects are deadly to Arkos, but as he can't tell what lies in wait until he opens the container...

I forgot to mention the laser bases, green monsters, ships, Giant Orko and his mate, the Giant Robot. And possibly I omitted to mention the Giant Guardian, the Leiser-Freisers and the Kaikas. This last mob live on the second planet to be visited (and to be loaded off tape), Skunn.

The first planet, called Hypsis, is a mere playground on which Arkos can sharpen up his lets-fall-down-dead routine. He's going to do a lot of that. Hypsis is linear – the action progresses from left to right in Manic Miner fashion. Skunn is more your Wet Set Jelly pattern, the rooms are connected top and bottom as well as left and right.

Get the picture? Arkos has got the picture. And the laser bolts. And the undivided attention of the Giant Orko. But will he get the girl?

Author: Imagine

Price: £8.95

Nigel

I wanted, begged, abjected myself most horribly to review this game. I even gave Liz her Konix back, and all on the basis of seeing a screen over the Ed's bony shoulder. The graphics are horribly good, as the room switch rather than scroll give the Z80 time to animate an unreasonably large

number of unreasonably well-designed sprites.

But the game is just 2Dam difficult. Too many lasers, too few lives. But true zapheads will enjoy it, and get a fulsome sense of achievement after completing a screen. Imagine(1984) get better and better

19/20

Liz

Dinamic certainly knows where they are coming from. Other than Span that is. That is the Spanish company which has tied up a deal with Imagine to sell its software over here.

Imagine has got a good deal. The program is

excellent. It is difficult, you could do with several more lives, going back to the beginning every time you die is a real pain. Obviously from the same stable as Army Moves.

17/20

Colin

Crouch, jump, sweat, zap. A demanding game, this 'un. Full of irksome promise, too, as lifts drift out of sync, mines blow you up and ten zillion zillion nasties converge on your heroic last stand.

There are two games here; you get to play the

second, even more hairtearingly hard, after completion of the first. The consolation prize of an exceptionally pretty demise makes up for my ineptitude at winning. But I can't wait for Hairy Hacker's cheat sheet!

18/20

BBD
DUST
COVERS

THE AMSTRAD DUST COVER COLLECTION

BBD
DUST
COVERS

Tailored in nylon fabric that has been treated with an anti-static inhibitor. Attractively finished with contrasting piping. Can be washed and ironed.

PC 1512/1640 £9.00

2 piece set in ivory coloured nylon. Monitor piped in maroon AMSTRAD PC hot foil printed on keyboard cover. Please state colour or mono screen.

PCW 8256/8512 £11.95

3 piece set in soft grey. Monitor and printer piped in green. AMSTRAD PCW hot foil printed on keyboard.

CPC 464/664/6128 £7.50

2 piece set in dark grey nylon, monitor and keyboard piped in red. Model name hot foil printed on keyboard cover. Please state whether colour or mono screen.

PRINTER COVERS TO MATCH

A range of covers for over 200 printers to match any of the above covers eg. Amstrad 2000, 3000, 3136, 4000, Brother, Canon, Citizen, Epson, Mannesmann, Star, Ricoh, Smith-Corona, etc. Prices start from £4.50.



Please make cheques payable to:

BBD DUST COVERS

The Standish Centre, Cross Street, Standish, Wigan WN6

0HQ. Telephone: 0257 422968 (Ext. 152)

Fax 0257 423909

Dealer enquiries welcome.

Available in the Southern Hemisphere from TECH-SOFT

324 Stirling Highway, Claremont 6010 West Australia. Tel: (09) 385 1885

TREASURE ISLAND SOFTWARE

GRAPHICS AND DISPLAY SPECIALISTS

14 Arthur Street, Ampthill, Bedfordshire, MK45 2QQ 0525-405621

PARROTRY PLUS

- The unique and highly rated dynamic drawing and design program.
- The most versatile graphics software available for the CPC. A survey of users found nearly all used it as much as or more than other graphics packages, and in a wide variety of ways.
- Works in a refreshingly different way to ordinary art packages by remembering the artist's every move, which not only enables it to reproduce designs line by line to create fascinating graphics displays, but also provides many other benefits too.
- Achieves massive disc space savings - average file length only 4k.
- All files can be displayed from within your own Basic programs - making Parrotty Plus the ideal tool for adding graphics to your software. Designs can also be saved as normal screen dumps.
- Exclusive Data Handling section can manipulate designs in all sorts of ways; e.g. the Change Size command not only changes the size of a design by ANY factor, it can work independently horizontally and vertically AND on any section of the design.
- Parrotty Plus can Merge files, change the Mode of a design, repeat any part of a design any number of times and can readily produce simple Animation.
- Over half of Parrotty users have already updated to Parrotty Plus within two months - a recommendation in itself.

THE PARROTRY PLUS LIBRARY

- A really useful compliment to Parrotty Plus, containing a superb set of ready drawn characters and a selection of maps to save hours of repetitive work.
- Merge into other designs or use alone for titles.
- The characters can be used in all modes, changed to any size, reversed, inverted, rotated 90° and even "italicised".

Parrotty Plus £19.95 The Library £9.95
or both for £26.90

(All prices inclusive, overseas orders £1 extra please)
Supplied on disc for the CPC664 & 6128 ONLY

From NEMESIS (The Original Meddlers) BONZO SUPER MEDDLER (FOR ANY CPC)

THE dedicated TAPE TO DISC utility

NOW including the devastating

BONZO'S HACK PACK

THE FACTS

BONZO SUPER MEDDLER is GUARANTEED TO TRANSFER MORE GAMES THAN ANY OTHER PROGRAM; THE FIRST PERSON TO FIND A MORE SUCCESSFUL PROGRAM WILL RECEIVE THRICE THEIR MONEY BACK!! Sounds familiar? BONZO always could transfer more - FACT! BONZO SUPER MEDDLER will transfer "thousands", but WE include full details of how to transfer over 400 TOP GAMES.

MORE FACTS

BONZO SUPER MEDDLER does NOT use a massive "host" program to run the transferred games. ALL transfers "stand alone".

BONZO uses LESS memory, transfers MORE, COSTS LESS and gives REAL support to the user.

We'll allow you £2.00 for your old D.P. disc in part exchange!

BSM tapes upgraded to BSM+HACKPACK DISC... £8.00 (send inlay)

BSM & HACKPACK DISC £11.50. Only

NEW!

BONZO'S DOO - DAH

"This is the best I've seen in a long while... I recommend it"

- Amstrad Action, June 87

BIGBONZO FORMAT

Features

A REALLY USABLE 203K per SIDE FORMAT, complete with the essential disc file transfer facility without irritating restrictions - files of over 42K READILY transfer between any mix of FORMATS. FORMATS RAPIDLY including all standard.

A "NOTHING HIDDEN" FULL CATALOGUE. COMPLETE DIRECTORY EDITOR.

TRACK/SECTOR EDITOR - in HEX or ASCII. (A FULL SECTOR or DIRECTORY displayed to the screen, with easy EDIT mode).

FILE LOCATIONS by TRACK/SECTOR. RAPID DISC SEARCH - HEX-ASCII.

A WIDE RANGING DISC to DISC COPIER, PRINTER OUTPUT etc. etc.

ALL WORK ON NORMAL, ENLARGED, AND most "funny" formats.

FULL USE OF DRIVE A/B where fitted - no problem with one.

MANY UNIQUE FEATURES. Supplied on DISC £11.50

NEW BONZO BLITZ - NEW SPEEDLOCK's to DISC !!

Arkanoid, Army Moves, Xvious, Top Gun, BMX Sim, Donkey Kong, Mikie, Gpr Sim, Mag Max, Slapfight, Goonies, etc., NO PROBLEM! Just one key press!

DISC Only £10.00 Inc.

ALL WITH FULL INSTRUCTIONS. We give FULL after sales support and a regular NEWSLETTER.

Overseas please add £1.00 to total. ORDERS with cheque/postal, sent by return post:

NEMESIS (ACU)

10 Carlow Road, Ringstead, Kettering, Northants NN14 4DW.

CYCA LTD.

287 CALEDONIAN ROAD, LONDON N1E 1EG

TELEPHONE: 01-700 4004

AMSTRAD

Amstrad PC Compatibles	P.O.A. + VAT
CPC 464 Green	£173 +VAT
CPC 464 Colour	£260 +VAT
CPC 6128 Green	£260 +VAT
CPC 6128 Colour	£300 +VAT
DMP 2000 Printer	£139 +VAT
DMP 3000	£169 +VAT
PCW 8256	£399 +VAT
PCW 8512	£499 +VAT
Amstrad V21/23 Modem	£76 +VAT
CF2 Floppy Disc	£2.50 +VAT
CF2 DD Floppy Disc	£4.50 +VAT
Printer Ribbon DMP 2000	£4.00 +VAT
Printer Ribbon 8256/8512	£4.50 +VAT
JY2 Joystick	£11.00 +VAT
RS 232 Serial Interface	£43.00 +VAT
RS 232 with Software	£49.00 +VAT
CPS 8256 RS 232 (use with PCW 8256)	£59.00 +VAT
Amstrad FD 2	£139 +VAT
Amstrad DDI.1/464	£139 +VAT
MP1 Modulator/464	£17.00 +VAT
Sony 3.5" S/S DD	£1.90 +VAT
Sony 3.5" D/S DD	£2.90 +VAT
Sony 5.25 MD1D	£1.20 +VAT
Sony 5.25 MD2D	£1.70 +VAT
Sony 5.25 MD2DD	£2.75 +VAT
Sony 5.25 MD2HD	£3.00 +VAT
TLX 297761 BT1EQ G Relay to 01 700 4677	

CYCA LTD

287 Caledonian Road, London N1E 1EG

MAIL ORDER HOTLINE

01-700 4004



POOLSWINNER II

THE ULTIMATE POOLS PREDICTION PROGRAM

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

PRICE £15.00 (all inclusive)



NOW AVAILABLE

FIXGEN 87/8

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

POOLSWINNER with FIXGEN £16.50 (for both)

COURSEWINNER v3

THE PUNTERS COMPUTER PROGRAM

You can develop and test your own unique winning system by adjusting the analysis formula, or use the program in simple mode. Coursewinner V3 uses statistical analysis of major factors including past form, speed ratings, course statistics, prize money, weight, going, trainer and jockey form etc. etc. It outputs most likely winners, good long odds bets, forecasts, tricast etc. The database includes vital course statistics for all British courses. You can update the database - never goes out of date. FULL PRINTER SUPPORT.

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

NOT JUST A TIPSTER

PROGRAM. Coursewinner V3 can be used by experts and occasional punters alike.

ALL PROGRAMS AVAILABLE FOR: AMSTRAD CPCs, AMSTRAD PCWs, PC1512, ALL BBCs, ALL SPECTRUMS, COMMODORE 64/128. Supplied on tape (automatic conversion to disc) - except PCW and PC1512 (on disc - add £3.00).

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



phone 24 hrs



phone 24 hrs

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

(Send for full list of our software)

CASTLE OF EAGLES

A new graphical adventure game for the Amstrad CPC464

The game is set in Nazi Bavaria in 1944. Your mission is to gain entry into the "Castle of Eagles" which was built on a huge rock in the Bavarian Mountains. You and your partner have been dropped by parachute some 50 miles short of your original drop zone owing to the Aircraft having been shot up on route. You must make your way overland and get into the castle, find and photograph documents about the development of Germany's H Bomb replace the top secret documents and escape to safety with the film. You will be up against the elements, German Patrols and many other hazards.

ARE YOU UP TO IT.

CPC464 Tape send P.O. or Cheque for £4.95 to:

S & M SOFTWARE
P.O. BOX 332
LONDON SE15 3LE
PRICE INCLUDES P&P

SCHOOL SOFTWARE LTD.

FREE Catalogue Amstrad CPC, PCW PC1512, Commodore, BBC, IBM PC
Amstrad PCW - Business Software, School Admin. PC. 24 Hr. Visa/Access Hotline. Ring UK 010353 - 6149477 (Office Hours) or 010353-6145399 (lrl. 061-27994)

MAXI-MATHS

Amstrad PC, IBM PC, Amstrad 464, 664, 6128.

1. Triangles, 2. Angles, 3. Sin Cos Tan, 4. Rectangles, 5. Circles.

A highly interactive program such as Basic Geometry provides a very stimulating learning environment.

MAGIC MATHS (age 4-8)

CBM 64, All Amstrads, IBM PC

Addition and Subtraction. "A serious challenger to similar BBC programs and a good example of its type". Primary Teaching and Micros UK.

MATHS MANIA (age 8-12)

All Amstrads/CBM 64/IBM PC

Multiplication and Division. "It appeals to the age group. My son has been sneaking downstairs before breakfast to play". BBC CEEFAX review.

BETTER SPELLING (age 8-adult)

All Amstrads/CBM 64/BBC/IBM PC

"Well Organised Lessons. Educationally it is very strong" 8000 Plus.

BETTER MATHS (age 12-16)

All Amstrads/CBM 64/IBM PC

Rated in the top five in Amstrad Action educational survey.

CHEMISTRY (age 12-16)

All Amstrads/CBM 64/BBC/IBM PC

"Very ambitious in terms of the range of topics. High standard of questions." 8000 Plus.

BIOLOGY (age 12-16)

All Amstrads/CBM 64/BBC/IBM PC

"A good excuse to play with your computer and have fun while revising". Your Computer.

Mapwork Quiz (9-Adult) CPC, BBC, CBM 64

Playschool (3-7) CPC

Geography (12-17) CPC

Physics (12-16) CPC/PCW

School Administration PC1512/IBM

DISCS: £14.95 CASSETTES: £9.95

Direct MAIL ORDER 48 Hour Despatch

Send Cheque Visa/Access/ and Exp. Date

(£1.00 P&P) PC Versions Check Availability



Biology 1



SCHOOL SOFTWARE



Physics 1



SCHOOL SOFTWARE



Meadowvale Estate, Raheen, Limerick, Ireland. Tel: (UK) 010353-6149477 (office hours) or 010353-6145399. (lrl. 061-27994)

SEE DRILLER

AT

23-27 SEPTEMBER 1987
OLYMPIA LONDON

Sponsored by Personal Computer World and PC Week



PCW SHOW
STAND No. 3052

FEATURING

FREESCAPE™

FORGET WIRE-FRAME 3D.
FREESCAPE™ IS SOLID!

incentive
SOFTWARE LTD

2 MINERVA HOUSE, CALLEVA PARK, ALDERMASTON,
BERKSHIRE RG7 4QW (07356) 77288

CONVOY RAIDER

THE spray from the waves breaking over the bow drench the radar, the lookout post and, almost incidentally, you. Remember those long, slow, Sunday afternoons when there was nothing on the telly except horse racing, athletics the test card and an old WW2 naval escapade?

You thought the Atlantic was grey because it was an old film. No. The Atlantic is grey because it is cold and wet. Qualities it is trying, with some success, to imbue you with. As you raise your standard issue binoculars to your frozen face you recall with some affection Gremlin's *Convoy Raider*.

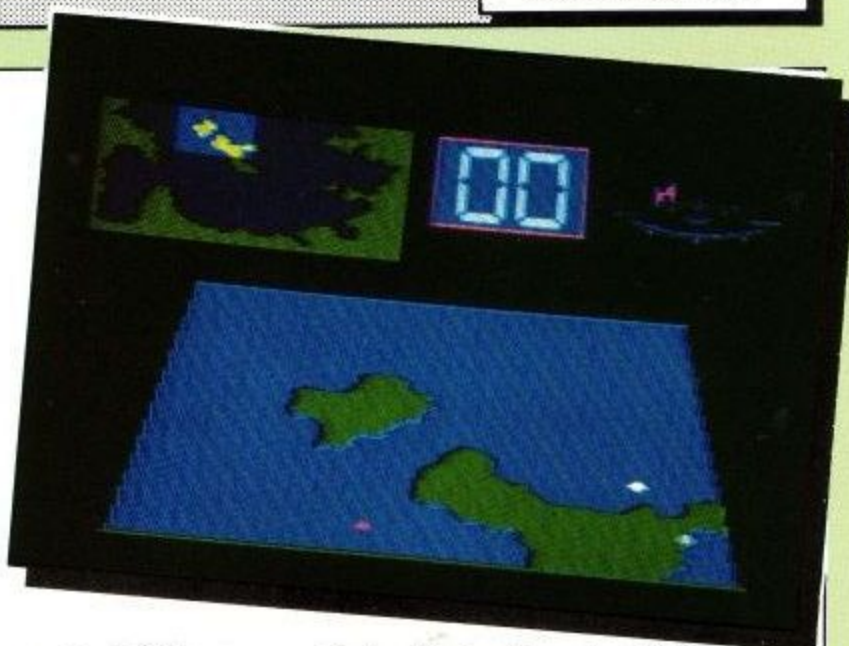
The game opens on three radar screens, representing the air, sea and submarine environments around your position. You can select a map (to show you where you are), a screen for firing Sea Wolf missiles, another for launching an Exocet and another for dropping depth charges. As you might suspect by now, these last three options are for disposing of enemy aircraft, frigates and submarines respectively. Or even reflectively, because (as Jennings might have put it), if you hit a guy with an Exocet it doesn't half give him something to reflect about.

As you push your way along atop Poseidon's watery realm, you stand a good chance of being noticed by the aforementioned enemy. Alternatively, you can go looking for them, as the map shows everything.

However you come together, as soon as your electronic defences spot 'em you will get an alert. Yellow alert doesn't mean much, but should any of your radar indicators go red, it's time for some serious shootings.

Say an aircraft comes bobbing along. Select Sea Wolf, and you will at once be plunged into a "here come the planes and there is your cursor" game, where you aim your cursor at a point where you think an aircraft might be some time in the near future and unleash a missile. It's all set against what would be a beautiful sky, if only there weren't these nasty bombers coming at you out of it. Ruins a quiet evening.

Alternatively, a warship might meander into mutual



mortar-lobbing range. Out with the Exocet, which you steer with your joystick until it hits the enemy. Whether it explodes or not is another matter, but in any case the impact of a barely subsonic missile filled with high-grade rocket fuel is enough to cause no little damage to the ship, which will shortly become a one-way submarine.

And talking of submarines, should you be lucky enough to spot one of those strange fish it's scramble the helicopter with the nuclear depth charges (one of those things which the MOD would rather not talk about, thank you very much) time. Spot the sub on the 3D sonar, and bomb the brown&sticky out of it. Of course, it can shoot little missiles of it's own at you should you come within anywhere near damaging it, but these choppers are nippy little things and you can always dodge.

Is this more fun than a saturated roll neck in the sub-Arctic? Or would you rather turn over and watch the horse racing? Why do these reviews always finish with a question? Why not?

Price : £8.95 (tape)

Author: Gremlin Graphics

Nigel

Once upon a time, I was involved with seaborne defence systems, and I've fired a SeaWolf in simulation. Nothing like this game, though, where the only odd thing that happens is that if you move the joystick up the cursor moves down. Similarly, in the fire an Exocet phase all you have to do is not touch the joystick and the missile hits. Boring.

The submarine bombing option is pretty dull, too. Add the facts that you don't see the score or your state of damage until you die and this is a pretty boring, slow moving, frustrating collection of three hackneyed games that together might make up half of a two quid compendium. Gremlin have got to be kidding.

10/20

Liz

This game seems to lack direction. It would be better if there were missions to perform. Escort a merchant ship from one place to another. Patrol the Straits of Homuz - that kind of thing.

Just sailing about shooting and being shot at gets

tedious, you want to enter a battle. Real commanders spend all their time trying to keep out of trouble. The more I played this the more I lamented what could have been.

11/20

Colin

This has the makings of a very good game, but the compliments stop there, I'm afraid. What *Convoy Raider* needs is a better sense of being involved. The three sub (no pun intended) games are just not exciting enough. Even steering the ship could be more involved, a full-speed ahead lever, proper navigation, tides and currents.

I found it very difficult to work out where the submarine I was supposed to be depth charging was, and the missile launch was both boring and frustrating. The Beachhead shoot-the-planes-out-of-the-sky bit was OK but not worth buying the game for.

12/20

QUARTET

WHEN terrorists overrun and capture a space colony (he read from the back of the jacket), there's only one course of action. Send in the deadliest, most expert team of trained killers available. Send in the Quartet!

The Amadeus Quartet? They wield a fine set of bows, but perhaps chamber music isn't the most advanced weapon for winking out the wicked terrorists. The Monkees might do it. They were a load of winklers.

I jest. The Quartet is Edgar (honest), Lee, Mary and Joe. As befits a finely integrated fighting force, they each have a forte. Edgar, he jumps (and vacuums), Lee totes a meeee-an wide beam gun, Mary is hot-hot-hot on the powerful bazooka, and Joe plays bass. And he runs fast.

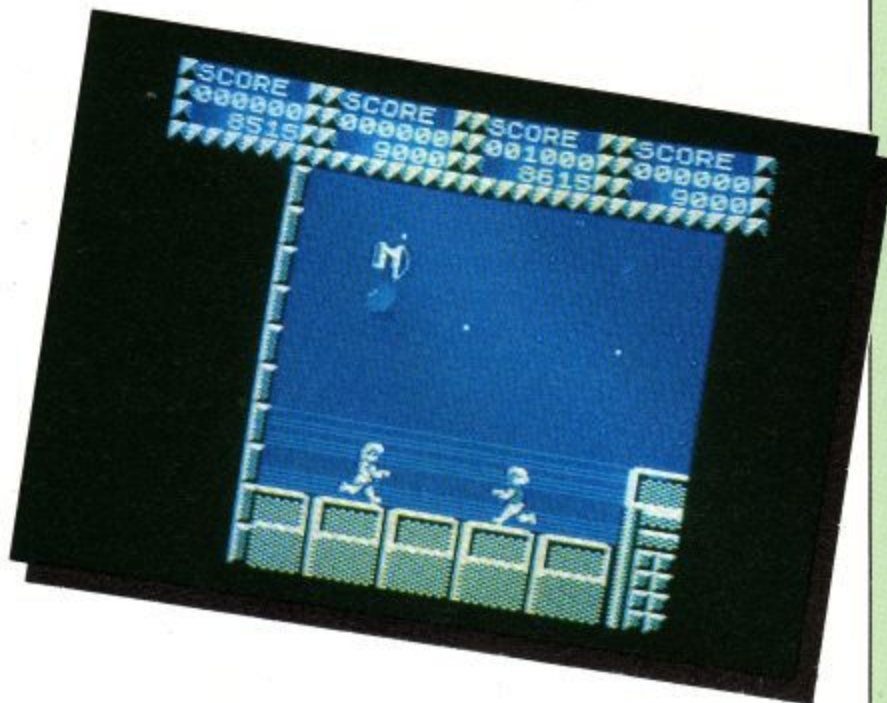
The game starts by letting you pick which one of these proficient pulverisers you wish to be responsible for in the deguerillarisation that is about to happen. Those with a consenting friend can chose the two player game and have twice the fun for the price of one. Grunt.

Once the player is in the arena, it's blast away time. If it moves, shoot it. There's no need to worry about the usual problems of energy, ammo or shields. None of that mamby-pamby faffing around, you shoot, run, then shoot again. Aharrrr.

If you physically tangle with an alien then you die, but if he gets it from your gun/bazooka/thingumywid- get then he dies. Read that sentence through a couple of times and you'll see that it all hangs together. It might not be as profound a logic as that expressed by Russell and Whitehead in their Principia, but for a game such as this, it should do. And did Bertie ever write a video game? Well then.

But don't be fooled into thinking that this game is lacking in the old subtleties. Wonder of wonders, there are Quartet Power-up Goods about. Blunder into a jet-pack, for example, and you can fly. Mirabile dictu. Trot on to a trampoline and you can jump higher, a clock and the aliens stop for a bit, smart bomb potion (thanks to Doc Robert) and they all die at once, and so it goes.

Most of the aliens die with just the one bullet. But on



each screen there is a Large Mechanical Monster. This absorbs a lot of bullets before expiring, but then it releases a key with which you can progress to the next of the 15 levels.

In between screens there is a touching award ceremony where any bonus you might have accrued is pasted on to your score. Touched I was.

Meanwhile, the aliens have turned from terrorists on the outside of the jacket into pirates on the inside. They burst from pimples on the walls of the rooms, and bear down on you. Their disguises (aerosol cans, walking Y fronts et al) don't fool you for a moment.

As you progress up the levels, the graphics change colour and the occasional new sprite pops up. The excitement builds through an almost unbearable crescendo to... well. Something.

Author: Activision

Price: £9.95 (tape), £14.95 (disc)

Nigel

I feel unwell. My fatal mistake was playing this game after Game Over, a bit like a eating a packet of Cheezy Crunchies after a slap-up at the Savoy. This game leaks boredom, tedium and lack of care the way the other oozes consummate skill.

The graphics are terrible, flickery, juddery and

monochromatic. Why use a four colour mode if you only display two colours? Pah. It would be overpriced as a Spectrum cheapie with those graphics. The only fun is trying to guess how to start the game from the front screen without deciphering the instructions.

7/20

Liz

When I played Wonderboy I thought, what crummy sprites, they should've used Mode 1. Then I played this and discovered that they can do just as poor a job in Mode 1 as they did in Mode 0. The game shows all the things not to do with sprites. They are single colour, small and flicker like an

early Charlie Chaplin movie. The arcade game was always in the shadow of Gauntlet but that is no reason for an inferior conversion. The money Activision have spent on advertising this game should've been spent on better programming.

6/20

Colin

Quartet is an odd game, it feels very American, cute characters which include a token female sent around a space complex weapons blazing. If you want to see this kind of thing

done well look at Exolon, there is no reason why Quartet could not have been just as good.

6/20

MASTERCOMPOSER

An exciting new concept in music software!! MASTERCOMPOSER will entertain, astonish, amaze you. Here is a truly stunning application of artificial intelligence in musical composition. MASTERCOMPOSER is simply the most intelligent music program ever written for the Amstrad. Melodies in beautiful three-part harmony are composed – and played simultaneously – by MASTERCOMPOSER itself. Here is true computer-composed music – a new, creative performance of new melodies every day. What MASTERCOMPOSER composes for you will always be unique and unpredictable – yet totally musical.

- MASTERCOMPOSER composes in ten different styles of music – including marches, waltzes, calypso, lively jigs, polkas... selected at the touch of a button. Or... it will give a nonstop performance of its own choice of styles while you listen in amazement.
- Lightning-fast machine-code means the composition is done in real time – as the music plays!! Your Amstrad will be a virtuoso – its three voices will sing as never before, in any key, major and minor.
- User friendly menu control with easy saving and loading of music. Tempo is easily controlled, and remembered by the machine.
- No extra hardware is required – however, your Amstrad has an audio socket at the back and any amplifier will improve the sound.
- MASTERCOMPOSER will produce a simple printout of the melodies, on a musical stave, compatible with nearly all printers.

Don't confuse this with random-beep music!! Highly refined rules of harmony, rhythm, and musical style ensure that the emerging melodies are truly musical – as confirmed by many keen musicians who have listened to it. This highly intelligent software package exists in this advanced form only for the Amstrad CPC range.

- POCKET COMPOSER is a shortened version of MASTERCOMPOSER – with exactly the same level of musical intelligence. It is restricted to common 4/4 time, but that still covers an enormous range of musical styles. If you choose Pocket Composer you will qualify for £12 discount off MASTERCOMPOSER.

MASTERCOMPOSER-Disc only £49.00
POCKET COMPOSER-Disc only £15.00

Normally 48-hour despatch. P&P UK Free (Overseas, please add £2.00)

WESTHILL MUSIC (ACU)

75 BEECH ROAD, WESTHILL, SKENE, ABERDEENSHIRE AB3 6WR



PRE-SCHOOL, PRIMARY, JUNIOR

Education

By a Teacher. Tested by Pupils

Approved by Parents and Schools

For All AMSTRAD Computers. CPC/PCW and PC1512

Cassette £7.50 Disc £11.50

SAE For Lists (Please indicate CPC/PCW or PC1512)

ARC (ACU4) 53 Bentley Street, CLEETHORPES,
South HUMBERSIDE DN35 8DL. (0472) 699632

ASTROLOGY for beginners

Teach yourself astrology using your Amstrad

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

£11.50 cassette £15.50 disc (£13.50 for 1512)
No previous knowledge required

Also many other programs for more experienced astrologers

Please send the Astrology Starter Pack for my Amstrad

464/664/6128/8256/1512. I enclose a cheque/PO, UK, for £11.50/£15.50/£13.50 (Inc p&p). Outside UK add 50p; or, I enclose a large sae for free catalogue.

Name _____

Address _____

ASTROCALC (DeptA) 67 Peascroft Road
Hemel Hemstead, Herts HP3 8ER Tel: 0442 51809

ALADDINK

FABRIC RIBBON CASSETTE RE-INKING

Trial Offer: £1 per ribbon

Post used cassette(s) with payment to:
**ALADDINK (Dept AU), 4 Hurkur Crescent,
Eyemouth, Berwickshire, TD14 5AP**
Tel: (08907) 50965

PC1512 SUMMER PROMOTION
PC1512 DOUBLE DISC DRIVE MONO
WITH DMP3000 PRINTER
SUPERCALC 3 & WORDSTAR 1512
ONLY £705.00 INC. OF VAT
(Please add £18.00 for Data Post Service)

CPC6128 COLOUR Only £355.00
(Price inc. of VAT, Please add £18.00
for Datapost)

Amstrad PC1512 All software in stock.
Please ring for details

PC1512 SDMM	£485.00
PC1512 DDCM	£760.00
PC1512 HD20MM	£963.00
PC1512 HD20CM	£1130.00
PCW8256	£425.00
DMP2000 printer	£149.99
DMP3000 printer	£180.00
FD-1 (disc drive)	£93.00
3" floppy disc (box of 10)	£26.99
JY-2 Joystick	£9.30
Printer Ribbon for DMP2000/3000	£5.50

ALL PRICES INCLUDE VAT & DELIVERY IN UK ONLY
Overseas customers please add 50p for Europe and £2.00
for rest of the world per software. We specialise in AMSTRAD HARDWARE & SOFTWARE. Please ring for details
or send an S.A.E. for our catalogue.



CUSTOMERS PLEASE MAKE CHEQUES PAYABLE TO:

NEWCROWN COMPUTERS LTD

98-100 Hightown Road, Luton, Beds LU2 0DQ (UK) Tel: (0582) 455684

AMSTRAD SOFTWARE

	TAPE	DISC	PCW
MINI OFFICE II (DISC)	11.40	14.99	N/A
PROTEXT	15.00	18.50	54.99
TASWORD-6128	N/A	18.99	N/A
PLANIT	11.40	14.99	19.95
MASTERFILE III	N/A	29.95	N/A
DR DRAW OR DR GRAPH	N/A	33.00	33.00
SUPER CALC 2	N/A	N/A	41.50
TASWORD 8000	N/A	N/A	19.40
MASTERFILE 8000	N/A	N/A	35.00
5000 GRAND PRIX	8.49	12.74	N/A
LEADERBOARD	8.45	12.71	N/A
AIR COMBAT EMULATOR	8.45	12.71	N/A
ANNALS OF ROME	9.50	12.50	19.95
COLOSSUS CHESS 4	8.45	11.85	13.55
DEEP STRIKE	8.45	10.15	N/A
F15 STRIKE EAGLE	8.45	12.71	N/A
PRESIDENT	8.45	N/A	N/A
THEY SOLD A MILLION	7.90	11.90	N/A
TRIVIAL PURSUITS	11.50	15.50	15.90
ADVANCE MUSIC SYSTEM	N/A	23.50	N/A
EMU	12.71	16.96	N/A
TOMAHAWK	7.20	11.70	15.90
GAUNTLET	8.45	12.71	N/A
MASTERCALC 128	N/A	28.50	N/A

VISA

FIXED PRICE COMPUTER REPAIRS

All types of home computers:
Amstrad, Sinclair, Commodore, BBC etc
Prices from £7.00

(for minor faults eg. Keyboard type fault)
Inclusive VAT & P+P. 3 months guarantee

Also we buy, sell, rent new or used Home/Microcomputers

Also available: Spares, software, cables, peripherals and
maintenance contracts etc.

Telephone: (0702) 618455/527864/613741
for immediate prices
Packaging materials supplied

SPECIAL OFFER

Spectrum+ Upgrade £31.00 inclusive VAT & P+P

ANALYTIC ENGINEERING LTD,

Analytic House, Unit 18A Grainger Road
Industrial Estate, Southend-on-Sea, Essex

How To Save Money

Don't spend it. But – you've got to live. So you've got to spend
money on food, clothes, fuel and so on.

So how do you save? You use the tools at your disposal:
your computer, your intelligence, your skill.

You use the Home Finance Program – designed to help you save money.

The **HFP**. It runs on Amstrad PCWs and the CPC6128.

It gives you an instant picture of your finance and caters for
up to 15 accounts. The **HFP** is fast, easy-to-use, and comes with
a comprehensive manual. Send cheque/PO for £24.95 and your
personalisation message to:

Datavise (ACU)

20 Drumnaquoile Road, Castlewellan, Co Down BT31 9NT

or sae for further details

G-TEN LIMITED

THE MAIL ORDER SOFTWARE HOUSE

Amstrad Range	Tape	Disc	Human Torch	\$3.25	n.a.	Six Pak (Hits Pak)	\$7.25	\$11.25
Express Raider	\$7.25	\$11.25	Obsidian	\$4.25	n.a.	Five Star Games 2	\$7.25	\$11.25
Enduro Racer	\$7.25	\$11.25	Beachhead	\$4.25	n.a.	Saracen	\$6.50	\$10.25
Pulsator	\$6.50	\$11.25	Alien Highway	\$4.25	n.a.	Army Moves	\$6.50	\$11.25
Leviathan	\$6.50	\$11.25	Bomb Jack 2	\$7.25	\$11.25	Konami Coin-Op	\$7.25	\$11.25
World Games	\$7.25	\$12.25	Nemesis	\$7.25	\$11.25	Tomahawk	\$7.50	n.a.
Barbarian	\$7.25	\$12.25	They Stole Million	\$7.25	n.a.	Star Raiders II	\$8.25	\$12.25
Desert Fox	\$4.25	n.a.	Explorer	n.a.	\$11.25	Tension	\$8.25	\$12.25
Green Beret	\$6.50	\$11.25	Sailing	\$7.25	\$11.25	Samurai Trilogy	\$8.25	\$12.25
Top Gun	\$6.50	n.a.	Super Cycle	\$7.25	\$11.25	Living Daylights	\$8.25	n.a.
Stallone Cobra	\$6.50	n.a.	MGT	\$7.25	n.a.	Fifth Quadrant	\$6.75	\$10.50
Ghost 'n' Goblins	\$6.50	\$11.25	Strike Force Cobra	\$7.25	n.a.	Snaplight	\$6.75	\$12.25
Miami Vice	\$6.50	n.a.	Sentinel	\$7.25	\$11.25	PERIPHERALS		
Highlander	\$6.50	n.a.	Head Over Heels	\$6.50	\$11.25	(p&p \$1.50 per item)		
Now Games 3	\$7.25	n.a.	Shoals Road	\$6.50	\$11.25	JV2 Joystick	\$11.50	
Revolution	\$4.25	n.a.	Paperboy	\$6.50	\$11.25	Cheetah 125 Joystick	\$7.50	
Infiltrator	\$7.25	\$11.25	Shockway Rider	\$6.50	\$12.00	Cheetah Mach One Joystick	\$12.50	
Marble Madness	\$7.25	\$11.25	Silent Service	\$7.25	\$11.25	Joyce Stick (Cascade)		
Gauntlet	\$7.25	\$11.25	Arkanoïd	\$6.50	\$11.25	(8256/8512)	\$25.50	
Strike Force Harrier	\$7.25	n.a.	Leaderboard	\$7.25	\$11.25	AMX Mouse	\$67.50	
They Sold Million 3	\$7.25	\$11.25	Crystal Castles	\$7.25	\$11.25	V21/23 Modem	\$94.50	

Please specify machine. Please allow 14-28 days delivery.
Please add 75p P&P per item (inland/BFPO orders). European orders add \$1.50 P&P per item.
Elsewhere add \$2.00 P&P per item.

Please make cheques or postal orders (sterling only) made payable to G-Ten Limited
Inland or BFPO orders send to:

G-Ten Limited, Dept AMU10, FREEPOST, 146/150 Commercial St., London E1 6BR
(no stamp needed in the UK and BFPO only)

Telephone Enquiries Welcome Tel: 01-377 2630 (24hr Ansaphone)

JACKSON COMPUTERS LIMITED JOIN OUR DISCOUNT CLUB!

Life membership for £8.50

Software/Hardware Discounts of 5-20% off RRP

All AMSTRAD and other leading makes of software available

Complete computer system, Printers, modems, cables

AMSTRAD CPC464 with colour monitor

£279.90

AMSTRAD CPC6128 with colour monitor

£379.90

PCW8256/512

£419.95/£545.00

PC1512 HD 20MB Hard disk & colour screen or mono

New Amstrad PC 1640 ECD Now available

Ring for details

Tandon 20 Meg add-on Disk Drive for PC 1512

Special Offer £399.00

All prices include VAT, Postage + Packing

Also free Life Membership when you purchase any AMSTRAD computer

Visitors by arrangement only

TEL: 01-651 6244. Between 9am-5pm 01-655 1610

Send for full Price List & membership form to:

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

3" HITACHI DISK DRIVES

Suitable for use on the Amstrad 6128, 664, Tatung Einstein, BBC with DFS. 40 track, double density, 3 ms track access time. Unformatted capacity — single sided 250k. Shugart interface. Plug compatible with 5 1/4 inch drives.

Cables available for connection to:
Amstrad — £7.50 plus VAT.
BBC — £7.50 plus VAT.
Tatung installation pack — £12.00 plus VAT.



CARRIAGE £3 + VAT.

PRICE:
£24.95
+ VAT

FOR FURTHER DETAILS SEND S.A.E. TO:

MATMOS Ltd., Unit 11, Lindfield Enterprise Park,
Lewes Road, LINDFIELD, West Sussex, RH16 2LX.
Tel. 0444-73830/0444-414484/0444-454377

Or Computer Appreciation, 111
Northgate, CANTERBURY, Kent
CT1 1BH. Tel. 0227-470512

ARE YOU IN A RUT??

Then climb out by learning to use your AMSTRAD for pleasure, personal or business use with our unique range of. . .

OPEN LEARNING COURSES

Phone (0206) 560783 24 hours

or send for FREE details to:

MICROWISE UK, FREEPOST, Colchester CO3 4BR

NameMicro

Address

RAMASOFT Budget Utility Software

For the AMSTRAD CPC range of home computers

FONT MASTER

FONT MASTER is a font designer utility that enables you to create new character sets to include in your Basic and machine code programs. Features included:
Design up to four characters at once * Test characters in all three text modes * Save character sets as binary files or SYMBOLS for easy inclusion in Basic programs * Character scroll, rotate, etc. * Sample character sets included * Etc.

FONT MASTER is \$8.50 on cassette \$11.50 on disc (*special introductory offer*). Please state your machine type.

JUNIOR-WORDPRO

JUNIOR-WORDPRO is a word processor for children. Some of the features boasted by JUNIOR-WORDPRO:

Full cursor movement * Character and line insert * Text overwrite mode * Fully automatic printout * Word wrap * Mode 1 text and double line spacing for clarity.

JUNIOR-WORDPRO is \$9.95 on cassette and \$12.95 on disc.

RAMASOFT

6 Stile Plantation, ROYSTON, Herts SG8 9HP

Tel: (0763) 43715

TELETEXT

A world of information
at your fingertips

The 'Microtext Adaptor' converts your cpc into a sophisticated Teletext receiver. You can save teletext pages, print them out and even access the data from your own programmes. It plugs into the expansion port and connects to the 'Video Out' socket on your video recorder. The package comes complete with manual, lead and software for just £74.95 inc p+p & VAT

Our own tuner is now available to eliminate the need for a video recorder. It tunes itself in! and enables channel selection from the keyboard. The complete system with Microtext Adaptor and Tuner (just plug in an aerial) is only £114.80 inc p+p & VAT

MICROTEXT

7 Birdlip Close, Horndean, Hants PO8 9PW

Telephone: (0705) 595694

000 Triple Zero Services

INVESTORS! CHARTISTS!
Come out from under that pile of paperwork!

Another scoop brought to you by Triple Zero Services!

SHAREPOINT is a user-friendly program designed to chart, update, and display graphically, share price movements on your Amstrad CPC6128 micro with colour or monochrome monitor, including output to disc or printer!

SHAREPOINT Facilities include rapid update, re-scaling, delete or add records, thumb through charts, compare charts on Logarithmic scale, dump display to Epson-compatible printer, store and access up to 100 companies per file.

SHAREPOINT includes full and easy to use documentation, and is available from Triple Zero Services for £28.50 inclusive of postage, packing and VAT

Got the point? Get SHAREPOINT!

Don't forget Triple Zero Services also supply a wide range of Public Domain Software and Shareware for Amstrad CP/M, IBM PC and Clones (tested on Amstrad PC1512) and Atari ST! S.A.E. for list!

Send your Cheque, Postal Order or International Money Order to:

Triple Zero Services, 23 Broad Lane, Essington, Nr. Wolverhampton, Staffordshire, WV11 2RG, UK.
Please allow 14 days. All prices include discs and P&P, add £1 extra for overseas orders.

NEED HELP? . . . Well, read on

If you are an owner of the Amstrad CPC and don't ever get a chance to help other users, write reviews or air your opinions — NOW YOU CAN.

Amstrad CPC Newsletters provide these opportunities and include Programming series, hints and tips to keep you going!

But the best part is, its NON PROFIT MAKING and costs just £5 for 6 FANTASTIC issues. And of course, you get access to the Public Domain Library ABSOLUTELY FREE!!

What more could you ask for? Give it a go and you'll be back for more and more.

Sample issue 60p or send a SAE for information sheet.

CHRIS BRYANT, 11 HAVENVIEW ROAD, SEATON, DEVON EX12 2PF.

*Gimme a call on 0297-20456 after 7 (Mon-Sat) and anytime Sundays!

LIVING ABROAD . . . WHY NOT JOIN FOR ONLY £11 FOR SIX ISSUES.

WONDERBOY

WONDERBOY is Sega's answer to Jack the Nipper. A wee toddler, so cute he should be on *That's Life*, dashes through the jungle to rescue his girlfriend Tina from the evil King.

This King fellow lives across seven territories, bizarre and treacherous. These seven are further subdivided into four lands, each consisting of four areas. That's, er, um, 112 areas. At the end of each territory waits an Ogre. They all have to be vanquished in a suitably heroic way. Doesn't ogle well, does it?

As progress is made left to right, the wunderkid has to pick up fruit and burgers growing from the trees, and break open magic eggs containing skateboards, axes and fairies. It's funny, but now I come to explain this to somebody else, it does seem a bit odd. In the game it all makes sense. Ah well.

Apart from the ogres, there are snakes, toads (toads, like frogs, are amphibians. Some editors think they're reptiles. What toads think of editors has never been accurately explored...), fireballs, rolling stones and poisonous snails. And wasps. This collection of jungle denizens are out to get the lad. They would be.

Not only does the enfant terrible have to leap, stab or skateboard over all these challenges, but he also leaps athletically across yawning chasms, dozing detritus and sneezing valleys. There's also the old vitality meter (who's been at their thesaurus then?) along the top of the screen which runs out as he runs along.

These few simple bits of video gamery are put together with a hidden cunning which only becomes apparent after a few minutes. The stealth and intelligent malevolence behind some of the pitfalls is quite at odds with the cuteness of the graphics. For example, a toad (classification amphibian, as previously noted) is placed at a jump point. It can be got rid of with a few suitably aimed stone hatchets, but all weapons get lost if you lose a life, so a previously trivial problem can become difficult in a major way if you don't get it right first time.

Likewise, there are the traditional rising lifts to help



the young 'un cross a particularly nasty bit of gappery. There are also some bonus fruit hanging hummingbird-like over the hole. If one waits for the lift the bonus groceries vanish, but if one makes the leap there's a good chance that those bananas will be one's last repast.

And as the vitality meter trickles out, it's important to grab every hunk of edible substance that's there.

There are some hilarious touches; the way the kid goes up in flames when he touches a bonfire is as funny as it's possible to be. Child immolation? No worse than zap-the-green-fiend, 'spose. Likewise the frying of monsters, and the guardian angel hovering above, are highly chuckle causative.

So in some ways it's a standard jog along and save the girl game, and in others it makes good use of the plethora of standard gadgets that make up such software. Unexpected.

Author: Activision

Price: £9.99

Nigel

Suppress the rising gorge, oh ye of sensitive nature. This is a game that's easy to get into, well designed and implemented, and impossible to stop playing. It would have been very easy to produce a game using exactly the same storyboard, graphics and action that would have been boring as

spreadsheets. Instead, my faith in the arcane nature of arcade game design is restored.

Ignore the music; that's worse than a grade 1 piano exercise. Ignore the wonderfully awful loading screen. This is a goodie.

18/20

Liz

This is not an arcade conversion, it's a conversion from the Commodore 64 version. That was an arcade conversion. It loses in the translation. The same naff colours as the '64, the same

garish sprites. Converting a game is not a task to be sneezed at, but it could have been done so much better.

6/20

Colin

This Tarzan trapise features some ambitious attempts at advanced programming. Hardware scrolling a large area and software scrolling the score to keep it in place, large sprites and plenty of animation. Only the animation works. The scroll shudders and the sprites are erratic. The sprites are poorly defined.

The arcade game benefited from its cuteness. Computer games are not just a tangible collection of bytes, they need to collect the atmosphere of the scenario, in this case a jungle, and dispense it through the micro. Wonderboy has none of the magic of the arcade. It is a dull game programmed adequately.

8/20

AMSTRAD
COMPUTER USER

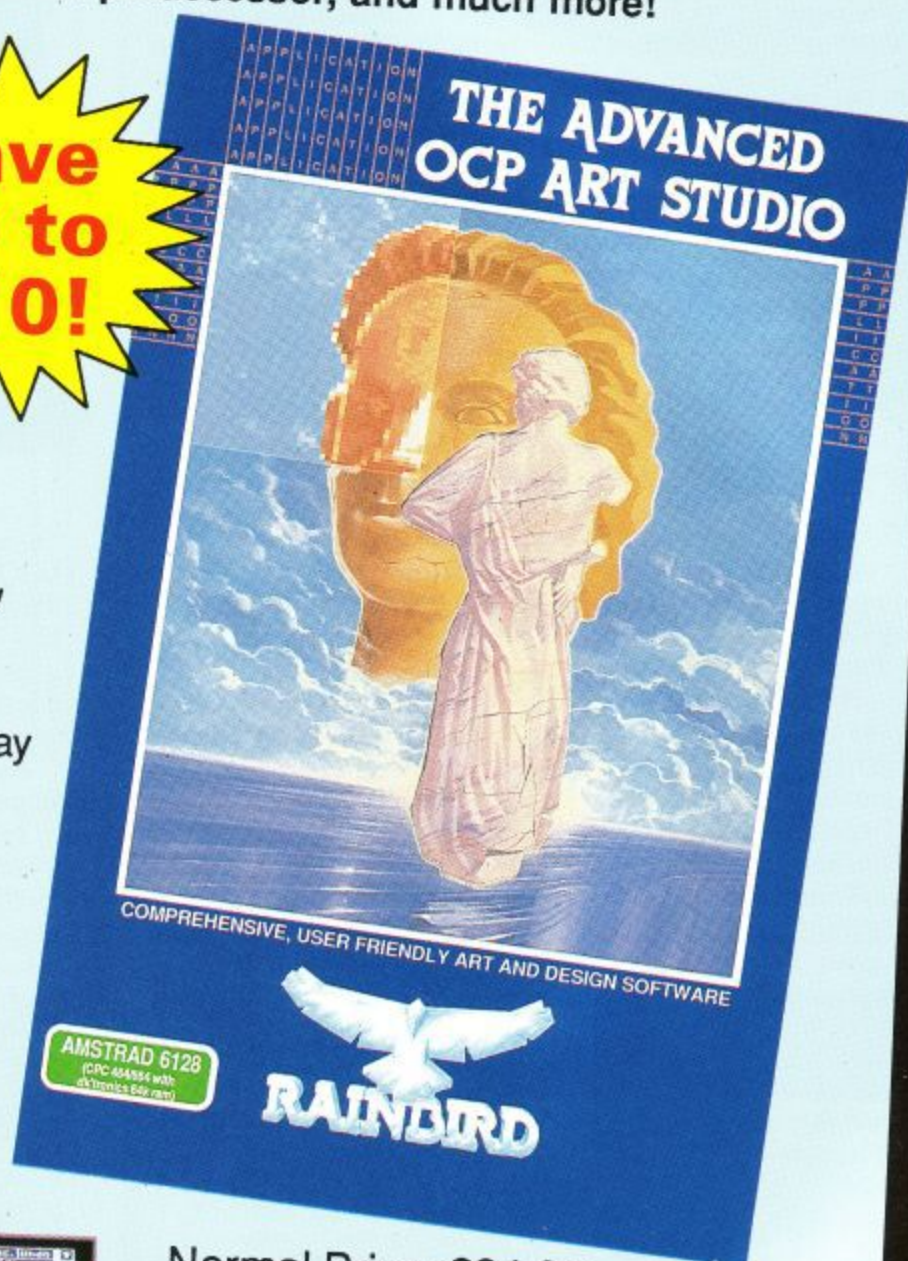
Exclusive READER OFFERS

The OCP Art Studio was voted Best Utility of the Year. Now comes the Advanced OCP Art Studio with all the power and flexibility of its predecessor, and much more!

**Save
up to
£10!**

Its innovative features include:

- A colour priority facility so you can draw behind or mask particular areas of the screen.
- Eight random spray cans with three spray speeds for that professional finish.
- Three levels of magnification with sophisticated editing facilities.
- Cycle colours to produce simple animation effects.



Normal Price: £24.95
Offer Price: £18.95

You can also:

Design in Mode 0 (as well as Modes 1 and 2), paint with multicoloured patterns, display cursor x-y coordinates at all times, save windows to disc (or squash, stretch, flip, or rotate them), use keyboard, joystick, or mouse, and produce triangles, rays, rectangles, circles, filled circles, ellipses, and filled ellipses with ease. You can also add text in any of nine point sizes, in two directions, in normal, bold or italic, and with variable spacing.

If you own a CPC664 or a CPC464 with disc drive, don't lose heart. You too can use this superb package if you purchase the DK'Tronics 64k ram cartridge which simply plugs into the back of your micro – and that's on special offer too!

Suitable for	Product	Format	RRP	Special reader offer	YOU SAVE	Offer including subscription	YOU SAVE
CPC Range*	Advanced Art Studio	Disc	£24.95	£18.95	£6	£28.95	£8
CPC 464, 664	DK'Tronics 64k Ram	—	£39.95	£31.95	£8	£41.95	£10
CPC 464, 664	Both the above	—	£64.90	£50.90	£14	£58.90	£18

*CPC 464 and 664 requires DK'Tronics 64k ram

To order please use the form on Page 71

AMSTRAD
COMPUTER USER

Exclusive READER OFFERS

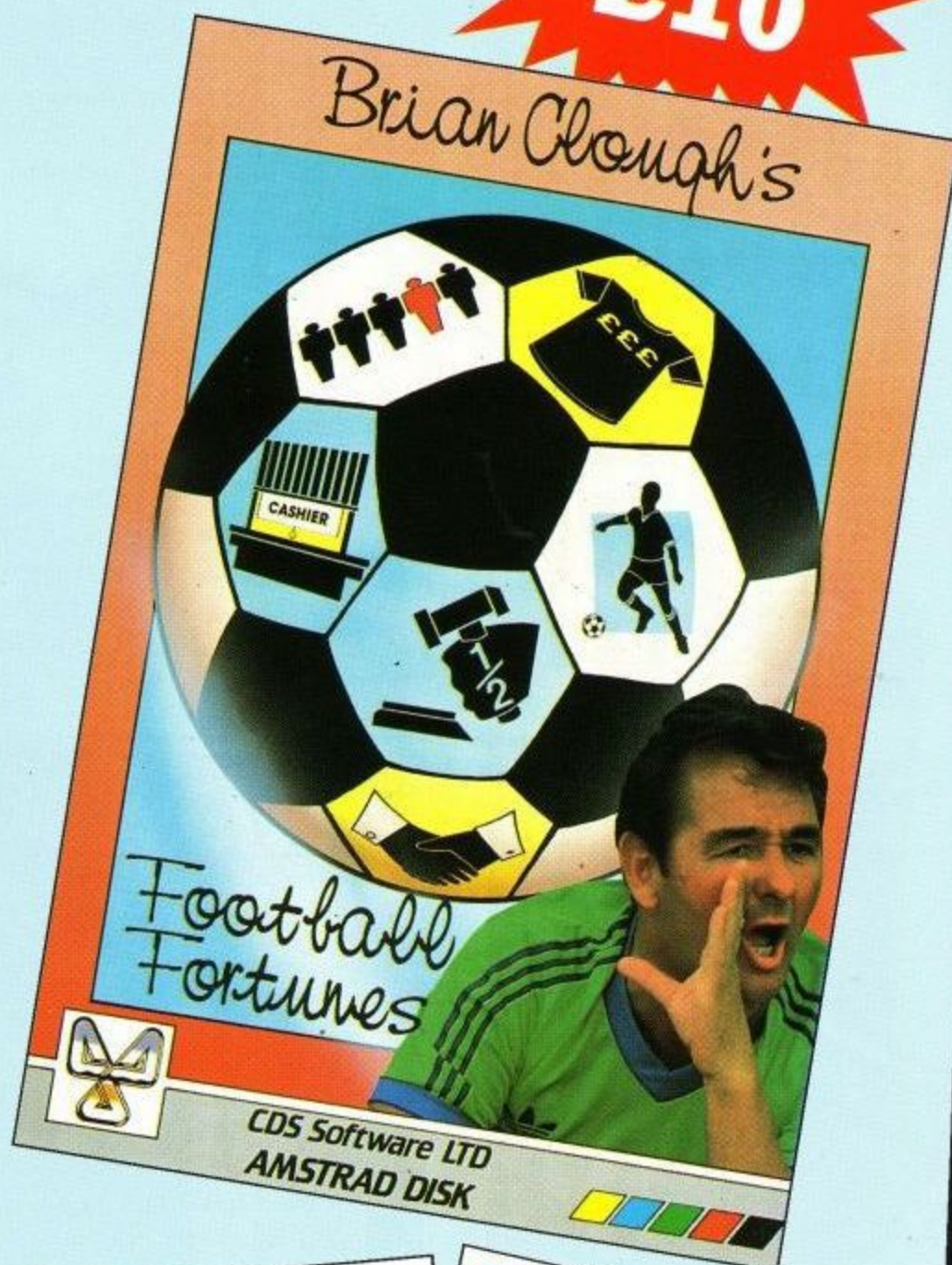
Up for the Cup!

Here's your chance to play football's first interactive computer and board game.

Brian Clough's Football Fortunes is an exciting football management game with a difference – it combines an excellent range of computer-based features with a fascinating board game.

The result for the players is a package which is as much fun and as skillful to play as other best-selling board games, combined with the flexibility and speed of play which only a computer can supply.

SAVE
UP TO
£10



CONTENTS INCLUDE

- CPC software
- Playing board
- Five coloured counters
- 112 Player cards
- 10 spare Player cards
- Six immunity cards
- Pack of money

FEATURES

- Two to five players
- Four skill levels
- Variable game length
- Computer die
- Teleprinter
- Constantly updated league tables
- Assessments of each manager's performance

Suitable for	Product	Format	RRP	Special reader offer	YOU SAVE	Offer including subscription	YOU SAVE
CPC Range	Brian Clough's Football Fortunes	Tape	£14.95	£11.95	£3	£19.95	£7
		Disc	£17.95	£14.95	£3	£22.95	£7

TO ORDER PLEASE USE THE FORM ON PAGE 71

AMSTRAD COMPUTER USER

Exclusive READER OFFERS



£4.95

Binders

Your *Amstrad Computer User* is the ideal source of reference for every user of Amstrad computers. Keep your magazines tidy and in tip-top condition by using our top quality binder.

The *Amstrad Computer User* binder holds 12 issues. Each binder is black with the logo embossed in silver.

Only £4.95.

Bundle 1: January 1986 to June 1986.

This contains a map of The Devil's Crown, pokes for Sorcery Plus, how to use the CPC's fourth mode and a shaded dump for DMP 2000 printers. Software reviews include: Brainstorm, the ideas processor; GAC, the adventure system; Laser Basic, the games writing aid and Rainbird's Music System. Among the hardware reviewed in this bundle is dk'Tronic's ram add-on, various serial interfaces, joysticks and a Teletext adapter. Gamesters will value the maps of Herbert's Dummy Run, Batman and Get Dexter. Programmers will learn from a collection of articles, including advice on music and the 6845 VDP.

Bundle 2: June 1986 to December 1986.

Articles include an exhaustive review of assemblers and art packages, the first full review of the PC1512, plus reviews of joysticks, printers and the Electro-Music Research Midi interface. Those readers who often find themselves clutching a sweaty joystick will appreciate the articles on flight and fight games, the Equinox map and the hints on Spindizzy. Programmers can type in programs like ZX Loader, Battle of the Cars, Interceptor and Double Trouble. And if you want to know who does what then there are interviews with Palace, Activision, Mastertronic and the sadly demised Mikro Gen. A bundle of fun.

Dustcovers

Keep your equipment free from dust and grime with an *Amstrad Professional Computing* dustcover, made from clear pliable vinyl and bound by strong red cotton and sporting the logo.

**DMP2000/3000
Printer £3.95**

**CPC range
Keyboard £3.95
Monitor £5.95**

DMP 2000/3000 Printer Cover	£3.95
CPC 464/664 keyboard cover	£3.95
CPC 6128 keyboard cover	£3.95
Green screen monitor cover	£5.95
Colour screen monitor cover	£5.95
PC 1512 keyboard and monitor set	£9.90
PCW 8256 keyboard, monitor and printer set	£11.95

Back issues

1987 - January: Jailbreak, Starglider, Model Universe reviewed, PC games, Arnor interview, Frost Byte mapped, Crawler listing, Multi coloured CPC.

February: PC Programming, PCW Protext, CPC Listings. Top Gun and Gauntlet reviewed. The Secret of the Red Boxes plus all the regulars.

March: Nemesis preview, Music Machine - the ultimate Sound peripheral. Making the most of Protext, Machine Code manipulation, Elite Disc hack, background print spooler and US Gold interview.

April: Computer Journey - what makes your Arnold tick, the Men from Microprose, Amstrad RS232 reviewed, Sentinel from Firebird, back-up reminder program.

May: Ambug - Build it yourself robot, Empire review, Art Studio from

Rainbird. Plumberdroid Lizting, Plan It, the house finance organiser.

June: Ranarama from Hewson, smooth screen scrolling, Head over heels mega map, Maxam II, Motor racing games, Citizen MSP printer, Machine code triangles.

July: Mission Genocide - exclusive preview. Computer Journey II, what makes your discs drive. Amstrad Vs Star wide printers. DK'Tronics battery backed up clock. Hewson interview. Parrot art package.

August: Starfox preview, CPC through the crystal ball, how to program, Ultramon and Devpac machine code reviews, machine code breakout and Cheetah midi keyboard.

September: Living Daylights (the game of the film), a look at Amster's Cage, the HFP home finance for CP/M+. Looking at roms, how to de-bug programs, plus a look at CPC areas on bulletin boards.

Bargain bundles

£4.95

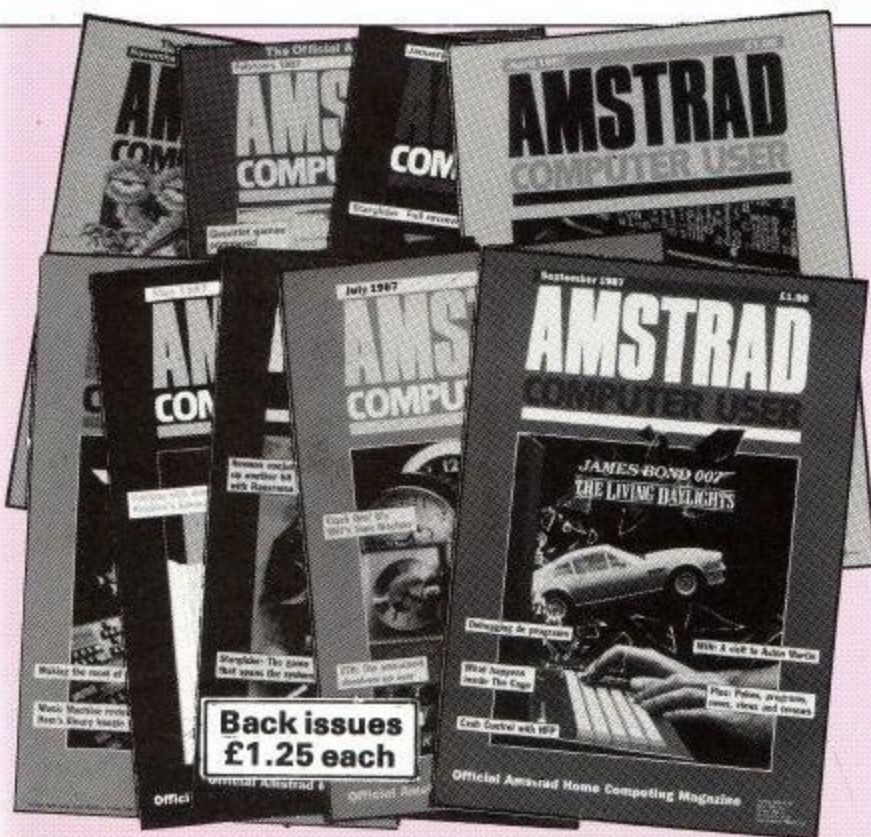
Special Offer

Each bundle costs £4.95 each, a substantial saving over the usual price of back numbers.

The complete works of 1986 for only £8.35!

£4.95

**PCW8256/8512
Keyboard, monitor
and printer set
only £11.95 set**



**Back issues
£1.25 each**

**AMSTRAD
COMPUTER USER**

ORDER FORM

Offers subject to availability
All prices include postage, packing & VAT.

All Overseas items despatched by air mail

Valid to 31.10.87

Subscriptions

£12 UK 8000
£25 Europe incl Eire 8001
£40 Overseas 8002
Commence with _____ issue

Renewals

£12 UK 8811
£25 Europe incl Eire 8812
£40 Overseas 8813

Subscription offer †

Amstrad Anthology Vol. 1 8156/7
Vol.2 8158/9
Utilities Unlimited! 8159/60

†Only available if accompanied by subscription order or renewal.

ACU Specials

Amstrad Anthology Vol. 1 8161/2
Vol.2 8163/4
Utilities Unlimited! 8165/6

Rainbird Advanced Art Studio

With sub* Without sub
CPC 464, 664/8128 Disc £16.95 £18.95 8140/8141
DK'Tronics 64k Ram £29.95 £31.95 8142/8143
Disc + Ram £46.90 £50.90 8144/8145

*Only available if accompanied by subscription order or renewal
Add £2 for Europe/£4 for Overseas

Brian Clough's Football Fortunes

With sub* Without sub
CPC Disc £10.95 £14.95 8149/8150
CPC Tape £7.95 £11.95 8151/8152

*Only available if accompanied by subscription order or renewal
Add £2 for Europe/£4 for Overseas

Bargain bundles

Bundle 1 - * January 86-June 86 £4.95 8153
Bundle 2 - * July 86-December 86 £4.95 8154
Bundle 3 - ** January 86-December 86 £8.35 8155

* Bundles 1 or 2 UK £4.95, Europe £6.95, Overseas £13.95
** Bundle 3 UK £8.35, Europe £12.35, Overseas £26.35

Back numbers

UK £1.25, £1.75 Europe & Eire, £3.25 Overseas

1987
January 8026 April 8029 August 8033
February 8027 May 8030 September 8034
March 8028 June 8031
July 8032

Dust covers

CPC 464/664 keyboard £3.95 8100
CPC 6128 keyboard £3.95 8101
CPC range green screen £5.95 8102
CPC range colour monitor £5.95 8103
DMP 2000/3000 Printer £3.95 8105
PCW 8256 keyboard, monitor and printer set £11.95 8104
PC 1512 Keyboard + colour monitor set £9.90 8134
PC 1512 Keyboard + mono monitor set £9.90 8135

Binder

£4.95 UK 8106
£7.95 Europe
£11.95 Overseas

Readers in Europe (inc. Eire) & Overseas please add £2 per item unless otherwise indicated

TOTAL

Send to
Amstrad Computer User,
FREEPOST,
36 St Petersburg,
Stockport SK1 1HL

Telephone orders 061-429 7831 24 hours
Enquiries 061-480 0171 9am-5pm

PLEASE PRINT IN BLOCK CAPITAL LETTERS
Please allow up to 28 days for delivery

Please indicate method of payment (✓)

☐ Access/Mastercharge/Eurocard/Barclaycard/Visa

Expiry date

Signature

☐ Cheque made payable to Amstrad Computer User

Name

Address

ACU10

With monitor, data £100 of software yo (Until mummy catc



With the Amstrad 464 home computer the fun starts as soon as you get it home.

Because unlike many other home computers the 464 comes complete with its own green screen or full colour monitor.

It also comes with a convenient built-in datacoder.

And you get £100 worth of software with games like Harrier Attack and Sultan's Maze. Not to mention Oh Mummy.

64K of RAM



means you have plenty of memory to play with. And there are over 200 Amstrad games you can play, many exclusive to Amstrad.

But games are only half the fun on the 464.

The kids can learn spelling and arithmetic with software like Wordhang and Happy Numbers.

Whilst adults will love the way that it helps around the house with budgeting and accounts.



order and
u can't lose.
hes you.)



To help you make the most of your 464, you can join the Amstrad User Club.

And there are lots of books and magazines devoted to it as well.

What's more you can buy joysticks, printers, disc drives, speech synthesisers and light pens to make it even more fun.

But perhaps the most pleasurable thing about the 464 is the price.

The complete home computer costs just £199 with green screen or £299 with colour monitor.

Not much to pay for a chance to get away from mummy.

Please send me more information.

Name _____

Address _____

ACU10/87

The Amstrad 464.
The complete home computer.

Amstrad plc., P.O. Box 462, Brentwood, Essex CM14 4EF. >

The Least Significant Bit

THE legal process is supposed to be slow. Well Amstrad has got the fastest legal advice about. Company lawyer David Hyams has bought a motorbike, and it's no 125cc learner special, it's a sleek BMW which will outpace his bosses' BMW 7 series. They are being replaced by E reg Jags.

Food for thought

What do you say when you stub your toe? I say "sugar", at least I do in mixed company. But if your name was Sugar what would you say? I mean you wouldn't get Sir Clive saying "Oh Sinclair". Well the great man's retort to burning the toast, or formatting the wrong disc is equally edible: "Oh sausages".

Hidden code

This is an Amstrad magazine, and should be an Amiga-free zone, but I couldn't resist telling you

about a special function of the Amiga rom. If you hold down both alt keys, both shift keys and press a function key the workbench page displays a list of the programmers' and engineers' names. If you try to pop the disc out you will have run out of hands, so get a friend to do it. You will find out what the designers think of Commodore.

The Z88

In the days when everyone knew who Sir Clive was, Spitting Images produced a book with a fake advertisement for the Sinclair, "We haven't thought of it yet". It is interesting to compare the specification in the lampoon with that of the real thing. Spitting Images did not say that ram and rom were mutually exclusive, 4 meg total, so neither have I.

Spitting Image

4 million k rom
4 million k ram
5 million k rim
Colour: Black
Tangled leads: 12ish
Squelchy rubber keyboard

Cambridge Computers

Up to 4 million bytes ram
Up to 4 million bytes rom
What's rim?
Colour: Black
Tangled leads: none ish
Spot on!

ADVERTISERS' INDEX

Aladdink.....	65	Database Software.....	48,49	Newcrown Computers.....	65
Amsoft.....	75	Datavise.....	65	Ocean Software.....	2
Amstrad.....	72,73	Electronic Yellow Pages	8,9	O.J.Software.....	52
Amstrad Computing		Garwood Software.....	22	Ramasoft.....	66
Newsletters.....	66	G-Ten.....	66	Romantic Robot.....	27
Amstrad Distribution.....	30	Incentive Software.....	62	R.S.D. Connections.....	21
Amstrad Computer Show..	4	Jackson Computers.....	66	S&M Software.....	62
Analytic Engineering.....	65	LCL Educational		SBS Computer Supplies..	14
Arc Education.....	65	Software.....	46	School Software.....	62
Astrocalc.....	65	Matmos.....	66	Screens Microcomputers.	30
BBD Dust Covers.....	61	Meridian Software.....	46	Selec Software.....	62
Brunning Software.....	34	MicroLink.....	7	Siren Software.....	43
Cheetah Marketing.....	52	Micronet.....	17	Star Micronics.....	27
Compumart.....	35	Microsnips.....	55	Tasman Software.....	50,51
Computer Trading		Microtext.....	66	Treasure Island	
Company.....	76	Microwise.....	66	Software.....	61
Connect Systems.....	46	M.J.C.Supplies.....	52	Triple Zero Services.....	66
Cyca.....	61	Nemesis.....	61	Westhill Music.....	65

USERS CLUB

Amsoft

- Runs on the sensational new Amstrad 1512 PC and IBM PC compatibles.
- Over 1000 sites have proved this software over the last 4 years.

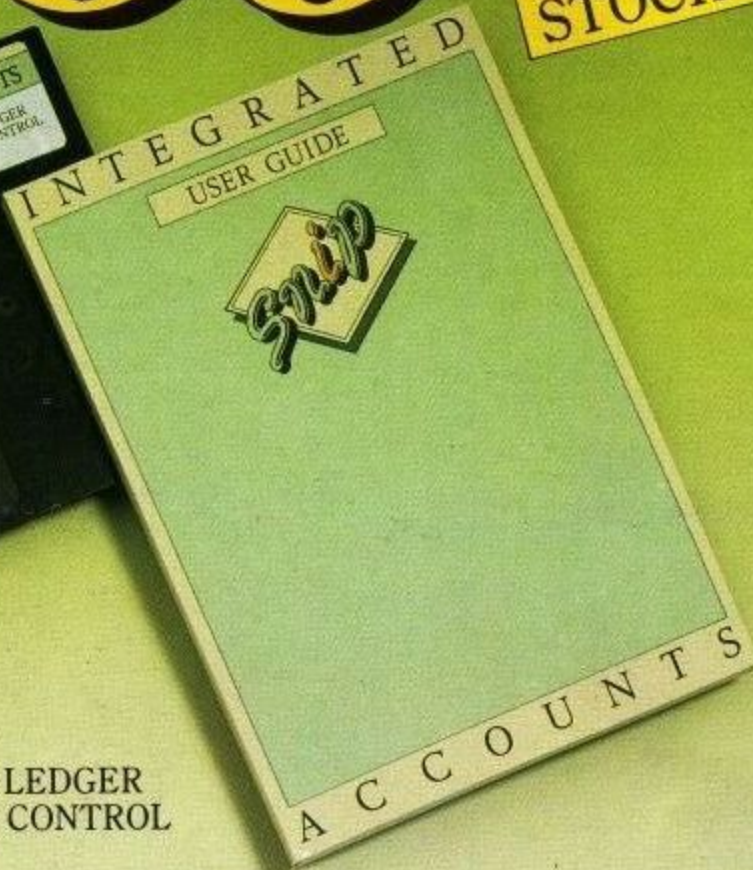


THE FULLY
INTEGRATED

£99

ACCOUNTING
SUITE.

INCLUDING
STOCK CONTROL



NOMINAL LEDGER · SALES LEDGER
PURCHASE LEDGER · STOCK CONTROL
INVOICING

Additional Features available on request:

- **Multi Company** £99.00
- **Payroll** £99.00
- **Multi-User** £500.00

BUY IT AND TRY IT

The following Centres can supply systems and provide professional training and support:

Anglia C.B.C.C. (0493) 751284 **Bucks J.W. Associates** (02404) 3898 **Coventry Area** Exact Computers Ltd. (0203) 363709 **Croydon Area** Arrowflight Ltd. 01-660 6442 **Derby/Notts/Leics** Eston Ltd. (0332) 290458 **E. Hants & W. Surrey** Abacus Management (04203) 89466 **Gloucestershire** Fullon Computers Ltd. (0454) 260833 **Central London** PCS Ltd. 01-222 5981 **London City & E.** Frank Hirth & Co. 01-404 4255 **N. London, Home Counties** Softa (0727) 68081 **S.E. London** P.V. Davis & Co. 01-703 9548 **S.W. London** Wandsworth Computers 01-871 0823 **N. Kent** Haysden Business Services (0732) 366012 **North West England** Computers For Management Ltd. 051-647 3871 **Oxon** Computer Assistance (0993) 842235 **Peterborough** I.F.S. Computer Services (0733) 314451 **The Potteries** Accountancy & Business Services (0782) 614485 **Sussex** Brel Data Systems Ltd. (08926) 65333 **Worcestershire** ISIS Associates (0527) 25624.

SNIP is a well balanced, thoroughly researched and carefully manufactured software package, suitable for a wide range of companies.

With the cost of computer hardware coming down dramatically, the fully integrated SNIP Accounting Suite is being offered at a price which paves the way for more and more businesses to reap the benefits at last of cost-effective computerised accounting.

Please complete this coupon and return it to: Computer Trading Co. Ltd., 26a High Street, Andover, Hampshire SP10 1NN.

Order details

Please send me: Tick box(es)
☐ Snip Accounting Suite £99.00 + VAT
 Additional features
☐ Multi Department £99.00 + VAT
☐ Multi company £99.00 + VAT
☐ Payroll £99.00 + VAT
☐ Multi-user £500.00 + VAT
 Please add £2.50 for P & P.
☐ Amstrad 1512 20mb £899.00 + VAT
TOTAL AMOUNT £

£

I enclose cheque for £

Please charge my Access Account

Card No:

Expiry Date

Signature

Dealer Enquiry

☐ I would like to be considered for a SNIP Training Centre. Please send me details.

Name Company

Position Address

Tel No.

TELEPHONE **(0264) 52096** ANDOVER OFFICE **(0963) 24551** SHEPTON MALLET OFFICE