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Features Editor: Ian Hoggan, Production Editor: Peter Stevens, Design
Features Editor: Robin Nixon, Associate Editor: Richard Whittaker,
Permissions Editor: Sarah-Jane Peppas, Reviews Coordinator:
Paul Turnbull, News Editor: Mike Cowley, Advertising Manager:
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Gallup Software Chart



THIS MONTH	LAST MONTH	TITLE (Software House)	COMMENTS	PRICE
1	2	STEVE DAVIS SNOOKER <i>Blue Ribbon</i>	Re-released at the time of the snooker championships, it is still as popular second time around.	1.99
2	19	SUPER STUNTIMAN <i>Code Masters</i>	Code Masters does it again, and with a non-simulator title as well. Not everyone's cup of tea.	1.99
3	1	GHOSTBUSTERS <i>Mastertronic</i>	Though an old game it is still as popular as ever. Not up to the standard of the film though.	1.99
4	18	FRUIT MACHINE SIMULATOR <i>Code Masters</i>	For the gamblers among you, this is your chance to play without losing any money.	1.99
5	4	TRAP DOOR <i>Alternative</i>	Available on a compilation as well as on its own, this is an above average spin off from an excellent TV programme.	1.99
6	*	DAN DARE <i>Mastertronic</i>	The only new entry this month, showing that people are still keen on this one although the sequel is now available.	1.99
7	3	WAY OF THE EXPLODING FIST <i>Mastertronic</i>	Martial arts games never die, as this one on the Research label shows. You give your money and take your share.	1.99
8	100	POPEYE <i>Alternative</i>	Alternative go for another conversion from TV cartoons. Strange to think Popeye is leading for his genre.	1.99
9	*	NINJA SCOOTER SIMULATOR <i>Firebird</i>	Strange title from the budget British Telecom label - watch out for their new one, Page Sixx Olympia.	1.99
10	6	BMX SIMULATOR <i>Code Masters</i>	This one keeps hovering and never seems to die. One of the best simulators on the market.	1.99
11	*	WE ARE THE CHAMPIONS <i>Ocean</i>	This new one is a compilation of some great games - Panzora, W+, Rampage, Barbarian and Super Signs.	9.99
12	7	3D STARRIGHTER <i>Code Masters</i>	Going down the charts now, but Code Masters tried to alter its image with this shoot-'em-up.	1.99
13	8	PRO SKI SIMULATOR <i>Code Masters</i>	Not destined to be as popular as the other simulators from Code Masters. Nice idea but not much to look at.	1.99
14	*	SHANGHAI KARATE <i>Players</i>	Smacks of being a budget title, but still worth looking at. Not outstanding, but a nice game.	1.99
15	15	GRAND PRIX SIMULATOR <i>Code Masters</i>	Though falling in the charts this one has been around for a long time. Well worth it.	1.99
16	9	OUT RUN <i>US Gold</i>	Long-awaited but a disappointment in nearly all aspects now that it's actually arrived.	9.99
17	13	SKATE ROCK <i>Mastertronic</i>	Mastertronic must like it, but not a very exciting game. Good price though.	1.99
18	*	10 GREAT GAMES 2 <i>Orion</i>	The second compilation this month, and excellent value. Read the review in this issue.	9.99
19	11	LA SWAT <i>Mastertronic</i>	This is another one which refuses to go away. If you fancy the uniform and the city, at the price it's unbeatable.	2.99
20	20	GHOST HUNTERS <i>Code Masters</i>	The Orion twins have had a good run with this one. Like all their games it sells, and sells.	1.99

CPC NEWS UPDATE

We stay with CPC – Dixons

RETAIL giant Dixons has strangely denied reports that it is to pull out of the CPC market until the autumn.

"It is just not true", said Dixons' group buyer Alan Dickenson. "We are in fact putting together a promotional campaign designed to boost sales of the CPC which I feel underlines our commitment to the machine".

Commenting on suggestions that its subsidiary company Currys is cutting back on stocks of home entertainment machines Dickenson said: "They have a completely different market profile to ours which does not reflect our own policies in any way.

"At the moment they are having a spring cleaning exercise and getting rid of old stock to make way for new CPCs in time for the peak season".

Dickenson went on to reveal details of a forthcoming CPC promotion. This will include a free joystick and a 20-game bundle of Ocean software for the CPC484. Price £189 with a mono monitor and £299 with a colour monitor.

The CPC6128 will also be packaged with a free joystick and 10 Ocean games. Price £289 with a mono monitor and £389 with a colour monitor.

Gnome Ranger wins

CRASHING software House Level 9 has notched up a hat-trick in the Golden Oracle Awards sponsored by the Adventurer's Club. The company's bestselling Gnome Ranger title was voted adventure of the year for 1987 against strong opposition from Mastertronic's Nigel's Adventure and Knight One – itself a Rainbow/Level 9 production.

Other competitors have yet to make a showing in the number one spot. In the two previous competitions Level 9 topped from again, with The Worm in Paradise and The Price of Magic. A much enhanced version of the latter is now available on the CPC in Time and Magic from Mindbarn Software.



Red Baron flies again

A YEAR's detective work paid off for MicroProse staff – it managed to track down the arcade machine that set the leading simulation software company in motion.

Founder Sid Meier and Bill Stealey (pictured above) still battle with Red Baron – a World War I simulation – when they first met in a Las Vegas hotel.

Programmer Sid Meier decided he could write a

better game, despite Bill Stealey that he could sell it. The result was Helion Ace, the first of a long line of accurate simulations.

The machine took some finding – the hotel had changed hands and the video arcade had been dismantled. But persistence paid off and the veteran Red Baron now has pride of place in MicroProse's Maryland headquarters.

Game helps charity

CHILDREN all over the world will benefit from The Race Against Time – the latest release from Code Masters Plus 19900 0141021. For all profits will be going to Sport Aid '88.

The game, written by the Oliver twins, was the brainchild of Code Masters' Bruce Evans, who got the

idea for the project while watching a Sport Aid concert.

"I realised that here was an opportunity for us to use our special skills to help raise money", he said. "And with the Race Against Time people have the chance to have fun and make a contribution at the same time."

The game is an arcade adventure that ties in closely with the charity theme. Players take the part of legendary Sudanese runner Omar Khalifa, racing round the world and getting people to join the Race Against Time.

This is the first computer game to be written specifically for charity – and with global sales in mind great care has been taken to ensure that it offends no national, religious or racial grouping.

Price £4.99.

It's war to the DARTH

STAR Wars the movie eventually spawned Star Wars the coin-op for Atari – and Domark's bestselling conversion for the Atari ST.

Now Domark (01-043 8822) is following up its success with the release of The Empire Strikes Back, a one-player game which bears more than a passing resemblance to the movie.

The player controls both Luke Skywalker's speeder and Han Solo's Millennium Falcon, and has to battle to safety through four levels of increasing difficulty.

The first two stages see the player pitting his snowspeeder against Darth Vader's robots and Imperial walkers. Then it's into Han Solo mode to battle swarms of TB fighters and negotiate the asteroid belt.

Programmed by Viktor Galin, The Empire Strikes Back will be available shortly.



Guns for two

LASTEST from Creative (0742 78347) is Blood Brothers – a spin-off app shoot-'em-up played out in the mines of the average player Scavys.

Two players control two brothers – Hank and Ken – whose task is to recover abandoned gems from the well-defended base.

Action takes place both on land and in the air, players being equipped with jet-bikes, thrust pistols and laser weapons. Price £9.99 cassette, £14.99 disc.

All your favourites are here!

WE'VE brought together the best programs from recent issues of Computing with the Amstrad CPC to produce three compilations at a very special price.

Whatever your interests you'll be delighted with their variety, and by studying the programs you will learn so much more about your CPC.

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Spaced - All the skills of the planet walk - and you can't stop any in this one
Football - Guide balls through the complex maze and drop them into boxes
Fishing - Cast your line and keep a keen eye on the float to catch the fish
Eggsplode - Read the secret taverns of the egg mine by digging through soil
Knights - Beat waves of the mutant dogs which swirls across the screen
Diamond Slagger - Navigate the druids through the mine, avoiding their traps
Magma Sweepers - Guide the Doodling to safety while taking up the turtles

Ten of the Best

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Orbale - Challenge yourself on the CPC in this classic test of strategy and wit
Party Machines - See the party leaders in a spin on this one game board
Perimeter - Try your hand at this popular card game, without the fall of real cards
Quarters - Position multi-coloured tiles on a grid in this classic test of strategy
Reactions - Press your keys, buttons and switches, with this reaction simulator
Yakkee - Hang on to your lucky rabbit's foot, blow on the dice and let them roll!

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This superb value collection contains over 30 programs ranging from clever, compact routines to file managers. There's a menu card index system, assembler, disassembler and machine programs, test the computer, printer buffer, and machine-code code reader. You can also catalogue all your disks, set priorities to boot with an example Masterboot program, hold more than one basic program in memory, produce multi-directional scrolling windows, design and print log fonts (fits on your printer), format disks to 200K, speed up your drive by five to ten per cent, test out all the variables in any Basic program, produce a shaded screen dump, add extra colours to any mode, send ROMs from your settings, RESTARTS to any line number, list all programs and their comments ... and much more!

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30

of the most popular utility programs from the pages of Computing with the Amstrad CPC

TO ORDER, PLEASE USE THE FORM ON PAGE 53

Through the Gateway

Gateways are connections to other computers. MicroLink has a number of these, to British, European, and American databases, and one which has come in for a bit of publicity recently is the USA-based Mathematics Videotex service.

This offers similar features to MicroLink, but as it's mostly used by American subscribers it is intriguingly different in style.

But the number of MicroLink subscribers using the gateway has made an impact. The UK SIG (Special Interest Group) has passed a message on to MUG concerning on this, and asking us for our ideas and reactions to the service.

They also have online parties a number of subscribers get on line at the same time and use the Mathematics CHAT facility to discuss anything that seems worth talking about.

So if you've ever fostered a secret ambition to invade America, this might be just the way to do it.

Linkup

Most MicroLink members - even the active ones who regularly chat, mail and use the Bulletin Board (BB) -

only know their fellow MicroLinkers as names and numbers. And most subscribers have questions and suggestions about the service, judging from the enthusiastic discussions on features and performance that pepper the BB.

So how about meetings, where users can get together in convivial surroundings and perhaps get to button-hole a MicroLink official specially imported for the occasion? That's the idea behind the Linkups.

So far, volunteers have said they'll organise Linkups in Manchester, Birmingham and London. As everything is being sorted out on the BB, dates, times and venues are extremely flexible, as things become more definite they'll be published in Mugsheet. And if the Linkups are as successful as they should be, they could well turn into regular events.

For the latest details on Linkups, mail MUG@5000 or check on the board.

Umbrella organisation

Starting a small business is encouraged these days, but anyone going it alone for the first time soon discovers a huge range of problems - bureaucratic, financial and

practical - which can sap the energy of even the keenest start-up.

ExpertLink is a new service aimed at both new and established businesses. Run along the lines of the bulletin board, it provides access to two teams of experts, one based at the University College of Swansea and the other based just about everywhere.

The first group consists of professors and lecturers with qualifications in a wide range of subjects from law to ergonomics. The second has an even wider base of experience - the MicroLink subscribers themselves. Many of these run small (and not so small) businesses, and have solved the problems themselves.

Subscribers can either post a question for public discussion or send it for confidential consideration by the UGS team. And anyone can volunteer answers, or pass on a useful contact name, or even offer a service themselves.

Quick!

Your turbine is on fire. What do you do? This month has seen some more unusual bulletin board entries, some of which could conceivably solve your problem.

For owners of incandescent reptiles, either the

Tortoise Trust (MAG@5000) which has been offering advice and leaflets on the care of the basking or the Mediterranean Fire Mongoose (MAG@100000), which consists of keen fire engine enthusiasts, might not think out.

Other ideas currently under discussion on the board are chess games via Email, a poetry corner, and gaming with computers. Someone's even trying to sell their latest music album, while MicroLink has made nobody a rock star yet there's always the first time.

More mundane matters managed to get sorted out, like how to send mail to New Zealand or how to download software to an IBM PC. It just goes to show; all you have to do is ask.

Shots in the dark

This page of news has to be prepared weeks in advance of publication - an inherent problem with such pre-emptive technology as ink and paper.

Things change fast on MicroLink. So a weekly MicroLink User Group newsletter is published on the system itself. This can reflect what's happening faster, as well as dealing with individual problems, provoking discussions (hopefully!) and giving updates on new features.

It's called Mugsheet. Written by Rupert Goodwin (MAG@5000) it's posted on the Bulletin Board (BB) in the MUG category late on Sunday evening each week.

It's also sent via MicroLink/Telexnet Gold electronic mail to a list of people who would rather get a copy mailed to them than use the BB. This also means that Telexnet Gold users who aren't MicroLink subscribers can see what they're missing. Again, contact MAG@5000 if you fall into the latter category.

Getting carried away

...is one of the reasons the Cambridge Computer Z88 has been so popular. A number of MicroLink subscribers either have one or are interested in the beast. And in the tradition started by Brian Valler-Lewis' (MAG@11237) Archimedes User Group, a Z88 group has started up on MicroLink.

This one's organised by Vance Burton. Everybody in

the group keeps a list of all the other members, and the Email system makes it easy for anyone to send a request for help or a new discovery to everyone else.

And if nobody in the group can solve a particular problem, then as soon as Cambridge Computer comes up with the answer it can be distributed to everyone.

The Archimedes group

has been doing great things since its inception. Discounts for members on a range of commercial software have been arranged, and contact made with several suppliers. It must also be the only nationwide discussion forum which is entirely free from commercial considerations; the only people making the news are the users themselves.

10 LINERS

CODEMASTER

By R. Jackson

THIS is, of course, the old favourite Mastermind. Not rather than one of the usual text-only implementations, this is a graphical treat.

```

10 FOR I=0 TO 100:GOTO 100:GOTO 100
20 PRINT "100 99 98 97 96 95 94 93 92 91 90"
30 PRINT "89 88 87 86 85 84 83 82 81 80 79"
40 PRINT "78 77 76 75 74 73 72 71 70 69 68"
50 PRINT "67 66 65 64 63 62 61 60 59 58 57"
60 PRINT "56 55 54 53 52 51 50 49 48 47 46"
70 PRINT "45 44 43 42 41 40 39 38 37 36 35"
80 PRINT "34 33 32 31 30 29 28 27 26 25 24"
90 PRINT "23 22 21 20 19 18 17 16 15 14 13"
100 PRINT "12 11 10 9 8 7 6 5 4 3 2 1 0"
110 GOTO 100
120 PRINT "100 99 98 97 96 95 94 93 92 91 90"
130 PRINT "89 88 87 86 85 84 83 82 81 80 79"
140 PRINT "78 77 76 75 74 73 72 71 70 69 68"
150 PRINT "67 66 65 64 63 62 61 60 59 58 57"
160 PRINT "56 55 54 53 52 51 50 49 48 47 46"
170 PRINT "45 44 43 42 41 40 39 38 37 36 35"
180 PRINT "34 33 32 31 30 29 28 27 26 25 24"
190 PRINT "23 22 21 20 19 18 17 16 15 14 13"
200 PRINT "12 11 10 9 8 7 6 5 4 3 2 1 0"
210 GOTO 100

```

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SIMON

By Alistair Young

HERE'S a simple game, but inter-
estingly infuriatingly hard to beat.
Can you remember the sequence of

```

10 FOR I=0 TO 100:GOTO 100:GOTO 100
20 PRINT "100 99 98 97 96 95 94 93 92 91 90"
30 PRINT "89 88 87 86 85 84 83 82 81 80 79"
40 PRINT "78 77 76 75 74 73 72 71 70 69 68"
50 PRINT "67 66 65 64 63 62 61 60 59 58 57"
60 PRINT "56 55 54 53 52 51 50 49 48 47 46"
70 PRINT "45 44 43 42 41 40 39 38 37 36 35"
80 PRINT "34 33 32 31 30 29 28 27 26 25 24"
90 PRINT "23 22 21 20 19 18 17 16 15 14 13"
100 PRINT "12 11 10 9 8 7 6 5 4 3 2 1 0"
110 GOTO 100
120 PRINT "100 99 98 97 96 95 94 93 92 91 90"
130 PRINT "89 88 87 86 85 84 83 82 81 80 79"
140 PRINT "78 77 76 75 74 73 72 71 70 69 68"
150 PRINT "67 66 65 64 63 62 61 60 59 58 57"
160 PRINT "56 55 54 53 52 51 50 49 48 47 46"
170 PRINT "45 44 43 42 41 40 39 38 37 36 35"
180 PRINT "34 33 32 31 30 29 28 27 26 25 24"
190 PRINT "23 22 21 20 19 18 17 16 15 14 13"
200 PRINT "12 11 10 9 8 7 6 5 4 3 2 1 0"
210 GOTO 100

```



flashing lights and sounds and re-
member them? If you can beat 10,
you're doing well!

```

10 FOR I=0 TO 100:GOTO 100:GOTO 100
20 PRINT "100 99 98 97 96 95 94 93 92 91 90"
30 PRINT "89 88 87 86 85 84 83 82 81 80 79"
40 PRINT "78 77 76 75 74 73 72 71 70 69 68"
50 PRINT "67 66 65 64 63 62 61 60 59 58 57"
60 PRINT "56 55 54 53 52 51 50 49 48 47 46"
70 PRINT "45 44 43 42 41 40 39 38 37 36 35"
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150 PRINT "67 66 65 64 63 62 61 60 59 58 57"
160 PRINT "56 55 54 53 52 51 50 49 48 47 46"
170 PRINT "45 44 43 42 41 40 39 38 37 36 35"
180 PRINT "34 33 32 31 30 29 28 27 26 25 24"
190 PRINT "23 22 21 20 19 18 17 16 15 14 13"
200 PRINT "12 11 10 9 8 7 6 5 4 3 2 1 0"
210 GOTO 100

```

SPACE ATTACK

by Stephen McCoskie



GUIDE your craft through space
avoiding stranded humans while
dodging aliens and bombs. You
can use the joystick, or the Z and M
keys. Good luck, here!



```

10 FOR I=0 TO 100:GOTO 100:GOTO 100
20 PRINT "100 99 98 97 96 95 94 93 92 91 90"
30 PRINT "89 88 87 86 85 84 83 82 81 80 79"
40 PRINT "78 77 76 75 74 73 72 71 70 69 68"
50 PRINT "67 66 65 64 63 62 61 60 59 58 57"
60 PRINT "56 55 54 53 52 51 50 49 48 47 46"
70 PRINT "45 44 43 42 41 40 39 38 37 36 35"
80 PRINT "34 33 32 31 30 29 28 27 26 25 24"
90 PRINT "23 22 21 20 19 18 17 16 15 14 13"
100 PRINT "12 11 10 9 8 7 6 5 4 3 2 1 0"
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130 PRINT "89 88 87 86 85 84 83 82 81 80 79"
140 PRINT "78 77 76 75 74 73 72 71 70 69 68"
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160 PRINT "56 55 54 53 52 51 50 49 48 47 46"
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180 PRINT "34 33 32 31 30 29 28 27 26 25 24"
190 PRINT "23 22 21 20 19 18 17 16 15 14 13"
200 PRINT "12 11 10 9 8 7 6 5 4 3 2 1 0"
210 GOTO 100

```

```

10 FOR I=0 TO 100:GOTO 100:GOTO 100
20 PRINT "100 99 98 97 96 95 94 93 92 91 90"
30 PRINT "89 88 87 86 85 84 83 82 81 80 79"
40 PRINT "78 77 76 75 74 73 72 71 70 69 68"
50 PRINT "67 66 65 64 63 62 61 60 59 58 57"
60 PRINT "56 55 54 53 52 51 50 49 48 47 46"
70 PRINT "45 44 43 42 41 40 39 38 37 36 35"
80 PRINT "34 33 32 31 30 29 28 27 26 25 24"
90 PRINT "23 22 21 20 19 18 17 16 15 14 13"
100 PRINT "12 11 10 9 8 7 6 5 4 3 2 1 0"
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130 PRINT "89 88 87 86 85 84 83 82 81 80 79"
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190 PRINT "23 22 21 20 19 18 17 16 15 14 13"
200 PRINT "12 11 10 9 8 7 6 5 4 3 2 1 0"
210 GOTO 100

```


WE looked last month at two methods for sorting data into order. Now we'll investigate three more, and round off with some timings and guidelines for the various algorithms.

Bubble sort

This is a well-used and easy-to-implement sorting method. It is called bubble sort because the larger items are made to bubble up to the right. This can be a fast way of sorting if the data are in some form of order before you begin.

- 1: Set a counter *i* to 1.
- 2: If the *i*th element of data is greater than the *(i+1)*th element, swap them. Add one to *i*.
- 3: Repeat step three until the end of the data set is reached.
- 4: If no elements were exchanged in previous steps, stop because the data is sorted. Otherwise go back to step one.

An example:

```
10 3 8 5 9 6
```

Swap 10 and 3 because they are out of order.

```
3 10 8 5 9 6
```

Swap 10 and 8. Notice how 10 is bubbling up to the right.

```
3 8 10 5 9 6
```

And so on.

```
3 8 5 10 9 6
```

```
3 8 5 9 10 6
```

```
3 8 5 9 6 10
```

Now the end of the data set has been reached, we have done some exchanging, so we are not finished. The whole process is therefore repeated.

```
3 8 5 9 6 10
```

3 and 8 are in order so do not swap them.

```
3 8 5 9 6 10
```

8 and 5 need swapping.

```
3 5 8 9 6 10
```

```
3 5 8 9 6 10
```

```
3 5 8 9 6 10
```

```
3 5 8 9 6 10
```

The end of the data has been reached

Bubble quickly or shell out?

SIMON MONK and SUE BRADSHAW end their series on sorting data in Basic

again, but two swaps have taken place so we have not finished yet.

```
3 5 8 9 6 10
```

```
3 5 8 9 6 10
```

```
3 5 8 9 6 10
```

Swap 8 and 6.

```
3 5 6 8 9 10
```

Although the data is now sorted, the algorithm has to finish this pass and complete the next in which no items will need to be exchanged.

To see the bubble sort in action change the next program with last month's test program. Table 1 lists the variables the sort routine uses.

i	Pointer to an element of the array.
swapped	Is true if a swap has occurred.
temp	Temporary variable.

Table 1: Variables used in bubble sort

```
1000 808 Program 1
1010 808 BUBBLE SORT
1020 808
1030 808 swapped
1040 808 left to end
1050 808 IF arr(1)=1 THEN swapped=0
1060
1070 808 arr=arr+1:GOTO swapped=0
1080 808
1090 808 IF swapped THEN 1000
1100 808 END
```

Quick sort

As the name implies, quick sort's best feature is its speed. It is usually written as a recursive program, that is one which works by repeatedly calling itself. Unfortunately Locomotive Basic

cannot do recursion, so some way round this has to be found. Here a list is kept of pointers to sections of the array that need to be sorted. Of the sorting algorithms we have looked at, quick sort is the most difficult to program. It works like this:

- 1: Divide the data set into two parts, where all the numbers in the right hand side are greater than the numbers in the left hand side. This is done by moving two pointers from each edge towards the middle, exchanging the elements under the pointers if the element under the left hand one is greater than the element under the right hand one.

- 2: The same treatment is now applied to each half of the data set, and so on, until the data set is so divided that every individual element is sorted.

Here's a worked example:

```
7 10 3 8 5 9 6 11
```

Swap 5 with 8, and 6 with 10 so all the right hand side are greater than all the left.

```
7 8 3 5 6 9 10 11
```

Swap 3 with 8 and 6 with 7. No swaps needed on the right.

```
5 7 3 8 6 9 10 11
```

Swap 3 with 5. No further swaps needed. The next program and Table 2 detail the appropriate subroutine.

left	Left edge.
right	Right edge.
middle	Middle of left and right.
aux	Auxiliary pointer for partitioning.
temp	Temporary variable.
stack(100)	Push and pop stack array.
p	Stack pointer.

Table 2: Variables used in quick sort

```

100 DIM array(100) AS Integer
1010 DIM Progress 11
1020 DIM Count 1000
1030 DIM
1040 DIM array(100) AS Integer
1050 IF algorithm THEN use quick sort
1060 IF algorithm THEN use insertion sort
1070 IF algorithm THEN use bubble sort
1080 DIM array(100) AS Integer
1090 DIM array(100) AS Integer
1100 DIM array(100) AS Integer
1110 DIM array(100) AS Integer
1120 DIM array(100) AS Integer
1130 DIM array(100) AS Integer
1140 DIM array(100) AS Integer
1150 DIM array(100) AS Integer
1160 DIM array(100) AS Integer
1170 DIM array(100) AS Integer
1180 DIM array(100) AS Integer
1190 DIM array(100) AS Integer
1200 DIM array(100) AS Integer
1210 DIM array(100) AS Integer
1220 DIM array(100) AS Integer
1230 DIM array(100) AS Integer
1240 DIM array(100) AS Integer
1250 DIM array(100) AS Integer
1260 DIM array(100) AS Integer
1270 DIM array(100) AS Integer
1280 DIM array(100) AS Integer
1290 DIM array(100) AS Integer
1300 DIM array(100) AS Integer
1310 DIM array(100) AS Integer
1320 DIM array(100) AS Integer
1330 DIM array(100) AS Integer
1340 DIM array(100) AS Integer
1350 DIM array(100) AS Integer
1360 DIM array(100) AS Integer
1370 DIM array(100) AS Integer
1380 DIM array(100) AS Integer
1390 DIM array(100) AS Integer
1400 DIM array(100) AS Integer
1410 DIM array(100) AS Integer
1420 DIM array(100) AS Integer
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1450 DIM array(100) AS Integer
1460 DIM array(100) AS Integer
1470 DIM array(100) AS Integer
1480 DIM array(100) AS Integer
1490 DIM array(100) AS Integer
1500 DIM array(100) AS Integer
1510 DIM array(100) AS Integer
1520 DIM array(100) AS Integer
1530 DIM array(100) AS Integer
1540 DIM array(100) AS Integer
1550 DIM array(100) AS Integer
1560 DIM array(100) AS Integer
1570 DIM array(100) AS Integer
1580 DIM array(100) AS Integer
1590 DIM array(100) AS Integer
1600 DIM array(100) AS Integer
1610 DIM array(100) AS Integer
1620 DIM array(100) AS Integer
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1710 DIM array(100) AS Integer
1720 DIM array(100) AS Integer
1730 DIM array(100) AS Integer
1740 DIM array(100) AS Integer
1750 DIM array(100) AS Integer
1760 DIM array(100) AS Integer
1770 DIM array(100) AS Integer
1780 DIM array(100) AS Integer
1790 DIM array(100) AS Integer
1800 DIM array(100) AS Integer
1810 DIM array(100) AS Integer
1820 DIM array(100) AS Integer
1830 DIM array(100) AS Integer
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1920 DIM array(100) AS Integer
1930 DIM array(100) AS Integer
1940 DIM array(100) AS Integer
1950 DIM array(100) AS Integer
1960 DIM array(100) AS Integer
1970 DIM array(100) AS Integer
1980 DIM array(100) AS Integer
1990 DIM array(100) AS Integer
2000 DIM array(100) AS Integer

```

Shell sort

We have already mentioned that some sorting methods work faster if the data is already partly in order. What is needed is some method of getting the smaller numbers down to the left hand side of the data set as quickly as possible. The final program, shell sort, is an attempt to do just this.

Instead of just sorting adjacent numbers, it works on numbers separated by some distance. This distance is reduced until on the final pass the distance is one. The data is then sorted properly. This method is a modification of the insertion sort.

The distance separating the items to be sorted is often derived by successively applying the formula:

$$\text{Distance} = 3 * \text{Distance} + 1$$

Where Distance starts at one. The formula has been found by trial and error, and mathematicians have struggled in vain to find why it works so well. Using it we can calculate, for instance, the distances for sorting 50 items as 40,13,4,1. Here's how the algorithm works:

- 1) Find the largest distance that will fit.
- 2) Do insertion sort at that distance.
- 3) Decrease the separation to the next step down.
- 4) Repeat steps two and three until the data set has been sorted at distance

one. The data will now be in order. Here's an example:

```
7 10 3 8 5 9 6 11 2
```

There are only nine elements so using the sequence 40,13,4,1, four is the first distance we can use. So:

```
7 10 3 8 5 9 6 11 2
```

First 7, 8 and 3 are sorted giving:

```
3 10 3 8 5 9 6 11 7
```

Now 10 and 9:

```
3 9 3 8 5 10 6 11 7
```

Next 3 and 5:

```
2 9 3 8 5 10 6 11 7
```

The first pass through the data is complete. The distance is now reduced to one, and the data is insertion sorted in the normal fashion. Notice how after the first pass the data is now partly sorted, allowing the insertion sort to run quickly.

We have used the testing program to do some timings on each of the algorithms described. The results are shown in Table 9. Although these are for Basic, the conclusions apply to implementations in any language. The timings are in seconds and those in italics are predicted rather than measured. Note that insertion sort, which is the fastest algorithm apart from quick and shell sort, would take about 20 hours to process 10,000 items compared to 20 minutes for quick sort. Some rules of thumb based on the

```

| Pointer to array
| Auxiliary pointer
| Sorting distance
| An element of the array

```

Table 8: Variables used in shell sort

Number of Items	Selection	Insertion	Bubble	Quick	Shell
5	0.18	0.2	0.20	0.26	0.23
10	0.40	0.3	0.68	0.5	0.26
20	1.4	0.98	2.64	1.12	1.08
50	7.17	5.1	24.30	3.26	4.08
100	26.60	17.21	83.7	7.5	8.7
200	102.3	64.4	347.0	16.5	22.0
500	-	331.6	-	45.7	60.2
1000	-	1280.0	-	84.0	160.0
2000	-	4320.0	-	234.0	340.0
5000	-	23400.0	-	587.0	800.0
10000	-	120000.0	-	1320.0	2013.0

Table 9: Relative timings of the sorting algorithms

number of items needing to be sorted can be drawn from this table:

- **Five items or less:** Use bubble sort, it only takes a few lines of program, but is only slightly slower than more complex algorithms.
- **Between 5 and 100:** Preferably use selection sort as it is easy to program, but if speed is very important use insertion sort.
- **Between 10 and 20:** Use insertion sort because it is quicker than any other method. It is also the simplest, increasing bubble sort.
- **Between 25 and 700:** Use shell sort. It is slightly slower than quick sort but much easier to program.
- **Over 700:** There is nothing to touch quick sort for speed.

These rules of thumb are only intended as a rough guide and it is worth noting that quick sort works well in almost any situation.

We hope that this introduction to data sorting has proved both interesting and painless. In the near future we'll publish a machine code sort routine which works on string arrays.

```

1000 DIM Progress 111
1010 DIM array(100) AS Integer
1020 DIM
1030 DIM array(100) AS Integer
1040 DIM array(100) AS Integer
1050 DIM array(100) AS Integer
1060 DIM array(100) AS Integer
1070 DIM array(100) AS Integer
1080 DIM array(100) AS Integer
1090 DIM array(100) AS Integer
1100 DIM array(100) AS Integer
1110 DIM array(100) AS Integer
1120 DIM array(100) AS Integer
1130 DIM array(100) AS Integer
1140 DIM array(100) AS Integer
1150 DIM array(100) AS Integer
1160 DIM array(100) AS Integer
1170 DIM array(100) AS Integer
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1190 DIM array(100) AS Integer
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1990 DIM array(100) AS Integer
2000 DIM array(100) AS Integer

```


In this adaptation of the popular family card game you play against three opponents controlled by the CPU. The rules are simple. Four picture cards from a separate pack are placed face up on the table. Each player starts with a balance of £1000 and puts £5 in the kitty. A further £5 is then bet on one of the four picture cards.

The computer selects a player to deal first, and following each game the dealer is changed. You are always player one, and some players have one card less than others, though this is not an advantage.

The cards are dealt five ways - four players plus a dummy hand. The dealer has first choice of buying the dummy hand for a fee of £5, which is paid into the kitty. If he decides not to, the others are offered the opportunity.

Play now commences in a clockwise direction, with the first player playing his lowest red card. Any player who has the next card in the same suit must follow by playing that or top of the ace below.

If nobody can follow on, the last person to play must change the colour of the suit, and place his lowest card of that colour on the table. Play then continues in this suit. Events progress in this way until one player has used up all his cards. He wins the game and takes the kitty.

If during play, somebody puts down one of the four picture cards he takes any money on that card. If - as happens from time to time - nobody can follow on because they have no red or black, the game is over, and any cash in the kitty (and on the pictures) stays there for the next game. When you



NEWMARKET

STEVE BISSELL invites you to place your bets

start the game you will be asked to select a time limit between 15 and 120 minutes. The winner will be the player with the largest bank balance at the end of that period.

Usually if you are able to go at all there is only one card in your hand which can be played. A blob will be printed under the correct one and you press the spacebar to play it.

However, when changing suit you may find there is more than one possibility. For instance you might be changing to blacks and have both the ace of spades and the ace of clubs. Here you will see two blobs, and you must use the left and right arrow keys to select the card to play.

MAJOR VARIABLES

- #B/10 Starting value of cards
- #I Random selection for first dealer
- #J/20 The pack
- #K Current player
- #L/1 Players' cash
- #M/10 Contents of players' hands
- #N Contents of the dummy hand
- #O/10 Contents of the dummy hand
- #P Suit currently being played
- #Q Colour of the suit
- #R Starting number of current card
- #S/10 Screen location of graphics
- #T Set when the time is up
- #U Screen location of the cards
- #V Set when the first red is played
- #W Prompt for your next card

```

10 REM *****
20 REM To Steve Bissell.
30 REM C64 Computing with the Newmarket
40 REM *****
50 REM *****
60 REM *****
70 REM *****
80 REM *****
90 REM *****
100 REM *****
110 REM *****
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```

```

1000 REM *****
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```

1000 REM *****
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1070 REM *****
1080 REM *****
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Turn to Page 88

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DATABASE SOFTWARE

TO ORDER, PLEASE USE THE FORM ON PAGE 53

CAPTAIN BLOOD

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

ONE upon a time there was a penniless programmer called Bob Moorlock. In an attempt to save himself from starvation he wrote the ultimate computer program, one capable of generating a living space vehicle - the Ark.

After a freak accident in hyperspace, 30 clones of Moorlock's bloodness-awareness - Captain Blood - were created. Scattered like wild seed across the heavens, they drifted on the solar winds, finally coming to rest among the stars.

Using a Creation called life as his eyes, Moorlock searched for the stars, and over the next 800 years located 25.

The object of the game is to find the remaining five and so reassemble Blood. Success, and Moorlock will live forever.

The display is beautifully presented with a futuristic control panel on which are 18 switches, a videotext, and a highlighter in which you can transport willing stars.

All you can see of Blood is his hand, which sparks mostly as he presses buttons.

There are two alien ships to fly, either in rounded form or a fast metal and a silver language. The game starts with you looking down on a planet. By pressing the control switch on Opix - a remote-controlled ship - is

transported to the planet's surface.

A hair-raising ride through fractal mountains follows, all the time watching for resources which track you if you fly too high. Lifeforms in this galaxy always live at the end of Capixons, and following the computer guidance system you arrive at each planet.

The wireframe graphics solidify, and an alien appears. Now the fun starts. To converse with it you use the hand to point to icons which represent a vocabulary.

When a sentence has been assembled, position the finger over a mouse in the centre of the panel and press fire. Your icons are then translated into the language appropriate to the planet.

The alien's reply is in the form of more icons, and raising the hand over them brings a written translation.

When I first played the game I almost gave up because after 20 minutes of trying to get sense



out of an alien, he only seemed interested in hearing a joke about bananas. I got very frustrated and resorted to space.

In a fit of pique, and because it has bright colours and loud noises, I destroyed his planet.



The explosion was lovely, but a bit of a mistake.

Word gods found that in these parts, and once you acquire a reputation as a planet destroyer nobody else will give you the time of day.

To achieve anything you need diplomats, and after restarting the game I thought carefully about the progress to the final. After a while I remembered him that I was a friend, and with things on a pleasant footing he led me the coordinates of the next planet to visit.

Sometimes in the course of the conversation I agreed to find and rescue his pop - which I think is his family - so I teleported him aboard and took off.

You select your destination on a galactic map, and it is essential not to jump off at random because, as any space junk will tell you, landing your land in a non-viable (barren) situation. In other words, you can get lost among the thousands of uninhabited worlds.

As you journey around various planets you meet and interact with several aliens which can help or hinder your progress. As you get further into the galaxy Blood demonstrates and his hand develops the shales.

To have any chance of survival you must find the clones and designate them in the high-ground which will then feed previous levels in Blood. I first saw Captain Blood on the Atari ST, which had digitised speech. When I started to review the Amstrad version and found it speechless I wondered if speech would spoil the

game. Be assured it doesn't. My one niggle is the flying sequence. I appreciate that fractal drawings are very difficult and complicated to generate in these quantities, but the sides of mountains and canyon walls made up of dots and dashes.

Captain Blood could be the game of 1988 and has to be seen to be believed. I would recommend it just for the graphics alone - from the spaces, and the aliens are the best I have seen.

The puzzles are intriguing and frustratingly good and you will find all your powers of reasoning and lateral thinking to achieve your goal.

Dave Manning

Presentation 95%
Blood and with a playstyle - excellent.

Graphics 95%
Superb - the aliens are so convincing.

Sound 94%
Music by Jean-Michel Jarre is worthy of a place in the charts.

Playability 95%
Not for neophytes, more for thinkers.

Addictiveness 92%
The fractal problems will keep you occupied for ages.

Value 95%
Packed with such new concepts and ideas - worth twice the price.

Overall 94%
Captain Blood is a game others will emulate but never better.



NEBULUS

Hewson
£9.95 (tape)
£14.95 (disc)
Joystick or
keys

If you thought ladders and levels was dead as a game concept, think again, because Hewson's latest release gives an idea almost as old as videotaping a new angle. And great fun it is too.

Our hero is Pogo, a terminal-like alien who travels around his watery world in a minisub. Rising out of the ocean are eight cylindrical towers, and his aim is to bring them to the ground. Descriptive titles go and so that he is.

How he accomplishes this I haven't worked out, but it can only be done at the apex.

Your part in the proceedings is to get him up there. There is a one limit for each tower, and initially there are three instructions to play with.

First to come in for the treatment is the Tower of Eyes, so called because it is mainly inhabited by entities best described as eyeboggers, and who either bounce on the apex or move horizontally in a fixed path.

The campaign begins with Pogo popping out of his sub on to a platform on the outside of the tower's base. The platform is made up of modules, and in places these are arranged to form a staircase. The other way of progressing upwards is by means of the lifts dotted about.

There are gaps in the platforms, and it is often necessary to avoid them by jumping over the shorter ones or by using passages through the lozes.

If Pogo falls off he may be lucky and be stopped by a lower platform, but if he reaches the water he's had it.

The second effect that accompanied a drowning is unsurprisingly like a laugh. Watch out, some modules vanish when they're walked on.

As Pogo walks round the tower the viewpoint rotates to keep him in camera, and I take my hat off to the programmer for the effect he's achieved

here. It really does look like a rotating cylinder with him stuck on the outside. If you stand back a few feet it looks even more convincing.

Movement up and down is released by key-pressing, and the rotational and vertical effects are incredibly smooth.

Another hazard to contend with is the local population, which is understandably out to give Pogo a terminal shove. Luckily none are too bright.

Apart from the bouncing eyeboggers there are red balls which can be shot, black ones which can be temporarily frozen, and a jolly little flying bunch of gasses which is indestructible and always turns up at the second moment.

On later levels the eyes are replaced by other aliens with the same behaviour pattern.



Points are gained according to the height Pogo reaches and for killing and capturing. At the end of a level Bonus points are awarded for the amount of unused time, "exits", and techniques. Get enough points, and you win an extra life.

The route to the top is not always obvious at first, and the



further you get into the game the more obscure it gets. In fact I've got the seventh tower - entitled The Navy One - and I can't see any way up at all.

Maybe that's down to this being a preproduction version, or perhaps I'm thick. Anyway, the way up often involves solving tricky puzzles and split second timing.

After you've been there once it gets a lot easier, but still presents a challenge.

When you do reach it, Pogo goes into the apartment door and returns a moment later with a big cheery shriek on his face. Then the tower collapses from the top down, leaving him to jump into the sea to make his way to the next vision.

What I like about Nebulus - apart from the superb graphics - is that everything is so carefully worked out. The

gameplay is finely tuned and shows a lot of thought.

It possesses just the right level of addictive frustration to keep you at it and stand a chance of completing the game.

Hewson's Amibased titles don't seem to do so well in the software charts as they deserve. For my money the quality of its recent output has been consistently better than just about any other software house in the games arena, and I really do recommend you give this a try.

Tiffany Wood



Presentation 88%

Complete range of options except definable keys or quit button.

Graphics 95%

Absolutely brilliant - colourful, smooth and very effective.

Sound 89%

FX are good, the music's even better.

Playability 90%

Very hard to fault.

Addictiveness 90%

Definitely one you'll see through to the end - or try to.

Value 90%

Compared to some trash at this price it's in a different league.

Overall 94%

First rate. Grab this and a bottle of vitamin, and look yourself away for a fortnight.

ALL STARS

The Edge £8.99 (tape) Joystick or keys

MOST compilations either seem to have three to four top quality games, or are padded out with a lot of several rate ones. This compilation contains no less than nine games - all of which have been hit first time round - together with a demonstration version of Ganfield, The Edge's latest full-price offering.

A number of these titles are getting on a bit more, and it's interesting to see how some of the old Amiga Associates stand up to newer competition.

Bobby Beanie is an action-packed arcade adventure in which your task is to guide Bobby through a series of 3D screens in order to find his brothers who have been lost astray by his wicked cousin.

On your journey you come across many pitfalls which are difficult to negotiate alone, but

alone pushing another bearing. Bobby Beanie is difficult to beat, with plenty of action to keep you busy.

Inside Calling is set in an old mansion, where the crafty old lady Coulter has enticed your help to find a number of gems hidden by her late husband.

Using joystick and keyboard you must travel through secret passages and hidden doorways to find the loot.

This game is graphically impres-



sive with full 3D action, and locations where you can even have a game of snooker if it takes your fancy. Watch out for the killer snakes, and mutant mice, though!



Fairlight is another good 3D arcade adventure in which the objects have a number of real-world features such as momentum, inertia and weight.

Having been flung into the world of the Dark Castle, you must find the Book of Light which was lost long ago.

The compilation also includes the sequel, **Fairlight 2 - The Fall of Darkness**. This is even bigger than its predecessor, and should help to keep you out of mischief for many hours.

These games were quite successful a couple of years ago,

and are still as enjoyable as ever.

Brian Bloodaxe, on the other hand, is beginning to look dated. Brian sets, as legend has it, the conqueror of the Brits, and sets them into an orbiting mass years ago. It is rumored that he has been defeated and is about to invade.

Although the graphics don't add up to much, it's still an enjoyable diversion when there's nothing better to do.

In **Shadow Skimmer**, you are cast in the role of Second Officer on an interstellar cruiser,

DARK SCEPTRE

Firebird £9.95 (tape) £14.95 (disc) Joystick and keys

LONG ago the tales of the Nephelinde's life were visited by the Nephelinde's who, though initially peaceful, began to fight against the Lord of the Isles.

In an effort to thwart these plans, the Lord had his sorlocks forge a magical sceptre of awesome power. Unfortunately, all did not go as planned, and the Nephelinde's received the magical Shadow Sceptre.

The object is to locate and destroy the dark sceptre. To do this you must overcome its power and hack your way past companies of warriors sworn to defend it.

This is not a game of the joystick waggling or keyboard bashing variety, and you are restricted to a managerial role.

Five control options provide an interface with your warriors. Depending upon the intelligence of the soldier con-

cerned, he can remember up to three commands. Once you have selected one of the 36 possible actions, you may be prompted for any further information necessary to complete the task.

For instance, if the command was left, you must state which type of soldier you want to attack, and from whose army. This done, the character will set out in search of his quarry.

You can watch his wanderings, or select another warrior and issue further orders.

A light in progress is signified by the sound of clashing steel,

and the action can be viewed if you wish. The combatants perform a ritualized series of thrusts and parries until the loser is stabbed in the nose and combs out.

As well as the Shadow Lords there are five other armies on patrol. It is unlikely that you will overcome such overwhelming odds alone, so it is advisable to start with a recruitment drive. This is not as simple an option as it may appear - even after this order 'softened anyone' your warriors will engage the enemy when challenged.

The graphics are impres-

sive, with large but crudely defined and poorly animated characters. Dark Sceptre is not a game that I would recommend to my friends, and I'd think twice before telling my girlfriend.

Neil Aron



Presentation 80%
Extensive instructions, and a full range of control options.

Graphics 58%
Well below Firebird's usual standard.

Sound 45%
Very limited.

Playability 45%
Too much time is spent waiting for events to happen.

Addictiveness 35%
Not sure you are likely to play twice.

Value 48%
A contender for the budget category.

Overall 48%
Don't be fooled by the impressive packaging.

Your craft has a fault, and you have been sent out on a routine maintenance test.

Unfortunately, the cruiser's main computer seems to think you are attempting sabotage, and with so many dangerous weapons on board your task will not be easy. This is one game you just can't stop playing, with its fast run-and-gun action and super-sharp graphics.

Webok puts you in the role of the evil lord of the fallen world, where the White Wizard has managed to break through your defenses and is threatening to allow his forces of good into your castle.

Can you remember where you left the Orb of Power with which you can confront the White Wizard? **Warlock** is yet another 3D adventure in which the graphics really do impress.

In **Mindbays** you can choose between icon-driven control or traditional keyboard entry. It is an unusual adventure which you'll either love or hate.

You play the part of Prince Kyle who, accompanied by your



loyal band, must search for his wicked brother who has made off with the legendary mindstone.

If you're an adventure addict, you may well be put off by the presentation. But if you are prepared to gaze in a go, you'll not be disappointed.

All biological life seems to have disappeared from the previously thriving **Feltron** colony. Apparently some strange crystals have been attacking **Feltron**, and you must guide your robot friend

to the city to seek and destroy them.

In addition to normal control, the robots can be programmed, but first you'll need to open them up and fit a battery. Once open, you can type in your program using commands familiar to most programmers. It makes a refreshing change to play a game which is so different.

If you haven't found something to excite you in this offering, there's always the demonstration version of **Car-**

Red which allows you to play the first 10 screens of the real thing.

Most of the offerings are technically well above average, with some real gems among them. Even if a couple of them do show their age, they are still very pleasurable. At less than £1 each, how can you lose?

Steve Lucas

Presentation 81%
Reasonable.

Graphics 90%
Range from average to superb.

Sound 85%
A mixed bag.

Playability 93%
All very enjoyable games.

Addictiveness 93%
Some more than others.

Value 99%
Nine games of this quality for less than a tonner!

Overall 95%
A winner.

SIDE ARMS

Go
£9.95 (tape)
£14.95 (disc)
Joystick or
keys

Now if you've never heard of **Bazon** before let me admit, I haven't either. He sounds a cross between **Bono** and **Boris**, neither of which sound very threatening.

Bazon, however, is no less than a merciless tycoon who wants to exterminate the earth and its people. Another one! Get in the queue, **Bazon!**

Enough comment about writers of game scenarios, what about the mission itself? It seems that in the guise of Lieutenant **Harry** and Sergeant **Smasher** you must find **Bazon's** HQ.

It has at the bottom of a subterranean sea, so it's a matter of taking a deep breath and taking the plunge.

The screen has a central window in which the action takes place. The scrolling is smooth and the graphics colourful and fairly detailed.



The action is continuous and your reflexes will need to be fast to reach its later levels.

The way to **Bazon** and his ultimate weapon is fraught with danger. Flying fish come in swarms and consist with one with cost you one of your three lives.

Then there are **Bazon's** mighty soldiers - a range of monsters from green dragons that fire lasers to strange creatures that look like tapeworms.

When destroyed they leave behind a range of items that

you can pick up. These come in five varieties. A **Reining Bow**, for example, can be used to increase the speed of any projectiles you fire.

Others provide different types of fire power in addition to the laser you begin with. Picking up the tail gun, for example, means that you can fire in three directions.

Adding a **Reining** object can change it into something different - firing at a **Flow** can change it into a **Reing** baroque

launcher. One thing to avoid, however, is a wall, which will decrease your speed.

Side Arms is a good, straightforward shoot-'em-up which is playable and fairly addictive. Having said that, it's not going to break any records for originality.

Tony Hinnegan

Presentation 68%
One of two players, no definable keys.

Graphics 77%
Colourful and detailed.

Sound 65%
Impassable.

Playability 85%
Easy to get into and fun to play.

Addictiveness 83%
Should keep you going for a while.

Value 84%
Considering the price I expect more.

Overall 81%
Nothing new, but a respectable shoot-'em-up.

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MASK III – VENOM STRIKES BACK



Gremlin
£9.95 (tape)
£14.95 (disc)
Joystick
and/or keys

MATT Tracker's son East has been kidnapped by Miss Mayhem and the forces of Satan. They've whisked him off to the moon and are demanding that Matt surrender himself and his men.

Giving in to Venom would allow it to control the Peaceful Nations Alliance, so Matt has no choice but to infiltrate the enemy base on a solo rescue mission.

You are cast as Matt's friend Alan who is back at HQ watching events unfold on a VDU. Your task is to guide Matt safely through his mission.

The game is presented as a side-on view of the scenery which flips between screens. Despite what it says on the packaging about the moon, the first level appears to be set on Earth with grass, puddles and a lake to be crossed. Interposed are screens set in enemy buildings.

Level five is more of a moonbase, and I haven't got beyond it yet, so you only get one life.

Matt can carry up to four masks which give him some armament – mine types are available – I cannot access the penetration, a shield which also allows him to walk through walls, the paralytic, a levitation device, a healer which replenishes energy, and a variety of missile types.

As you use the faculty

bestowed by a particular mask it drains and is eventually exhausted.

Opposition comes in many flavours ranging from energy-sapping balls that rain down, through bomb-dropping UFOs, cannons, guns, homicidal bouncing beams, to a motley crew of other enemies.

One of the more vicious opponents is the angel of death which appears at the end of the first level. This is a DMG-spawning missile which is a real stinker to kill. I managed it eventually, but only by locating some devil-only positioned masks.

All masks for the password system which allows you to skip to later levels if you've been there before. The only thing I'm not keen on are only having one life, and the graphics. They're well enough animated but are executed in a dated 31.5kbit Mode 1. Other than that it's a good addictive game.

Tiffany Wood

Presentation 98%

Plentiful systems and definable lives, but only one life.

Graphics 65%

Well animated, but dull.

Sound 75%

Not hard, but nothing special.

Playability 90%

Excellent.

Addictiveness 95%

Disappointing.

Value 83%

Should have been higher with superior graphics.

Overall 85%

North recommending.

NORTH STAR

Gremlin
£9.95 (tape)
£14.95 (disc)
Joystick
and/or keys

OBITING high above an overcrowded and hungry Earth is North Star, a massive food factory built to space bumper cars. Just as this audacious project nears completion communication is cut and flights to it do not return.

You are sent to get a stop to whatever's going on. When you arrive you find it's just another posy alien food doing what comes naturally.

All you have to do is bank your way through nine levels of mayhem parking anything foolish enough to get in the way.

The screen shows a smallish futuristic-looking display of North Star's surface across which you launch landmines and forwards at will. Pressing the fire button reveals that you are armed with a yo-yo.

Running a few inches into space see the first writer appears bombarding something green like it. It seems to be out of control because not once did one of these little brown blocks take a shot at me.

Mild yo-yo, they must have a terrible case of something catching because the merrily brush with one spells death. A quick dose of the yo-yo soon sees it off.

The next host of alien thoughtless to show up looks like a big bouncing fungus. As you progress new types appear. They all run, bounce or fly, and

are easily dispatched with a bit of the yo-yo.

Some disappear to be replaced by a purple bubble, and if you can catch this before it floats away into a point are to be had. Others splash in a puff of oxygen which you can collect.

At intervals you find bonus jobs. Zap these for oxygen from out of it, and you lose a bit, 5000 points, or an extra weapon up to a maximum of five.

I only ever managed four – forward yo-yo, up yo-yo, smart bombs, and power bombs. Never did find out what the boots do, but I completed the game without them.

Graphically and sonically North Star is a treat, with colourful cartoon-style sprites and scenery.

The graphics is a bit busy and the software developer a little careless, but these are the only faults I could find in this otherwise entertaining game.

Tiffany Wood

Presentation 88%

Lacks only definite stars.

Graphics 89%

Staid, colourful and pretty.

Sound 86%

Good title tune and FX.

Playability 60%

Could have been higher with better collision detection.

Addictiveness 89%

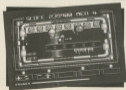
One of those you can't put down.

Value 94%

You can do a lot more at this price.

Overall 88%

Gremlin's best for a while.



10 GREAT GAMES II

Gremlin £9.99 (tape) Joystick and keys

If you've ever faced a great games mansion, you can't do much better than take advantage of this impressive collection of 10 games from Gremlin. However, perhaps like Games Good, Four Games Distinctly Average may have been a better title.

The first is a rather sick little escapade into the world of street violence, more of a splat-er-down than a shoot-'em-up.

Death Wish 2 takes you to New York, where it's your task to rid the streets of crime. Muggers, hookers, defenceless old ladies... all the stereotypes are there.

Somewhat predictably, all this hoodlum splatting becomes a little monotonous after a while. Still, your search for weapons and ammunition keeps the game alive.

If playing the violence isn't your idea of escapism, you can always zoom off to outer space. In **Final Matrix**, you've been asked by the Russian government to rescue hostages from the Cuban nuclear matrix.

First you must travel to the matrix of your choice, identified as a small blue square. This part of the game is not all that exciting as it's simply a matter of getting the matrix in your sights and passing the appropriate key.

Once you're on the matrix, however things are much more difficult. Each one consists of a 3D network of levels controlled by spider-like guards. Not only do you have to get past them, but there's also a range of obstacles - mines, blast be, energy loss squares - and an

top-of-their-time limit.

Some idea of the variety within the compilation can be seen in **Samurai Vikings**. Here you are a medieval war hero hoping to graduate as a samurai warrior. To do this you must prove your excellence in three disciplines: kenai, kendo and kenwai.

Before each test you are allowed to train and plan your attack and defence strategies taking into account your opponent's strengths and weaknesses. The animation is good, the music superbly oriental, but the action lacks real oomph.

Something more humorous is provided by **Jack the Ripper** & **the Criminal Coppers**. The mischievous ringer finds himself in the jungle with his father and a host of unfriendly natives, all ready to give him a good spanking. Still, there's ample opportunity for him to practise his Texan impressions on the dangling creepers.



There are also plenty of scenarios which, unbeknown to modern gamers, have plenty of napping power. As in most platform games, this one provides lots of puzzles.

The graphics are colourful and the plots suitably humorous. This is certainly a game with lots to do and see.

Real the Great Mouse Detective is similarly humorous,



being a special on the Conan Doyle stories. In this case your friend and accomplice, Doctor Dawson, has been kidnapped by a nasty little robot named Ratigan.

Armed only with a magnifying glass, you have to collect five clues from various jarrily litting each scene. Some, however, contain false clues while others are empty.

Any mousetrap you pick up along the way can be dropped in the path of Ratigan's henchmen, while mouse traps give you added energy. The graphics are colourful, but the sound is relatively weak.

One problem with the compilation was the difficulty I had in loading certain programs, particularly **Samurai Vikings**, **Blat**, and the next game, **Mack**. In this you must locate five missing agents and train them. But before you can locate an agent you must assemble a machine from four security keys.

Graphically, **Mack** is quite good, but as in the previous game the sound effects are rather bland.

For its speed and sheer insanity, **Top Secretus** has come off tops. As a Deluxe look-alike you gather various parts of a computer program scattered about a toy factory.

In this way you will be able to destroy the toys manufactured by an evil god, which now has died.

Ultimately, this one lacks sophistication and although very playable is not for long sessions.

Finally, **And Watcher** Monty is another platform game. Monty the mole dreams of getting down on the exotic Greek island of Montoo. But

before he can do that, he must save enough cash.

This objective in mind, he takes off to Europe, where France, Italy and Germany, he believes, will provide all the traveller's cheques (and his of course) he requires. There are tokens to be found, which you use to fly from country to country.

As in the other platform games, in this compilation, the display is colourful, the animation fluid, and the tunes lively.

Except for two unreviewed games I haven't mentioned yet - **Canary Baker** and **Don** - this compilation offers excellent value.

Tony Hoggan

Presentation 80%

Comprehensive playguide giving detailed scenarios and instructions.

Graphics 83%

Nothing spectacular, but there's lots of colour and good animation.

Sound 84%

A wide range of angles and spot effects.

Playability 92%

Mack are pretty good.

Addictiveness 87%

Lots of it. Can bore with some games, and you can't throw in to the next.

Value 97%

Top mostly playable and addictive games for £9.99. Could you ask for more?

Overall 94%

Quality and lots of variety at a bargain price.



BEYOND THE ICE PALACE

Elite
£9.99 (tape)
£14.99 (disc)
Joystick or
Keys

LORDING tells of a mystical world where strange creatures dwell, a land of fantasy and magic. Lately the balance of good and evil has been upset, and the forces of evil are setting forests alight and killing simple woodcutters.

The wood spirits hold a meeting and decided to passaging someone into restoring the balance. They blessed an elf with the powers of the woods, and shot it into the air. Whoever found the arrow would find him or herself in an adventure of fantastic importance.

In this arcade adventure you control a dumb blond male who picks up strange arrows. On the opening screen you stand next to three weapons. Take the moustache-like battle ball on a chain because it's the most powerful.

The only way to go is down, so you drop into a cavern infested with ramped lizards whose moustache touch spins the end of one of your nine lives.

The scenery scrolls in all directions, and it's quick and gets less considering the big playing area.

Deeper into the cavern you meet axe-throwing combats and what look like flying scorpions which take quite a few hits to kill. These little happens three deggers, so terminate them as soon as possible.

You can summon a spirit which makes a brief appearance to help in certain matters. Only two of these are at your disposal but if you make occur-

sions off the beaten track more are to be found.

Items which are spotted about the level bonus points, and you'll occasionally find traps (explosive). These are often weaker than the one you've got, and are best left behind.

If you survive the cavern, a bottomless pit, and a big bad dragon, you're into the palace itself. Here you must make your way up using ladders and platforms.

I'm writing this just before deadline, and I haven't got nearly as far as I would like, but I will, I will!

Now and again the opposition arranges itself so that you lose most of your lives trying to get past them, whereas you've been through that bit before without much trouble.

In all, a good effort, addictive and worth a look.

Tiffany Wood

Presentation 88%
 Definite bits and pieces to find, but takes yanks to load.

Graphics 87%
 Pretty, with good scrolling.

Sound 87%
 Some excellent in-game effects.

Playability 84%
 Occasional bizarre situations lose a few marks.

Addictiveness 90%
 Funny - I'm writing this at 3 am!

Value 89%
 Above average.

Overall 89%
 Not quite an Arcade, but it's close.

IMPACT



Audiogenic
£9.95 (tape)
£14.95 (disc)
Joystick or
Keys

I FIRST saw Impact on the Atari ST nearly a year ago, and now it's been converted for the CPC. It's a fair copy of the ST version, but I wonder whether there's been too much of the Atari's raster fix in the Atariport.

The scenario is that you're trapped in a 1970s arcade game. Every second hour is blocked by a wall of coloured bricks, and you've got to beat your way through 99 levels to get out. As usual you have a bar at the bottom of the screen, and a ball bouncing around.

Audiogenic's slant is that broken blocks often release a token. Called it, and a cursor moves across a group of nine icons representing special features.

You have the option of not selecting the feature and either they build bonus points at the end of the level. But if you decide to open the box you can take on - among other things - a wide or sticky ball, multiple or indestructible balls, and five power.

A novel feature is that on some screens blocks have letters of the word bonus on them. If you beat the blocks in the right order you get - you've guessed it - a bonus. If you manage to stay the course, there's a screen designer so you can inflict more upon yourself. Had this program appeared

10 to 15 months ago it would have tried quite hard. Unfortunately a lot of water has passed under the bridge since then, and floating in it I can remember about six other CPC breakout.

I can't see a reason for another, apart from a lack of ideas. Oh, this one has unique features, but they all do.

If you haven't got a joystick, you are probably better off looking for one as part of a competition, or perhaps a budget version. If you want to pay full price, Revenge of Dair is the best sound.

As for Impact, not bad, but a classic case of too little and too late.

Tiffany Wood

Presentation 90%
 Screen designer lets in above the crowd.

Graphics 75%
 Fair, but not outstanding by today's standards.

Sound 80%
 No fare, but good effects.

Playability 80%
 If you want it, it plays well.

Addictiveness 80%
 Would have been much higher 15 months ago, but now it's not hot.

Value 70%
 You can pick up a decent breakout on a competition or budget level.

Overall 78%
 Sorry, but Dair's balls just don't cut it a more.



SUPER STUNTMAN



Code Masters
£1.99 (tape)
Joystick or
keys

As Super Stuntman you must fight your way through fire, cannonballs and more to complete each scene. All the while the fast game tries to lunge you into the following fire — or so it says here. There are seven screens

depicting a desert chase, a power boat race, a chase through a forest, and so on. Each has various obstacles which you must avoid. For instance, on the first screen there are blue mines into which the baddies try to shove you.

If you hit a mine you go into a spin and get 1000 points for avoiding action. You're allowed to crash twice per screen, but it's third time unlucky.

You are also working against the clock. The screen scrolls

vertically, and it's easy to get stuck behind rocks. It can take an age to escape from these and sometimes you just can't get out from behind them at all.

In the power boat race you have to navigate your way around a stretch of water, the obstacles forming a sort of maze. Mines also tend to take otherwise you'll run out of time looking.

Have you ever tried reversing a power boat? The playing area is only 10 times the width of your vehicle and it would rather lurch left or right than go in a straight line, so you're constantly steering.

It reminds me of all the old movies in which you see a driver frantically turning the wheel left and right while driving down a perfectly straight road.

It takes a while before you realise what you're supposed to be steering at — I'm still not sure, but I keep being anyway. Oh yes, the baddies.

When your three lives are up you have to start again at screen one, which is at first a

nuisance and later a bore.

Once you master it the game will hold little interest other than trying to beat your high score. Buy if you must; no if you can.

Ian Wright

Presentation 90%

High score, definable keys and pause. No instructions.

Graphics 85%

Uses only a small part of the screen for the action.

Sound 78%

Five wild theme tunes, bangs and raps.

Playability 65%

It's like trying to drive on a solid pan.

Addictiveness 58%

Only for a few afternoon.

Value 65%

Budget by name, budget by price.

Overall 65%

Amazing but of doubtful lasting interest.

COLOSSUS MAH JONG



CDS
£8.95 (tape)
£14.95 (disc)
Joystick or
keys

The best description I've heard of Mah Jong is Chinese Runners. That may be rather unkind because it is one of those games that is fairly easy to play but difficult to excel at.

However, it is still basically a collection game, the object

being to acquire four sets of tiles and a pair. A set can be a pung — three identical tiles, a chow — four identical tiles, or a shew — a set of three of the same suit. The manual contains a basic set of rules, and for the novice there is a tutorial program.

You play the East Wind against three computer opponents. An option to play against real people would have been nice, but the program is full of user-friendly features.

For example, the computer can suggest which tile to dis-

card, the speed of play is adjustable, discards can be face up or down, you can peek at the other players' hands, and you can take back your last discard.

There are also nine levels of difficulty to cater for your increasing expertise.

It is just about possible to collect a hand containing 28 tiles, while 20 is the maximum that can be shown on screen. Therefore some tiles may not be displayed, but they will be included in the score.

Colossus Mah Jong is fascinating even though I have a predilection for trick-taking

games rather than collecting ones. In spite of its gentle connotations, the game is usually played at speed and you need your wits about you to make good decisions based on a set of Chinese characters.

The program plays in the British Mah Jong Association rules in all but a couple of minor respects, and I think Mah Jong aficionados will enjoy it if you fancy learning to play but never got around to it, or can't serve up the realists for a set, this is your chance.

Ian Wright

Presentation 90%

Keys or joystick, tutorial option, nice manual.

Graphics 78%

Tiles are large, easy to read and well defined.

Sound 0%

None, sorry!

Playability 85%

Easy to make your move, and nine levels of difficulty.

Addictiveness 78%

Depends how addicted to Mah Jong you are — and how short of opponents.

Value 85%

It's cheaper than a Mah Jong set and you get three opponents thrown in.

Overall 85%

A good game, well implemented.

Get more from your Dos

DAVE DORN examines two ways of maximising a high-capacity 5.25in second disc drive

ONE complaint frequently heard from serious CPC users is the high cost of disc storage. At present 3in discs are anything between £1.80 and £2.99 each, while 5.25in floppies can be picked up for around 30p.

On the face of it, adding a second 5.25in drive can considerably reduce media costs. However, it does nothing to increase the capacity of each disc, as a 5.25in drive acts in exactly the same way as the Amstrad 3in equivalent. That is unless you employ an alternative disc operating system.

I've been taking a look at two such products - Ramdos from KDS Electronics, and Rodos from Romantic Robot. In conjunction with an 80-track double sided 5.25in disc drive both programs offer a vast increase in capacity, but go about it in different ways.

KDS Ramdos

Ramdos is essentially a suite of three disc operating systems (DOS) interfaces, one for each of Amstrad, CP/M3, and CP/M Plus. There are also two utilities - one for formatting discs, the other a Basic file to allow Ramdos to be used with Tasword.

None of the programs is protected, and KDS suggest that a copy of the relevant Ramdos module is saved on each 3in disc it is to be used with, a course of action which saves a lot of disc swapping.

To get started you run ramdos.exe, which presents you with a menu where you can choose the area of memory in which the machine will reside. Ramdos is then loaded to 8:2000 and relocated to the required position in memory - either in bank 7 if your machine is expanded, or at the top of free memory in a 64k CPC.

CP/M3 users need to modify their start-of-day disc using shupgen.com and syogen.com, but the necessary

steps are well documented.

Under CP/M Plus, you type ramdos at the A: prompt, and are presented with a menu from which to choose the disc format you will work with. Alternatively you can specify the format as a parameter to the command, for example ramdos+ D30 (D30 is one of the format designations). However, it is not possible to format a disc to high capacity under CP/M Plus or CP/M3.

Formatting is taken care of under Amstrad by loading the program formatable. You are presented with a 10-choice menu, only three items of which need be of immediate concern. There are four standard formats for drive B, which apply to Amstrad, CP/M Plus and CP/M3. These give capacities shown in Table 1.

You can specify fancy formats of your own by altering the disc parameter block (DPB), though KDS wisely suggest that this is something for the more experienced user. It is possible by altering the DPB to allow your CPC to read or write almost any disc format, and this is made easier by a menu choice to take care of the task.

I chose to use the D10 format as it gives the highest capacity, and because I feel 128 directory entries are likely to suffice. Formatting is simply a matter of choosing the option to view change format, selecting the format you require, and then picking Format from the menu. At the same time you can set drive A to one of four built-in formats - Amstrad data, PC8, and

System, together with a special buffer format that is used to copy drive B discs.

It is not necessary to use the change format option to initialise the disc format every time you boot Ramdos, but I found that by setting it up from within the menu disc access was speeded up by a significant factor. More useful is Reconfig - the option to change the default format within Ramdos.

CP/M Plus users can avoid the necessity of using the CP/M version of Ramdos to access drive B by patching the EMS file on their working disc. KDS has thoughtfully provided the necessary data as an appendix to the manual to enable even the newest user to do this.

It involves the use of SID under CP/M, but is simple and straightforward if you follow the instructions to the letter. You must, however, remember to use only one format of disc under CP/M as the changes to the EMS file will not allow for the other two.

RDS allowed a bug to creep into the first version of what is otherwise a good utility - it wouldn't work with ram-based programs - but was quick to replace the disc with a debugged version. Should you have any problems with one of the earlier discs, a phone call should sort things out.

Overall, Ramdos works very well with all three operating systems, and is simple to use. For increased convenience there is an optional ram-variant which allows big drive B formats to be recognised automatically under Amstrad.

Romantic Robot Rodos

Plenty has been said about Rodos in the Amstrad press, but nobody has reported on it in detail with a high

Designation	Disc capacity	Directory entries
D1	716k	128
D10	786k	128
D2	712k	256
D30	762k	256

Table 1: Drive capacities and designations with Ramdos

Turn to Page 36

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capacity 5.25in drives. This system is very different to RDS's, being non-file based and not quite as flexible for the type user.

Installation of the rare is straightforward, but Romantic Robot refers you to the instructions for your particular console for advice on fitting. I would have thought it simple enough to include instructions in its own manual, particularly as the company is at pains to point out that the user should sit below the disc rim, in other words in sockets one to six.

From then on the manual is little more than a list of the available RDS commands and the syntax for using them. I found no mention of any Rados error messages, and the lack of an index is most frustrating.

I understand that the manual is being re-written by an experienced author. I hope Romantic Robot has it found a little more accuracy – a paper clip holding 22 photocopied A4 pages being hardly adequate, or what one expects from a £30 package. In the meantime if you need more information, you are faced with buying a disc of documentation for just under £15.

Disc formats

Rados offers four formats, only one of which seems to give expanded storage. That you may format a disc to normal IBM, Amxdos or CP/M system capabilities, or the 708 Sx Rados format. The first three are as Alan Beger intended – with the exception that they can be used with an 80-track drive – by informing Rados that you are using such a thing. I was unable to coax CP/M to recognise Rados 800k format, although by using Amxdos I could read and write Rados formatted discs.

It is possible to patch the disc parameter block to recognise Rados format, but I feel such activities should not be left to the user. However, being able to read 80-track discs on an 80-track drive goes some way towards redressing the balance, although the lack of higher capacity discs under CP/M is a major disappointment.

Under Amxdos it is a different story. Rados gives the CPC a new feel, and an altogether different environment in which to work. Those who have not

experienced Megas or Unix have missed out on a number of very nice features – tree-structured multiple directories, random access filing, and higher disc capacities combine to make a very comfortable system.

Rados offers all of these under Amxdos, and in a very palatable way. Higher disc capacity is obviously useful, but when combined with tree structuring it is doubly so. A directory of this nature is easy to follow, and has some of the inherent drawbacks of numbered user areas.

Each disc has a root directory. This is much the same as the normal User 0 area that you will be familiar with, but it can hold other directories as well as file entries. So you may have an entry in the root directory entitled games.dir, which is a directory in its own right. The command `IMRDIR`, or its shortened form `IMS`, is used to do this. Thus you would type:

```
IMS games
```

and the directory is created for you.

Suppose you have two types of game you wish to store – arcade and adventure. To differentiate between them and other types of program you could put them all in games.dir, and to classify them further you could create two sub-directories from games.dir – say `adventure.dir` and `arcade.dir`. The structure so far is shown in Figure 1.

All your adventures would then be stored under the directory `adventure.dir`, and all the arcade games



Figure 1. Nested directories under Rados

under `arcade.dir`. Simple isn't it? To access the programs, the following syntax must be used:

```
IMS/games/arcade/filename
```

The / character denotes the root directory and also serves as a delimiter to mark the end of the path to the file. Alternatively, using the

command `ICD`, you can move straight to the directory in which your program is held, for instance:

```
ICD/games/arcade
```

would take you to the same place, ready to load or run the game with `RUN filename`. It would be a simple matter to extend the tree to take into account other file types, so long as you stay within the 64 directory entries allowed.

Unfortunately, the random access filing commands do not give true random access, but a possible second level. You would have to write your own programs to make use of this facility as it is unlikely that software houses will support it.

Many other facilities are built into Rados, the disc formatter being not the least of them, doing away with the need for `DiskED` and `CP/M`.

It is also possible – according to Romantic Robot – to add more disc drives to your system. Unfortunately, I was unable to check this out. I was intrigued to note that physical drive numbers 261 to 264 are reserved for a hard disc. Perhaps Romantic Robot knows something the rest of us don't.

I could go on and on about the facilities offered in this super rom, but I won't. There's lots in there for most people, and also things that others will never use. The package is let down by a shoddy manual and the lack of immediate use for CP/M with large capacity discs.

Conclusion

I found the large capacity disc format of Romantic Robot a godsend, and it was great to be able to get all the files I needed for a particular job on one disc, and still have loads of room left.

It was very useful to have the patched `IMS` file on my start-up discs, and therefore have increased capacity with the minimum of fuss. In this respect Romantic is worth the asking price, and is particularly likely to find favour with those who don't already have a rombox.

Rados has been a boon in organising my files. The tree structuring has made finding them very simple, and fits in nicely with the system I've used

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From Page 20

is on my PC. The additional four commands are good, but the lack of easy access to increased capacity format under CPM is lamentable, as is the poor manual.

As both packages are priced within coppers of each other, comparisons should be easy. But not so. While Ramdisk lacks the comprehensive RSXs of Rodos, it loads with easy access to high capacity disc formats under the three main operating systems, and is easier to use. Its menu-driven interface is probably less intimidating than the syntax of Rodos's RSXs, and the manual, though not perfect, is much clearer than Ramdisk's.

The equation, therefore, comes down to comprehensive extensions versus ease of use and simplicity. It all depends on why you need the larger format discs, and whether or not you want to learn a new operating system. If you want Amos commands and a

menu-driven system, and either don't want or need MS-DOS file structure and pseudo random access filing, Ramdisk will fit the bill.

If you are happy to be limited to four formats, only one of which supports high capacity drives (without a lot of extra work), but want a comprehensive toolkit and a very good file han-

dling structure outside the CP/M environment, Rodos is the one for you. I wouldn't buy a romdisk just to use it though, as it then becomes rather expensive.

If I had to make a choice, I'd probably go for Ramdisk, purely because it is easier to use, especially under CP/M Plus.

Product: Ramdisk
Price: £35.95 (incl)
£35.95 (incl) and also software
£13.95 if bought with drive
£35.95 including 80 track drive
Supplier: ADD Electronics, 12 Hill St.,
Altrincham, North Cheshire WA14 5SD
Tel: 02832 2076

POINTS FOR

- Easy and convenient to use.
- ROMboard not necessary.
- Can be bought with a suitable drive.
- CP/M compatibility.
- Choice of file formats.

AND AGAINST

- Lacks Rodos's extra commands.

Product: Rodos
Price: £25.95 (incl) — introductory offer!
Supplier: Ramdisk Robot UK Ltd., 24
Coomerside Ave., London NW8 6TN
Tel: 01-205 8570

POINTS FOR

- Lots of extra commands.
- Allows more than two drives.
- No disc format to load.

AND AGAINST

- Not easily compatible with CP/M.
- Needs a ROMboard.
- The manual.



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Demon's Revenge

(Firebird)

Nicholas Ward has found a way to make revenge more difficult for the demon. Now you can go on fighting until a little longer, because if you run this little gem as Firebird's little gem you'll find that the collision detection has been removed.



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80 0000 0000 0000 0000
81 0000 0000 0000 0000
82 0000 0000 0000 0000
83 0000 0000 0000 0000
84 0000 0000 0000 0000
85 0000 0000 0000 0000
86 0000 0000 0000 0000
87 0000 0000 0000 0000
88 0000 0000 0000 0000
89 0000 0000 0000 0000
90 0000 0000 0000 0000
91 0000 0000 0000 0000
92 0000 0000 0000 0000
93 0000 0000 0000 0000
94 0000 0000 0000 0000
95 0000 0000 0000 0000
96 0000 0000 0000 0000
97 0000 0000 0000 0000
98 0000 0000 0000 0000
99 0000 0000 0000 0000
100 0000 0000 0000 0000

```

Joe Blade

(Players)

No longer do you need to get carved up by a mass computer program. Stick these few lines of data at the end of Casey's Cracker loader on the next page and you'll have infinite ammo, keys, and use of an enemy uniform. Remove lines corresponding to features you don't want.

```

28 Joe Blade
29 0000 0000 0000 0000
30 0000 0000 0000 0000
31 0000 0000 0000 0000
32 0000 0000 0000 0000
33 0000 0000 0000 0000
34 0000 0000 0000 0000
35 0000 0000 0000 0000
36 0000 0000 0000 0000
37 0000 0000 0000 0000
38 0000 0000 0000 0000
39 0000 0000 0000 0000
40 0000 0000 0000 0000

```

Reflex

(Players)

I don't know what your reflexes are like, but mine are awful. Fortunately, by adding these few lines of data to Casey's Cracker you can improve them no end. Literally, so end, because you get infinite power (impossible) - A. Finstein

Quite a few people are asking me how to hack games. Well, it isn't easy because you need a good knowledge of machine code. One 10-year-old aficionado (Jelle Michael) thinks he can learn enough in two weeks to start hacking! If I'll give him a start, he'll be lucky!

In principle it's fairly easy. You have to break through the protection to load the game, and then hunt through with a monitor and disassembler looking for the location that decrements the number of lives when you die. Having found it you write a short program which loads the game, disables the routine, and runs the game as normal.

The crucial part is getting past the protection. It is still relatively easy on a lot of budget titles, and a few of the more expensive ones as well. Often, though, the degree of protection is quite high, making a little innocent poking difficult.

Protection is put in to stop people loading a program without having to run it. If you can do that, you can copy the program, which we definitely do not endorse, and in the process I can't give you detailed instructions. If you can break the protection unassisted, you don't need me to tell you what to look for afterwards, because that's the easy bit.

Having said that, I don't know why software houses spend vast sums of money developing complicated protection schemes because none of them is any use against a cheap cassette recorder with tape to tape capability. Any game worth enough to get organised to pose a threat to the software industry's profits will know that. Also, with patience just about any protection scheme can be hacked, as the police on these pages show. Of course there are a different matter, because cheap disc copying machines cannot be bought in your local High Street store.

Another common question in your letters concerns the Diary page in the January issue. If you are getting Data exhausted in 50, as many people are, there are two possible reasons. The first is that there is a bug in the CPC-40 which doesn't like the ROM statements after the data in lines 140 to 160. Try removing the ROMs and colors, and this may solve the problem. I'll try to watch out for that one in future.

The other possibility is that you have made a typing mistake. The thing to note is that the # of "diary" ... in line 50 is looking for the diary in line 100. Make sure the last part reads 73,diary,ROM using lower case letters where shown, and that there are no extra spaces in "diary".

Tilkeny

Here are some tips as well. On Level 3 keep your ball positioned on the right-hand brick. After two hits it will disappear. Keep the ball going up the gap until you get a hold-ball icon. Once you have this, under no circumstances should you collect another icon, including ones for extra power. Keep sending the ball up

the chute until you either clear the screen or get an icon to let you move to the next level.

The colour of the move-on-to-next-level icon is the colour corresponding to the bottom-most brick.

```

27 Reflex
28 0000 0000 0000 0000
29 0000 0000 0000 0000
30 0000 0000 0000 0000

```

Casey's Cracker

No, Casey's Cracker isn't a game, but a head with four bodies. Just type it in and save it on tape. Elsewhere in this month's column are jokes for Joe Blade, Driller, Tankum and Reflex. If you can't find any of them, we ran out of space and they'll be in next month.

All you have to do is add the date lines shown to a copy of The Cracker, and you have a working game with a minimum of taping. Next, sit! Now run the joke.

```

10 Casey's Cracker
11 0000 0000000000
12 0000 0477,889
13 0000 0400,000
14 0000 0400,879
15 0000 0400,0
16 000 04 0 0
17 0000 0000000000
18 0000 0000000000
19 0000 00
20 00 00000 000 04
21 00000000
22 0000 00000000
23 0000000000
24 0000 0000000000
25 0000 0000000000
26 000 0000000000
27 0000 0000000000
28 000 0000000000
29 000 0000000000
    
```

put your game tape in recorder, and press Play.

Peter Casey of Malvern is the mega genius behind this one.

Doodlebug

(Players)

Between 1 and 255 lives — alter the variable lives in line

```

1 10 000000
10 00000 000
11 00000
12 00 00000
13 0000 0000,00,00,00,00
14 0000 00,00,00,00,00,00
15 0000 00,00,00,00,00,00
16 0000 00,00,00,00,00,00
17 0000 00,00,00,00,00,00
    
```

10 for the number you want — one to be had with this joke from Jim Malone of Liverpool. Or you can have infinite lives.

If you want a definite

```

10 0000 00,00,00,00,00,00
11 0000 00,00,00,00,00,00
12 0000 00,00,00,00,00,00
13 0000 00,00,00,00,00,00
14 0000 00,00,00,00,00,00
15 0000 00,00,00,00,00,00
16 0000 00,00,00,00,00,00
17 0000 00,00,00,00,00,00
    
```

Wiggler

(Romantic Robot)

I quite liked this one when it came out. Jim Malone got his version free with Doodlebug from Players. You can have infinite lives on a fixed number — follow the Doodlebug instructions.

```

1 10 000000
10 Wiggler
11 000000
12 00 000000
13 00000000
14 00000000
15 0000 00,00,00,00,00,00
16 0000 00,00,00,00,00,00
17 0000 00,00,00,00,00,00
18 0000 00,00,00,00,00,00
19 0000 00,00,00,00,00,00
20 0000 00,00,00,00,00,00
21 0000 00,00,00,00,00,00
22 0000 00,00,00,00,00,00
23 0000 00,00,00,00,00,00
24 0000 00,00,00,00,00,00
25 0000 00,00,00,00,00,00
26 000 00,00,00,00,00,00
27 000 00,00,00,00,00,00
28 000 00,00,00,00,00,00
29 000 00,00,00,00,00,00
    
```

number of lives, as well as altering the variable remove line 28. If you leave it in you'll get infinite lives whatever number lives is set to.

```

17 10 00000 0000 00
18 0000 000000 0000
19 00000
20 00000
21 0000 0000,00,00,00
22 0000 0000,00,00,00
23 0000 0000,00,00,00
    
```

Driller

(Incentive)

From what I've seen of it Driller is an excellent game, not boring as the name suggests (Ground — 20). I just wish I had more time to get into it, but I keep going round in circles.

If the tape version of Driller is a bit much for you

too, here's some data to be added to Casey's Cracker. Infinite energy and/or infinite ammo are features you don't want.



```

10 Driller
11 0000 00,00,00,00,00,00
12 0000 00,00,00,00,00,00
13 0000 00,00,00,00,00,00
14 0000 00,00,00,00,00,00
15 0000 00,00,00,00,00,00
16 0000 00,00,00,00,00,00
17 0000 00,00,00,00,00,00
18 0000 00,00,00,00,00,00
19 0000 00,00,00,00,00,00
    
```

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I certify that the attached submission is all my own work and has not been submitted to any other publication.

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HOUSE CALL



BT. spreads its wings

ROBIN NIXON visits **Telecomsoft**, the software offshoot of British Telecom

SINCE British Telecom's first foray into the software market with its premier title *Rainbird* – created by its first director, Tony Rainbird – Telecomsoft has become a major force in the industry.

Recently, it has restructured its range of three labels, *Rainbird*, *Firebird* and *Silverbird*. This includes everything from the corporate image used in advertising, through internal organisation down to the packaging. I visited the company to find out why.

The company has about 50 employees with a 50/50 split between men and women. According to director Paula Byrne, the company was a bit fragmented with each of the labels having its own development department and sales force.

‘We’re all fallible – that’s why creating new software is more exciting than selling Mars bars or Persil!’

– Paula Byrne

Obviously this led to higher overheads and increased project development time. However, since the restructuring this has changed – everyone now works in the same teams and resources are pooled.

Paula feels that the staff had been pigeon holed, but now there's a lot more scope for creativity and imagination. She puts down much of the

company's success to team effort and told me that she's now got exactly the team she wants.

That explained the internal reorganisation, but I was still curious about the changes made to the labels. Claire Edgley, the press and promotions manager, told me that since the release of the *Firebird Silver* range, although it has been extremely successful, people had been confusing it with the standard *Silverbird* range.

Also it was felt that the packaging was a little large and, due to other companies imitating their style, it was time for a revamp.

First of all the casing has been streamlined with distinctive designs to help with product recognition, and secondly they have been reduced in size so that more will fit on a shelf, producing more eye-catching displays.

Most of the software development is subcontracted, but there are a number of in-house designers who work with out of house programmers. Each project has its own manager who is fully familiar with the micro involved, and oversees the whole thing from start to finish.

Brainstorming

Telecomsoft's policy is to produce as many new and original games as it can, and only to tackle conversions when novel ideas are not forthcoming. One example is the smash hit *Carrier Command*, which jumped straight into the number two position in the Atari



ST charts. This game, which was given 10 out of 10 by our sister magazine *Amiga ST User* and will shortly be available on the CPC, was the outcome of a brainstorming session.

The development team had decided that it wanted a sea-based game which it intended to be an active Rainbow top seller. It was to be fast and to use state-of-the-art programming techniques.

The team came up with the idea of an interactive game involving tanks, planes and islands, with aircraft carriers as the main focus. To cap it all, it was decided that the game should have real-time 3D solid graphics. They took the scenario to the experts, Real Time, who accepted the challenge.

Towards the end of the game's production came the time when they had to think up a name - often there is a working name which catches on and is used for the finished product, but in this case it was simply The Game. They all got together round a

Our policy is to encourage as many people who want to, to get involved in as many aspects of the company as they are able

- Paula Byrne

blackboard and proceeded to come up with ideas which were written down. After reviewing the ones they didn't like, the name that stood out from the rest was, of course, Carrier Command.

Coin ops

One interesting field Telecomsoft is entering is the coin-op. However, this conversion is different to the usual as



the plan is to actually produce the arcade machines and convert some micro machines - such as *Starblaster* - to run on them.

It should be interesting to see how well Telecomsoft fares against the likes of Nintendo, Taito and Konami. Certainly it's a brave step to make, taking home video titles into the arcades, but with excellent games such as *Starblaster*, Telecomsoft stands every chance of succeeding.

BEFORE I left, Telecomsoft gave me a bag packed full of goodies worth well over £500 which is up for grabs.

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The sender of the first correct entry pulled from the bag is in for a big treat - a copy of everything released up to the closing date on the Rainbow label. That's at least nine top-selling games and utilities.

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If you're not lucky enough to win one of the major prizes you stand a chance of winning one of 10 exclusive Telecomsoft mugs - these are not available in the shops and cannot be bought. Or you could win one of 12 copies of the recent *Amiga* *Accolade*, *Garthik*, and there are a number of consolation prizes including postcards and mystery gifts.

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- _____
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 2. _____
 3. _____
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The database can only access one file at a time which is held in the computer's memory but this can be split into two sections, each ready for use at the start of a day. You can use the same file each section, for example, 100 customer names and addresses, 100 items of stock and 100 suppliers names and addresses. Each section having its own field headings but all being ready to be used as a source for loading and saving it.

The real power of this package lies in the interchange of data from its database to the word processor, file manager or spreadsheet, each ready for use at the start of a day. You can use the same file each section, for example, 100 customer names and addresses, 100 items of stock and 100 suppliers names and addresses. Each section having its own field headings but all being ready to be used as a source for loading and saving it.

It can be loaded into memory and used as necessary. You can use the database to store and track the items that the spreadsheet, file manager or spreadsheet address. From 1 to 10000. The loading pattern can be used in the file, including a running total as appropriate. The data can be printed at the end of each day or as appropriate, just as a list of the data. From the start of 1985, you can use the 250,000 names and addresses to store the names of all your customers.

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TO ORDER, PLEASE USE THE FORM ON PAGE 53

Assembly power at a premium

PHIL LAWSON gets to grips with Pyradev+, an economical CP/M Plus assembler

ANYONE interested in CP/M commands and utilities will at some time or other want to have a go at producing .COM files. The options are to use a high-level language compiler or to write directly in machine code.

The big advantage of machine code is that, when properly written, it is both very fast and takes up a minimum amount of memory. However, creating machine code programs can be a time-consuming process, especially if your knowledge is limited to the Z80 instruction set – the assembler and routines provided on the CPC system disc only understand the older 8080 instructions.

The upshot is that unless you get hold of a public domain Z80 assembler you have either to buy one or do a lot of converting between the two types of instructions. You could write a utility to convert one to the other, but the assembly process is long enough without putting in additional steps.

If you intend doing any serious programming you will probably want to go for a commercial Z80 assembler. Pyradev+ is just such an animal – a complete CP/M Plus program development system. It runs on the CPC6128, expanded CPC484/684, and

the PCW series. There's a Z80 macro-assembler, with editor, monitor, disc editor, and many other useful utilities. Everything is selected from an initial menu of 12 options, as shown in Figure 1.

The program editor

A powerful but friendly program editor is essential when developing your own routines. As this usually makes up the front end of the package and is the program you will be using most of the time, ease of use is essential. This is the main reason why I'm not keen on Heath's Devpac – its WordStar-compatible editor doesn't suit me – but like Amos's Monitor II whose editor is superb.

Pyradev+'s offering has more than 30 editing functions for such tasks as find and replace, block copies, deletes and pastes, file merging, and all the usual lesser features you take for granted.

Sadly though, to my mind it's the editor that lets Pyradev+ down when compared with the power of the rest of the package. Functionally it's sound enough, but it lacks elegance. You're presented with an almost-blank screen, with little more than line and character counts for company, and the overall feeling is that you're in a void. The current filename, active drive and the amount of free memory are also displayed.

Entering your source code is more enough, although care must be taken with the syntax. Providing direct access to CP/M would have boosted the power of the package considerably, as users of Amos's program editor Aped will fully appreciate.

The macro-assembler reads your code from disc and translates it into instructions recognisable by the Z80 chip in the CPC. These are then turned into one or more CP/M files, with the extensions .PCL, .HEX, .SYM or .COM. There is also an option to write .BIN files for use under Amosdos which

together with an Amosdos monitor, makes this a very comprehensive package.

Files with the .COM extension are the ones you can execute by entering the filename at CP/M's prompt. The others are special optional files which you can select at the start of the assembly process.

A .REL file is a relocatable version of the converted file, which is vital if you intend writing CP/M Plus resident system extensions (RSXs), though don't confuse these with Amosdos RSXs) or developing a big program in modules.

A .HEX file contains a list of all the assembled instructions in hexadecimal format together with addresses and checkmarks, and using the HEXCOM.COM utility from your system disc will convert it into a normal .COM file. A .SYM file is a list of all the labels used in the editor when writing the code, along with their corresponding addresses.

In a similar way to Maxam II, IF, THEN and ELSE statements allow you to specify conditions when assembling. For example, setting a flag to indicate which computer system the final code is to work on, a test could be made and depending on the result one of several pieces of code would be assembled. This enables a degree of portability across other Z80-based machines.

Programmers often develop software as a set of modules only brought together at the assembly stage. The Select instruction entered from the editor causes up to 32 named files to be added to the end of the current one.

The other way of handling modular source code is to produce a .REL, from each part, and finally link them all together with the LINK utility on your system disc. This allows you to alter and reassemble one module and not the entire program. Both these facilities give a high level of flexibility and control.

Several options are available just before the assembly process begins, through which you can specify the types of output files to be generated. You can also obtain a printout of any error messages and hard copies of the assembled code using the Print option.

When the process has finished, statistics are displayed showing the start, end, and length of the program, number of errors, how many symbols have been used, and the number of external references made. An external reference occurs when you try to



Figure 1: The Pyradev+ opening menu.

Turn to Page 26

4 From Page 37

make use of part of a program that has yet to be implemented, or merged with the `Global` command.

To help with the tedious task of debugging, two monitors are supplied. One is the original Pyradex monitor for use under Amigaos, the other is new, and works under CP/M Plus. They provide a method of executing your code step by step, viewing the contents of registers and memory, and with the ability to make alterations where needed.

The screen splits into four sections as shown in Figure 3. The top right area shows the disassembled code, which can be executed one instruction at a time and altered if required. To allow you to follow the disassembled code, it's possible to reassign the labels and symbols used when writing the program. This can only be done if the assembler's Symbol option had been set, creating the file used by the monitor to restore them.

A large section at the bottom of the screen displays the contents of 128 continuous memory locations in both hexadecimal and ASCII. You can change bytes in either of these two formats, and blocks of memory can be printed out.

One thing I missed was the facility to fill an area of memory with a certain value. A slightly more fiddly way of achieving this effect is through the Copy function by entering the start, end and destination addresses, but it's not quite the same.

The top left screen area is reserved for displaying the traps, up to five of which are colored for. A trap is the method used to stop the machine code from executing once a predetermined point has been reached. Instead of just setting the CPC to stop, it is possible to attach a condition to the trap.

For instance, you may wish to perform a loop until the value of the A register is zero, and the condition would therefore be A=0. The nice thing about traps, or breakpoints as



Figure 3: The monitor at work

they're more commonly called, is that whole sections of code can be checked very quickly and mistakes easily spotted.

The middle section of the monitor screen is general purpose, but it is mainly used for showing the contents of each register, and is updated after each instruction. The status of the flags is also displayed, along with the program counter and the previous contents of each register.

The alternate register set cannot be accessed, and this is the only grumble I have about the monitor. It's no great loss though, and very few register programs show this set at all. Use of the alternate registers is normally discouraged, if not forbidden. The facility to load, edit and re-save CP/M .COM files will be of great interest to those of us who enjoy nothing more than dissecting other people's code.

Utilities

If you only need to alter the add byte, or perhaps revive a corrupted disc, `Disc Nurse` - Pyradex's disc editing utility - will be a boon. Like many expensive dedicated packages it allows tracks and sectors to be read, altered and reserved. And it can handle discs with weird formats.

The simplicity and power of this utility make it a very welcome addition to my library, and the file recovery capabilities are equal to those of many other toolkits dedicated to this task. There are facilities for renaming and copying files (even on floppy-format discs and from or to tape), complete discs, searching for a named string on the disc, viewing, extended directory, sector editor, and many more.

Conclusions

The manual is well written, and includes a tutorial section which takes you through each aspect of Pyradex, with easy-to-follow text and examples. After only few hours use you should be talking to it like an old friend, and the confidence this brings will have you using the package to its full capabilities in next to no time.

There is no index, but the contents are comprehensive, and this coupled with a summary of the control keys for each program means never being stuck for what to do next. My only quibble about the manual is the tutorial section, where several example addresses and screen outputs are imposed. Pyradex has been informed of these problems, and I hope reviewers will be made.

All in all I'm impressed with this upgrade to Pyradex, and am sure that users of the original will take advantage of the cheap upgrade Pyradex is offering. At an introductory price of under £20, Pyradex represents excellent value for money.

Product: Pyradex
Price: £29.95 (or £14.95 on upgrade from original)
Supplier: Pyradex, P.O. Box 765, Mansfield Works, S61 4TQ.

POINTS FOR

- Powerful machine assemblies
- Monitor many uses
- Extensive assembly
- Excellent range of utilities

AND AGAINST

- Program editor rather unfriendly
- Being CP/M Plus based is not so convenient for Amigaos work

What is a .COM file?

CP/M recognizes many types of file, and one of the most common has a file name ending in .COM. This file name identifies it as a COM-based program - a piece of machine code which can be run by entering the name of the same before the CP/M's A> prompt.

Examples of these executable files include DISKTRK and MP. Many others are stored on your system discs supplied with your CPC, and are good reference text on CP/M will explain their use.

ADVENTURE

A brighter outlook

Gandalf on the world of adventures

I AM always ready to consider suggestions with regard to the format of this (your) column, and this month sees the start of two new sections. The changes have been made in response to your letters, so if you have further suggestions or want to comment on changes already made, please let me know.

My thanks to Graham Wheeler for the excellent maps and solutions he has sent in. Graham has improved his solution to *Rigo's Revenge*. A simpler way to cross the minefield is: From examine the egg move E, E, E and SE, and you are across.

Graham also says that I made a mistake in his solution to *The Neverending Story* printed in the March issue. In the room with the rats you must go in and take the key, entering your command as one input (Q) Move and take key. Sorry about that, Graham.

Viola Townsend asks for help with *Tavernwolves*. She is unable to retrieve the missing person from the manastery. Go to the bell tower, take a photo, then go down to the catacombs and sell Mr. Snodgrass.

A problem encountered in *Spytek*

has prompted Peter O'Sullivan to write in. He would like to know how to get past Switzerland. I haven't played this game, so I have to assume that by Switzerland you mean the mountains.

If so, get the spade and enter the car at the top of the slope. Pull the lever to go up the mountain. Note the rise in temperature. Dig, and take the fishing rod that you find. Hook the umbrella over the cable and slide down. Cast the line into the lake and you catch a large fish.

Go to the hut and feed the fish to the cat. This will enable you to take the skis. Return to the slope and go East to the coach station, dropping the skis before you enter the coach.

I have had a letter from R.P. Morrill asking for help with *Colossal Adventure*. Unfortunately, although he has listed the treasures he has found, he has not asked any questions. It would be rather a mammoth task to give the hints he needs, so I have decided to start a serialised solution this month. Have a look in Hall of Fame for further details.



Have you tried?

Ever wondered what to do when you have finished an adventure? Below are some suggestions for things you might have missed.

Leather Goddesses of Phobos:

● Try putting objects other than the jar into the machine - the rabbit turns into a rabbit.

● After getting the picture of Jean Harlow, open the door to the east.

Exochord:

● Try tasting Kuldor on anything reasonably magical.

● Give something to the adventurer after he has said Hello Sailor.

Hollywood Hijinx:

- Tried calling Inhofem (882-8000) on the 'phone!
- Tried to roll up the rope!

If you have discovered any amusing responses to actions you have undertaken in an adventure and would like to share them with other readers, send them in to me for inclusion in this section.

Home is the gnome

George Ranger — Part II of a serialized solution by Graham Wheeler

Part II

Read the sign, open the gate. The gate won't let Ingrid open it because its gears have been stolen, so Ingrid offers to get them back and the gate gives her a bag to put them in. Up (continue?), yes, up (continue?), yes, up (continue?), yes. On the way you encounter a yeti. Say hello to him, and he tells you about his shoe problem. Up (you are now on the clouds), SW, W, NW, NW, get the diamond, get the cloudstuff, SE, SE, E, NE. When you next see the yeti put the cloudstuff in the storehouse.

Put the diamond into the sack, go to the penguin. If she mooves, follow her until she tells you her problem. Get the egg, go to the icebridge. South. The bridge breaks and you find yourself on an ice-floe in the river. Wait until you see the penguin. Tell her to follow you, then to paddle the ice-floe West. The penguin helps you reach the river bank.

Go to the Fire King who tells you that he has kidnapped an icechild because the icepeople have caused a flood that has put out several of his fires. W, open the gate. W, get the icechild and put it in the sack. Go to Whitehall. The icequeen takes back the child and offers

to help you. Tell her and the rest of the icepeople to follow you, go to the icewarrior and tell him to follow you, go to the ice fall.

Look to make sure everyone is with you, tell the icepeople to wait twice and push the ice fall six times. Tell the icequeen to wait then push the ice fall six times, and the icewarrior to push the ice fall six times. Use the abbreviation ICEF to make sure all the inputs will fit on one line.

South, wait until the water is at a low ebb, E, get the ruby and put it in the sack. Get the log, get the sack (you will have dropped it), W, N (the log is the nose of the float so all is now well), wait until the Queen and the warrior are back with you, go to the Fire King (the King and Queen make friends).

Tell the icewarrior to follow you, go to the tree trunk. Tell the icewarrior to wait seven times then push the tree trunk NE, S, give the diamond to the gnome. He throws you into the garden. Get the emerald and diamond. Wait (until the tree trunk floats towards you), get the tree trunk and stand on it. Wait until you see an icebridge. Jump North, go to the gate, give the diamond, sapphire, ruby and emerald to the gate. It now allows you to pass. N (you are almost home) = game over = 1000 points. Rank: George Ranger.

Be a Beeble brox

Whitaker's Guide to the Galaxy — Part III of a serialized solution by D.P. Francis.

You find yourself in the dark again but something wet is soon felt. Your fingers are actually in a glass of wine. Coming to your senses you realize that you are at a party where you, as Trillian, met Arthur Dent and a mysterious man called Phi.

Examine Arthur closely and you will see that he has a huge ball of fluff on his jacket. This is just what you want, but your hands are full. Drop the plate you are holding, get the fluff, and put it in your handbag. Get the plate again

otherwise the pushy hostess won't leave you alone.

Now all you need to do is wait. Give Phi a look and he will eventually come over and take you out to his quarters. As you blast off, everything once again becomes dark. You find yourself holding a satchel in a country lane. It's the lane outside Arthur's house, and you see Ford Prefect.

Open the satchel and remove the stroker fluff, towel and walk-in-air signalling device. Go North, and you will find Arthur lying in front of the busstop.

Offer him the towel and, when he refuses it, go over to Professor and ask him to take Arthur's place. He'll make a bit of fuss but will eventually do as you

HALL OF FAME

ask. Now you and Arthur can go to the pub. Buy the peanuts and have a drink (no more than three!), and, when the house is destroyed, follow Arthur back to the ruins.

Drop the satellite and put the fuel on top of it. Wait until the Vogan ships



appear and drop the signalling device. Arthur will pick it up and push the right button. Everything goes dark. This time

you find that you have become Zaphod Beeblebrox, President of the Universe. You are on your way to steal the Heart of Gold (with a little help from Trillian).

As your spaceship zooms towards its destination, search the seat carefully and you will find some seat fuel and a key. The key opens the toolbox, which you should take.

If you continue on your present course, you will not make it between the cliffs and the spire. The trick is to make the autopilot do the work for you, so steer towards the spire. It gets closer and closer and, at the last minute, the autopilot wakes up and steers you to safety. Now stand up and go North to the door for the dedication ceremonies.

Walk around until Trillian appears. She will jump out of the crowd and hold a gun to one of your heads. The guards are hesitant to tell them not to shoot. The guards will stop their rifles so tell Trillian to shoot the weapons. As they begin to disappear you make a break for the ship but, just as you make it, everything goes dark again.



H-E-L-P

Violet Townsend has written asking for help with an adventure that I haven't seen yet - *General Zero*. She has obtained the coded letter from the bank deposit box but is now stuck. Can anyone help her to:

- Decode the letter?
- Progress further in the game?

Violet is also in difficulties with a variety of games that I cannot help her with as I have lost the file with the solutions in. Can anyone come to her aid with the following?

- In *Castle of Eagles* she has found the dropped equipment, a German uniform and the dinghy but now needs a means of propelling herself across the river.
- In *Top Secret* she cannot pass the guard dogs at the tunnel exit or obtain cooperation from the farmer who will not trade the old coat for the dead rat or watch, which is all she has to offer.
- *Winter Wonderland* is treating her more kindly in that she has scored 75 per cent. She has man-

aged to obtain the plane-building kit, the manual, the glue, the scissors and a martini, but still cannot find the magic formula to assemble the kit.

- *Apache Gold* is also causing Violet some hassle. She is travelling between the Indian camp and Jacksonville, and has even climbed the lodge and found the friendly eagle. However she has not managed to progress beyond taking manure to the plant to make it grow.

Stargess is causing Colin Tinsley some frustration. Does anyone know the answers to the following?

- How do you make the necessary repairs?
- How do you get the red rod from the nest?
- How do you escape from the green antlock with the violet rod?
- What is the maintenance mouse after?

Colossal capers

Colossal Adventure - A serialised solution by *Glyn White*

Get the sandwiches from the picnic area and leave them in the building. Take the keys and unlock the grate. Return to the building and drop them. Get the lamp, go back to the grate and go down. Light the lamp when it gets dark.

Get the cage but leave the rod for the time being. Capture the bird and find the snake. Throwing the bird at the snake will drive it away but you should retrieve the bird once this is done.



By now you should have an axe, or have been killed by a dwarf. Go to Y3 and wait until you hear someone say

plugh. If you now say if you will be returned to the building, and you should leave the cage and bird there. Say XYEDY to get back to the silver room.

Get the rod, and at the east end of the hall of mists wave it to create a crossable bridge. Take the diamonds and rod, and plugh back to the building. In turn, get the silver bars from the N5 passage South of Y3; get a ruglet from the low area South of the hall of mists, and the jewels from the cave south of the hall of the mountain kings. Take them to the building.

Find the dragon, attack it and get the rug. Visit the reservoir noting the route and the mirror. Wave - just to be polite. Take the rug to the building and return with the bottle and keys. Water the seedling in the two-pit room with water from the clean pit. Repeat for a fully grown plant.

Fill the bottle with oil from the pit of oil (found east of the plant) and go down into the pit to the base of the plant. Climb up it. Oil and unlock the rusty gate. Leave the keys with the golden eggs, and take the trident. Return back down the plant and leave the bottle in the icy water (flows from the clean pit). Go to the room of shells.

Open the clam with the trident, and get the pearl when it stops rattling. Go to the ante room, drop the trident and

SOUND OFF

If you have anything to say that you feel other adventure gamers would like to hear, write in for inclusion in this section. I will print the most interesting letters and will only edit them in terms of length.

Peter Howard writes:
I recently bought *Book of the Dead* for my CPC464. Although an experienced adventure player, I could not progress and sent an SAE to CRL asking for a hint sheet. I have received no reply.

Someone has told me that the game is coming as a portion of the first part had not been included when the game was converted. He

had played the adventure on another computer and was able to specify the missing items needed to complete it.

I have returned the tape to CRL with a note of explanation. For the benefit of players who have the adventure I think it would be a kindness to publish this letter.

■ I contacted Adrian Turner at CRL who told me that he knows of no problems with the CPC version of *Book of the Dead*, although it contains some very hard parts. He has sent me the hint sheet, and I'll pass on a copy to anyone who sends me an SAE.

HALL OF FARE

pearl, and take the Splitmaker News. Save the game now as you are going to do something tricky. Go to the 3rd level and drop the paper (to score 5 points) and return to the ante room by repeatedly going South. The number of moves needed to do this is randomized but only move South, do not perform any other actions.

Once back, get the trident and pearl and leave them in the building. Get the sandwiches, Plugh, and drop them. Flower, and drop everything. Get the emerald and go West. Drop the emerald and get the axe and lamp. Travel NE to the dark room and take the pyramid, return to the plover room, and plover and plugh to get back to the building. Drop the pyramid.

Use plugh to return to the caves, take the sandwiches and, collecting the keys on the way, go to the large low room north of the giant's gate.

Leave the keys and sandwiches here while you go SE to the oriental room. Get the vase and pillow from the salt



room (you can go via the Swiss cheese room). Return to the building and drop the pillow and then the vase. The vase will break if dropped on to anything else.

FEEDBACK

Vicki Danney's problems with Castle Blackstar were related in the April issue of *Composting with the Amstruc CPC* and have prompted several of you to leap to the rescue. The most comprehensive answer was from E. Body who writes:

● The ring:

Go up to the Duke's bedroom. Pass the bottle with you, see friend, look, light the lamp, in, down (to the inlet), extinguish the lamp, sail the boat, North to the island. Take the dynamite, open the bottle, pour the liquid on to the dynamite, NW, SW, W to the bank of the lake. Light the lamp, empty the boat, N, up, out (to the mirror room), take the ring (leaving the black room), and return to the lake bank. Wear the ring from now on. Get the staff from the oily cave, sail to the cave, then go out.

● The sword:

From the fork in the damp passage go to the dual room then up, down twice, N, up, in, N, push the throne, take the crown and seep-

tro. Down, W to a dead end, explode the dynamite in the lake, return to the dual room via the junction. If you take the gin-ginweed, you can diver and deal with the hydras in the small pit.

Go back to the fork in the damp passage, then on to the archway. Wear the crown (ensuring that the sceptre is carried), go to the roofball, look regal and take the sword.

● The golden:

Once the iron bar has cooled take it and lorrying the flour, go to the wall bottom. Light lamp, N, E (to the crevice cave), drop the bar, go back to the fork in the damp passage, SE, down to the tall room. Have you secured the diamond by pushing the stone in the long room and pressing the button at the damp passage doorway? SE to the glossy corridor, W, throw flour SW not already done! Go to the south end of the split room (where the bar has fallen), get the bar, N, drop the bar, S (to the south end of the split room), take the goblet, N, N, E.

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Venom

Mastertronic £1.99 (tape) Joystick or keyboard

TAKING the part of Bilka, a friend of the ruler of Armosia, you have accepted the task of ridding the land of the Evil One - Trakka - and his forces, who inhabit the local mines.

Many perils await you on your quest, a fact which becomes clearer as you explore the various caverns. Only with a little wisdom - and perhaps luck - will you survive.

Venom is one of those inexpensive adventures which you either like or you don't. The storyline, as you can see, is rather bland, but sometimes I felt that inside is a better game trying to get out.

The commands are obvious from a list of words on the right of the display, which brings the level of interaction right from the start.

There are quite a few locations to explore, some of which include smart graphics. Below the area where the pictures are displayed is a description of the location you're in.

Other sections are devoted to the results



of commands, your inventories, and the skills available. The text here is constantly scrolling, and sometimes you have to be quick to catch its drift.

When there are no graphics, part of the history of the land is displayed using hints to help you on your way.

Occasionally you find creatures to fight. No inventory-oriented sprites here, but it is

still nice to see such an option included. Another interesting feature is that it is possible to move a cursor over the words in the location description and select the examine option. Often this leads to further information on the subject you are investigating.

You can talk to the various characters - although the vocabulary is not extensive - and some of the problems are clever. But none of the game is highly original.

Worth a try to start cheering about them, but a worthwhile adventure for beginners and experts alike. At £1.99 Venom is excellent value.

Simon Harrington

Presentation 70%

Well shown only by fast scrolling text. Not designed pictures, but not many of them.

Atmosphere 85%

Easy to get into, but difficult to succeed.

Frustration factor 80%

Can occasionally get frustrating.

Value for money 70%

Budget price for a budget game.

Overall 70%

A fast-moving text adventure.

Football Frenzy

Alternative Software £1.99 (tape)

If someone had told me that it was possible to write an entertaining adventure about football I would not have believed them. In the event, they would have had the last laugh for not only is Football Frenzy about a football team, it is also very enjoyable.

As the manager of Greenwich Rangers you have opened your team to a place in the Cup Final. The big match and your team's dream of fame and glory is now only three days away, and everything possible has been done to ensure that your players are fit and ready for the match.

So what could go wrong? As it happens, everything! It seems that in your quest for glory you have neglected to pay several bills, and now your creditors are threatening you with bankruptcy.

You have until the start of the match to satisfy them and so keep the club solvent, starting the game in your office, the first thing you are likely to notice is that your momentous options are very limited.

Doubleless you, like me, will spend some considerable time trying to move East to no avail. As far as I can ascertain this is a bug in the program. To progress you must go West.

Having done this you are free to explore the club and its grounds before returning out into the town and its environs.

I have to confess that I have yet to pro-

gress far beyond this point. Much of the reason for this, I suspect, is that the program does not respond very favourably to your input and I have lost count of the things I have been told 'You can't do that'.

There are a variety of other ways to meet, but I have yet to find a successful conversation with any of them. The list of verbs included in the instructions shows that

there are a varied selection of problems to be faced, and I am forced to conclude that the person is very strict with the commands; it will allow you to use

Talking of instructions, these consist only of the intro, and fail to give an indication of the game's purpose. It is only by implication during the course of play that your objective becomes obvious.

Overall, a novel approach that appears to have been let down by errors which should have been corrected before release, and by what seems to be an unfriendly parser.

Dennis

Contact: Alternative Software, Suite 3-6, Balmbygate, Penrith, Cumbria, CA10 2JY. Tel: 0877-267777.

Presentation 45%

Some indication of the subject of the game would have been welcome.

Atmosphere 65%

Scored well for its unusual setting.

Frustration factor 36%

The lack of coherent responses is its most frustrating aspect.

Value for money 50%

At the price, you can't really argue.

Overall 49%

I would be interested to see the kind of input necessary to overcome the problems.



CPC GALLERY

THIS is the page where you can show off your artistic talents and win up to £18.

Pictures must be loadable from Basic and you should include a note stating the title and the package used to create them. Don't forget an S&A if you want your entry returned.

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This is the loading screen for an adventure David is writing.



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Mad Balls - E. Skudskelton
Package: Pixel Picture Systems' Image System

I HAVE had problems with large programs on my Amstrad CPC464 and also drive.

When I save a program as Basic it reloads very rapidly. However, if it is saved as Ascii the reload is very slow. If I load the same file into the Protext word processor it is quite fast. Is there a way to load Ascii programs quickly as these are more economical with memory?

I have written several long programs which I have divided into several sections. The first part asks a few questions and selects the relevant module. On loading each new part all the variables are lost.

I would like to be able to run RUN"file".GOTO 200, but of course the GOTO 200 is lost as the new program loads. Is it possible to retain variables from one program to the next?

Each part has 26 of setting-up subroutines which are exactly the same and are therefore repeated 10 times. This wasteful method is annoying, but I have found no other way.

MERGE does not work with the disc, though it's OK with tape. Is it possible to load a small program, delete the later part, merge a second program, and so on?

— T. Gray, Billingham.

● A Basic program in memory is not stored as it appears on the screen. It is

Slow loading with Ascii

tokenised, which means that it is made smaller by substituting short code numbers for the commands.

When you save a program as Basic, it is saved exactly as it is in memory. If, however, you specify the Ascii save option, it is expanded into the text form you see when you list it.

This means that an Ascii file on tape or disc is larger than its Basic equivalent.

When the program is reloaded, the Basic version loads straight in without any alterations being made. This is also true when you load an Ascii file into a word processor.

If you load a Basic program saved as Ascii back into Basic, it has to be re-tokenised, and this is why it takes longer than the other two cases.

There is no way round this. Once loaded, there is no difference in length between a program saved as Ascii or as Basic.

You can use RUN"filename".200 but that won't preserve your variables or subroutines. The only way is to use CHAIN MERGE"file-

name" or CHAIN MERGE"filename".

There is a bug in the CPC464 which causes difficulties when merging programs saved on disc as Basic. They must be saved as Ascii.

All variables will be retained, and lines that don't start a number with the one being loaded will not be wiped.

Wide open spaces

I AM putting my finger to my eye in order to bring to your notice a failing in the printing of your otherwise excellent magazine.

I refer to the lack of positive indication of the number of spaces left for in listings, and this is especially difficult where more than one space is required.

This is not critical in some cases, as spaces may only be there for appearance, but sometimes the correct number is essential.

Why not use an unusual

character to indicate spaces, such as an empty box? Also, can you help an old guy out by telling me what modifications need to be added to June 1987's Cartipods game to allow it to run with a joystick? — David Mitchell, Clacton-on-Sea.

● It's a fair point, and we'll seriously consider it if a large body of readers wants it. What do you think?

The problem of some characters being narrower than others is restricted to a few punctuation marks such as quote, apostrophe and exclamation mark. Most characters are in fact the same width, allowing you to match the line with the one above or below.

Another way is to trace the following characters (we'll waive copyright on them) which you can use to measure the number of spaces on the page.

```
XXXXXXXXXXXXXXXXXXXX
```

Cartipods is quite easy to modify to work with a joystick. In lines 340-370 change the numbers in the MAXLY commands from 71,83,89,95 to 74,75,73,72 respectively. In line 430 alter MAXE(YA0) to MAXE(Y06). You will still have to press the spacebar to start the game, but from then on you can use the joystick.

Out of date Basics

HAVING recently become the owner of a CPC464 I found the Amstrad never something to be desired for the beginner. I borrowed a copy of the National Station-Station College 26 Hours Basic

Alternative disc drives

I DECIDED to build the second disc drive project described in your April and May issues. It's a great idea, but I'm having difficulty in obtaining the drive mechanism — Matrox tells me that it no longer supplies it. Do you know where else they can be bought? — Brian Grimes, Clacton.

● Matrox was supplying the drive at the time the arti-

cle was written, and was still advertising it when the series reached publication, so the information was given in good faith.

Fortunately 3in drives can be obtained from an alternative supplier, J & N Bull Electrical of Hove (0373 202500/334444).

At the time of writing J & N Bull tells me that it has a number of equivalent Matsushita EMC-101 drives in

stock, and is expecting a delivery of the original Hitachi soon.

An error has come to light in Figure 1 of the second instalment of the project. The labels to output of 2612 and to output of 7695 were swapped over. If you connected the drive without first checking the voltages as suggested in the article, you could damage the drive's circuit.

4 From Page 47

and found I could follow it better.

I then bought my own copy of Joe Pollock's series of articles on constructing a second-disk drive. However, I have a query regarding the necessity for a separate power supply.

I have a CPC464 with DD-1 and I wonder, since only one drive can operate at any one time, why the disc drive power supply should overload if I took my 1 $\frac{1}{2}$ and 5 $\frac{1}{4}$ supplies from there?

■ The copy of the reply you enclosed with your letter listed the mirrors supported, and this list is several years out of date. Most of the computers on it are defunct.

We contacted NEC with a suggested list of suitable modern mirrors, and it told us that it is taking steps to rectify the situation. In fact a new edition for IBM compatibles such as the Amstrad PCs is due for release this summer. Hopefully it will be followed with a version which includes the CPC.

We'll keep you updated with any developments.

Wire we waiting?

RECENTLY I bought a Pace Nightingale modem to go with my Comstar AS232 interface. I got the modem from Dick Electronics, and when it arrived I found that the modem interface lead would not fit.

I looked in the CP/M catalogue and found the correct lead at £3, and a cheque was duly sent off. After months of waiting and two letters I got the reply that the item was out of stock and will be sent ASAP. I am still waiting.

Having spent £150 on two boxes of electronics which are gathering dust I want a lead so they can be put to work. Can you help? — Mark W. Webster, Totterden.

■ You should be able to get the cable from Pace, who

The economics of power

I HAVE been very interested in Joe Pollock's series of articles on constructing a second-disk drive. However, I have a query regarding the necessity for a separate power supply.

I have a CPC464 with DD-1 and I wonder, since only one drive can operate at any one time, why the disc drive power supply should overload if I took my 1 $\frac{1}{2}$ and 5 $\frac{1}{4}$ supplies from there?

This query is not simply to reduce the cost still further, but more a question of neatness and convenience. — M.H. Dunlop, Romford.

■ It is not true that only one drive can operate at once. The electronics in both drives are simultaneously powered up, and whenever

one drive spins the other does too.

The only things that don't operate together are the stepper motors to position the drive heads.

It could well be that there is enough spare capacity in the DD's supply to power the second drive, and it is true that a number of readers have tapped into the power lines of their CPC464 512Bs to avoid using a separate supply.

However, this may have a detrimental effect on the lifespan of certain components because they are being driven harder than they were designed to be.

Also, in the case of the CPC320 if you have a number of peripherals attached to the expansion port — particularly a serial

interface, speech synthesiser or sound amplifier — you may find the overall power drain is too great and the computer will not power up.

Recent letters about blowing fuses indicate that not all CPCs have much tolerance. A further point is that to take the power from the DD would involve internal modifications that would invalidate the warranty.

So we cannot advise readers to take this course of action if you do, it is entirely at your own risk. You may get away with it, you may not. For the sake of a few pounds it hardly seems worth the risk.

As for readers, you can fit a long lead so that the power supply fits well out of the way.

manufactures the interface and modem, and supplies the correct lead if you buy the two direct. The address will be on the documentation accompanying your equipment.

Alternatively you could buy some cable and plugs and make the lead yourself as there is a wiring diagram in the Comstar manual. You will need three steady hands and a small soldering iron, as the terminals are quite small and close together.

How much CP/M Plus would cost and they inform that it is only increased for use on the CPC6128 as a system effect. I would like to know if it is possible to buy CP/M Plus direct from Digital Research? — S. Roberts, Havant.

■ CP/M Plus is specially configured for each machine it runs on, and this customisation is usually done by the licensee — in this case Amstrad. Therefore Digital Research would not be able to sell you a working version for the CPC.

CP/M Plus is available from Amstrad's parts distributor, CPC Press (0772 555034).

Buying CP/M Plus

WITH regard to your reply to Roger Wilson's letter concerning upgrading a CPC464 to CPC6128 specifications in the January edition, you said that the only way to get half of CP/M Plus was from Amstrad.

I wrote to Amstrad asking

how much CP/M Plus would cost and they inform that it is only increased for use on the CPC6128 as a system effect. I would like to know if it is possible to buy CP/M Plus direct from Digital Research? — S. Roberts, Havant.

Having difficulty getting the game letters to work. Well, I can assure them that such problems are due to typing errors.

I have typed in all your games since June 1987 and they all went perfectly. The latest one, Cube Wars, is a tantalising teaser.

As you say, the June 1987 issue containing the checksum utility is worth obtaining, and it saves a lot of sweat. I am as thick as a plank when it comes to computing in basic, but I am happy with the games I type in. — W.J. Stubbs, Redcar.

■ Believe it or not, this letter is genuine and unaltered. The editor did not make it up — honest! Seriously, as Mr. Stubbs says, the key to correctly copied letters is the checksum utility in the June 1987 issue.

We can't send photocopies of it, you'll have to use the mail order form. When stocks of that issue are exhausted, we'll publish the utility again.

Satisfied customer

I HAVE noticed in recent issues that some readers are

Text dump bugged

On the March issue there was a text dump program on the M-Liners page. It looks very useful, but I can't get it to work even though I've definitely typed it in correctly. Is there an error in the listing? — Matthew Hobbs, Hillingdon.

■ Yes, unfortunately there is a bug. The program supplied by the author was correct, but somehow an earlier bugged version also on his type was published in error. The cure is simple — change the 2Cs to 2Bs in lines 19 and 208.

The assembly listing also had a minor glitch. The semicolon in the penultimate line should be a colon. Our apologies to Angus Lear and everybody who typed the program in.

£10 Prize letter

Not-so-live wire

In your April issue you published my letter concerning a remanent on/off switch. Frankly, you made a mess of it.

In my letter I told you to cut wire 24 (coming from the right hand side). I wrote very well that the 5V supply is on pin 27 of the expansion port.

In the published letter you confused the pin number, and told people to cut wire 27. The wire to cut is 24.

By the way, I have also got a neat button (double) type between wire 2 and wire 10 — again coming from the right hand side.

I have a CPC6128 and Britannia Super Romplus fitted with new core. This modified setup has worked for me for four months,

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and in this period I have not had to remove the remanent core.

In your comment on my letter you said that peripherals behind the keyboard are switched off too. This is correct, but if a program will not run with the remanent attached and you have to physically remove it, the peripherals won't work anyway. — John Stoffersen, Copenhagen.

■ Yes, in an attempt to condense your letter a minor hack was made — sorry. Fortunately no harm is done by putting the switch in the wrong line, and it's easy enough to repair the wire and get the switch in the correct place.

Quite a few disc-based programs will run with the disc rom active, but not others. The comment about peripherals being switched off was intended as a reminder for CPC464 owners whose DIN interface — which has no through connector — is usually plugged in behind everything else. Your method would not help readers in this situation.

Good reception?

I AM writing to enquire if you or any of your readers can assist me. I have a CPC6128 and would like to

buy a software package which would be suitable for a hotel front office reservation system. The hotel is small — 20 bedrooms — and the package would be used for the booking of receptionists. — Brian Wilson, Rochester.

■ We haven't heard of anything along these lines. For a software house to invest in writing a program it has to be sure of getting a good return, which makes a specialised requirement like this an unlikely candidate for computerisation on a home more like a CPC6128, though no doubt it is capable of the task.

A software house contemplating such a project is more likely to go for a business machine such as an IBM compatible, or the Amstrad PCW. However, if anybody knows differently, please let us know.

Penpals required

I WOULD like some penpals with Amstrad CPC664 computers. I am 15 and will reply to anyone who is prepared to write a long and interesting letter about themselves and what they've been up to, and perhaps teach me a little Basic.

Could Jim Hough from Glasgow also write to me please as I have lost his new

On-line printer check

IN the March issue M.J. Rowell's letter detailed how a program could detect if the printer was on or off line.

A far simpler method is to test the port directly with INP, for example:

```
IF INP(128)=0 THEN GOTO 10
```

Obviously the test returns 00 when the printer is on line. For simplicity, I'm sure you will agree. — J. Fearn, Bristol.

■ Yes, we do agree. We were aware that there was another way of doing it along these lines, but couldn't remember what! Thanks for letting us know.

Another reader wrote in with the same point and asked why you would want to test whether the printer was on line anyway, as the CPC won't do anything if it isn't.

The answer is: if you were not experienced with computers and were using a piece of software which output to the printer, wouldn't it be far nicer to be informed that for some reason the printer was not on line, rather than sitting there wondering why everything had gone quiet? It's known as user friendliness.

address? — Christine Smith, 14 St. David's Place, Goodwick, Dyfed SA64 0BA.

I AM 17 years old with an Amstrad CPC664 and I would like to swap hints and tips with other Amstrad owners. — James Wilson, 2 Irwin Ave., Eastcote Estate, Watford WF1 4ZZ.

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Is it that easy to use? Several leading reviewers have

already sung its praises on this very point.

It's possibly the best advertisement for Mini Office II is that it comes from the same stable that produced the original Mini Office package back in 1984.

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HEADS FOR THE BILLS

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If you would like your letters to look nice, but can't afford headed stationery, Letter Head Designer is what you need. It is an IBM-driven retail screen editor which allows you to arrange text in different sizes and styles, embellish it with lines and boxes, and print it out on your dot matrix printer. The paper can then be reused for printing correspondence.

Movement in Letter Head Designer is accomplished with the arrow keys or joystick, and selections are made with Copy or the fire button. For simplicity I'll refer to keyboard operation.

To select a function, move the icon cursor over the one you want, and that function will remain in operation until you select another. Going from top left to bottom right, the icons (shown in Figure 1) are:

Move cursor allows you to move the cursor to a specified set of coordinates. When prompted, type in X and Y values in the form 208,308 and the cursor will be sent to this position. The values must be in the editing area or they will be ignored.

Draw enables you to move the cursor around with the arrow keys. If you press the spacebar at the same time, a trail of ink is left, while Delete draws in ink. You can also plot individual points with this function. Copy returns you to the panel.

Rubber erases a rectangular area. It works by letting you first move the cursor to one corner of the block - fixed with Copy - after which the outline of a box may be dragged around. When it surrounds the area to be wiped, press Copy again.

Draw Line does just that. Move to where you want the line to start and press Copy. You can then drag a line from this point wherever you wish. Press Copy to fix the position.

Draw Box works in the same way as Rubber except that when you fix the box, either an outline or a solid rectangle will appear, depending on the setting of the Solid icon.

Text allows characters in the current text to be placed with pixel accuracy. First you are prompted to enter the text in the bottom-right window. You can have up to 255 characters, but only 80 will fit in the window. Press Return/Enter, and a box will appear on screen. Drag it to where you want the text, and press Copy to write it.

Camera does an area copy. It works in a similar way to Draw Box, but when you press Copy to fix the size it remembers the position. You can then move the box around, and pressing Copy again will duplicate it at the new position the area covered by the box when you fixed its size.

Note that if the second position

overlaps the first, the area may corrupt itself, depending on the direction of the move. However, this can be used to good effect. As this function can take some time, a beep will sound when it is complete.

Save Design asks for a filename, and the screen will be saved to tape/disc. Conversely, **Load Design** reloads saved screens.

Print Design will send the letter head to the printer. Escape is temporarily disabled, as the function calls a machine code screen dump.

Select Font offers five choices: Normal, bold, italic, left, and double height. Pressing Copy while over this icon causes them to be displayed in turn.

Write Mode can be used to reverse colours. When the word OVER is displayed, text, lines and boxes will be drawn as expected. Pressing Copy on this icon causes the word XOR to appear. Now lines, boxes and text will be drawn in the opposite colour to the background.

An instance where this would be useful is if you have a design but would like the colours reversed. Select XOR mode, move to the top left of the letter head, and draw a solid box over it - see below for solid boxes. All background colours will now be foreground, and vice versa.

Turn on Page 68

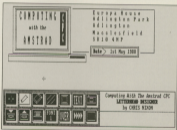


Figure 1: Letter Head Designer's editing screen

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Screenshot from *Lords of Time*



Screenshot from *Red Moon*



Screenshot from *The Price of Magic*

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