



In the chair with...

ROLAND PERRY

Amstrad founder Alan Sugar was said to have sketched his idea for the CPC on a napkin during a flight, but it was left to technical manager Roland Perry to implement the electronic wizardry that made the machine tick. David Crookes catches up with him...

WHEN YOU THINK of Amstrad, Lord Alan Sugar's name immediately springs to mind. In 1984, he unveiled the CPC 464 to receptive critics, hoping to have produced a strong competitor to the Spectrum and Commodore 64. Accompanying the machine, however, was a series of games based around a character called Roland. This tiny personality was named after Amstrad's group technical manager, Roland Perry. But Perry's contribution to the Amstrad story went far deeper. For it was he who designed the CPC's electronics; the man who made the computer what it was...

*** RETRO GAMER:** People obviously know Lord Alan Sugar, but your name is integral to the CPC in more ways than one, isn't it?

ROLAND PERRY: Well, I was involved in the technical design of the computers...

RG: But you also had games named after you, the character of Roland, and the CPC's nickname of Arnold was an anagram of your first name, wasn't it?

RP: Strangely enough, I don't think it was. There was a degree of secrecy in the early days of producing the CPC. We felt that if people knew Amstrad was producing a games computer, we may end up with a kind of situation that would be difficult to

handle with lots of people turning up and asking you when it's going to be in the shops, and what's it going to be like and all the rest of it. So all the absolutely new products were designed pretty much in secrecy. When I was trying to get contractors and whatever on board, it was always felt it was useful to keep a level of secrecy until they were signed. I wasn't allowed to tell people who the client was so we had to come up with a codename. And that was Arnold.

RG: So it wasn't at all to do with rearranging the letters of your first name then?

RP: It was more an allusion to Arnold Weinstock, who at the time was running GEC [a British engineering giant]. So there was this kind of forced trail leading back to parts of the GEC empire because people knew it was a UK-based electronics company. Even in those days there weren't that many to choose from, so it was just a bit of a smokescreen.

RG: Did the contractors not ask many questions?

RP: The individuals I was talking to knew me personally because I was at university with some of them and things like that, but they didn't know who my client was.

RG: You didn't get anyone from GEC coming on and saying, 'Hang

on, everyone thinks we're making a computer here'?

RP: Well we didn't, but one very strange thing happened. Somewhere along the line, *Reader's Digest* got hold of it and published in an article that Amstrad was a subsidiary of GEC, which was very odd. This is after the CPC had all come out and they were publishing either a history of GEC, Amstrad or the electronics industry. But I was completely confused. And that kind of mistake lasted for decades. People would go back and quote that as a kind of authoritative source. It was very strange. These kind of urban myths develop, but there you go.

RG: Did Lord Alan ever see that?

RP: He saw everything, really. I'm sure he must have done.

RG: How did Alan Sugar approach the project? Did he say to you

'Look, we want this machine. It needs to have the keyboard with an integrated cassette drive and one plug'?

RP: He was very much involved himself, yes. He was integral to the concept stage – the fact that the tape drive was included, the fact it has an extended keyboard, the shape of the box, the type of connectors on the back... it had a printer extension port and a CPU bus expansion port on it.

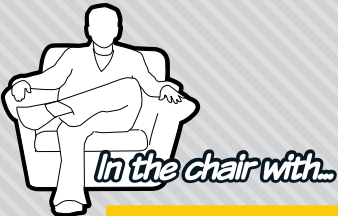




CPC 464 1984
CPC 664 1985
CPC 6128 1985
464 Plus 1990
6128 Plus 1990
GX4000 1990

ENRIGUI
TIMELINE

**"If you told us
[the CPC] was
going to be
spoken of 25
years later, we
wouldn't have
believed you"**



All that kind of stuff is what I call the concept; the fact the power supply was in the monitor and so on and so forth. Lord Sugar put that out to an initial designer who came up with a prototype that didn't work properly, so he transferred the project to ourselves.

RG: What was the CPC like when you first saw it?

RP: The physical design was completely unchanged from the moment we first set eyes on it to when it was in the shops, apart from minor details. All the keys on the keyboard of the first prototype were grey rather than those kind of primary coloured ones you got eventually, and also the plastic of the case was grey rather than the matt black. Apart from that it was absolutely the same – the same moulds and everything. That included inside it the footprint of the circuit board, the position and number of pins and so on of all the connectors. So that was all we had to work with and we basically designed the circuit board around that rather tightly defined footprint.

RG: So why were little quirks like the colours of the keys introduced?

RP: Well, that is another aspect of design. I mean, design is one of these words that has lots of different meanings. I used to get frustrated in later years when people said "What do you do?" and I said "Oh, I design Amstrad computers" and they used to say "Oh, why do you make them that horrid beige colour then?" I said "No, no, that's not the design that



FIVE TO PLAY

CPC 464



ALAN SUGAR SHOWED off the CPC 464 at Westminster School on 11 April 1984. Roland Perry had been drafted in to see the project reach fruition and the remit was clear: the machine had to be as simple as possible to set up and it had to contain all of the elements needed to get going out of the box. So the 464 came complete with either a colour or green screen monitor (at £200 or £300 respectively) and the keyboard integrated the computer and tape deck. The PSU was inside the monitor and the whole thing ran using just one plug. Although it was originally going to be based around a 6502 processor and have 32k of RAM, Z80 was used and the memory doubled. The keyboard had garish red, blue and green keys and it became a resounding success during its six-year life span.

CPC 664



AMSTRAD WAS KEEN to position its computer as a jack of all trades rather than as just a gaming machine, so it was quick to release a disk-based version of the 464. The CPC 664 still had 64k of RAM, but the colourful keys were banished for a more professional, if not chunky, appearance. The wealth of serious peripherals including a colour-matching Amstrad printer were also made available. Critics would later bemoan the use of a 3-inch disk drive. They held just 178k on each side and cost around £2. Within time, 3.5-inch disks became more popular. But of immediate concern was memory. Many felt 64k was just not enough for a serious computer.

CPC 6128



WITHIN A FEW months, Amstrad had announced plans to scrap the 664 and replace it with a better-looking 6128. This solved the memory problem as now users would make use of 128k. The 3-inch disk drive remained, however. As time went on, a number of games would make use of the extra features. *Sorcery+* was disk-only and reviewed well, but *Nigel Mansell's World Championship*, *Space Crusade*, *Supercars* and *Switchblade* made good use of the extra 64k. Adding music was common. Level 9's games (including *Gnome Ranger*, *Lancelot* and *Scapeghost*) did not contain graphics on a non-enhanced 464, but the 6128 showed off a host of pictures.

464/6128 PLUS



IN JUNE 1990, Amstrad announced in Paris (France had become a particularly successful market for the CPC) that the old range was being replaced by a brand spanking new Plus series. The design of the 464 and 6128 were radically overhauled. Out went the grey and in came white. The computers looked more like the Amiga. Curiously, the CPC name was banished too. But there was a lot of excitement – particularly among Amstrad owners at the introduction of a cartridge port. This soon faded when it became clear only cartridge games could make use of it (although a workaround was soon devised) particularly given the expense of the carts.

GX4000



AND SO CAME the GX4000. Launched at the same time as the Plus range and benefiting from the same £20 million of marketing budget, the GX4000 was a keyboardless Plus (a console, then). It was an 8-bit machine that aimed to take on Nintendo and Sega. There was smooth hardware scrolling, better sound, and up to 16 colours could be used from a palette of 4,096. There were also 16 hardware sprites, each 16 by 16 pixels. The console came with *Burnin' Rubber* and a game paddle. But the expensive cartridges, lack of games and lots of ports of titles that existed on unexpanded CPC machines helped to dash Amstrad's hopes. The CPC range had come to an end.

I did. That's production engineering and artistic design. My design is the electronics and the software and things that go inside them. The concept – so I'm using that as a kind of synonym for design – was that it should look good and therefore have a proper keyboard, a proper numeric pad, and a built-in cassette, and that's what Amstrad had already achieved by the time we saw the project.

RG: The CPC was seen as a serious type of computer, compared to say the Spectrum or the Commodore 64...

RP: I think the Commodore 64 was the closest machine in its class at the time and was the reason why, for example, we went for a 64k of memory rather than 32 or 48, which some of the machines at the time had.

RG: Obviously, Lord Sugar wouldn't have been completely au fait with the electronics side of things, so were you given free reign on what you actually put into the machine?

RP: Well, we had some rules. We also effectively had a budget for the number of components that we could use, and one of the rules was it had to have a 6502 processor in it. That was a bit unfortunate because the hardware and software designers that I found, who were streets ahead of any others that I found, both said, "Well, we'll do this job but only if you can change it to a Z80." So we had to go back and say, "Is it all right if we change the processor to a Z80? And the reason we're doing it is because the designer is more familiar with it."

There's just as many particularly indigenous UK games been written for the Z80 and the Spectrum as there has 6502 and the Apple/Commodore." And so he says, "All right then, change that." And then it was simply a case of building the design around 64k of memory and a Z80 processor. It had to have sound, obviously. And for that class of computer, it's relatively straightforward what electronics it needs to have in it. It needs to have a CRT controller,

it needs to have a joystick parallel port interface chip, it has to have a memory controller, it has to have a keyboard controller, and they're all fairly well-known design elements. We ended up putting quite a lot of them into a custom chip rather than having separate components. I've got a picture framed on my wall of the circuit board. It's not a very densely packed circuit board.

RG: So was the idea to beat the 64, the C64 and the Spectrum, or to be on a par with it?

RP: I think we were trying to achieve something that was pretty equivalent really in terms of features and processing power, because again they've all effectively got the same CPU in it. The fact that a Z80 has got a 4mb processor and 6502 has a 1mb processor is a bit of an illusion, because the Z80 just divided that down for most purposes. So you've got the same amount of horsepower and you've got the same amount of

“I've got a picture framed on my wall of the circuit board”

memory; a printer port is a printer port and a keyboard is a keyboard. There's a limited amount you can do to change it. But the things we did put some effort into were arranging for it to have both a high-resolution screen mode and a multicolour screen mode. We had 27 colours rather than 16, which turned out to be trivially easy to do. Some designs coming out then only had eight colours, which is no good at all.

RG: One of the big differences between computers now and back then was the prompt you got when you turned the machine on. The CPC just declared "Ready". And there was no help for the first-timer at all...

RP: There wasn't, but the point was that people had to be able to switch the machine on and for it to say something on the screen and not be just a cursor blinking away. It had to say something recognisable and encouraging, something warm on the screen. It had to have a cursor that moved left and right, and up and down

» Despite lending his name to several games, Roland doesn't play many games himself.



when you pressed those cursor keys, which again was unusual for a machine of that time because most of them would only let you go left and right and press enter. But why would you have cursor keys on the keyboard if they didn't move the cursor around the screen?

RG: Did you design the machine for games?

RP: I think it was aimed at allowing people pretty much the same sort of range of capabilities as something like BBC Micro. In other words, you could do serious programming on it if you wanted to. You could dabble in programming – maybe play a tune, then wiggle some lines on the screen and flash some colours. Or a professional games writer could write a reasonable game that was as good as the games on any other machines around

at the time. It did just a bit of everything.

RG: But games were certainly important. It's why Amstrad launched Amsoft and looked for games to publish, isn't it?

RP: We were asked to have a complete range of games ready on day one. That was my job and some colleagues'. What we did was trawl around existing software houses for Spectrum and BBC Micro and whatever, and we said, "We've got this new product coming out. Would you like to convert your games to it?" because in those days people weren't writing games from scratch for the 464. They'd always be converting an existing game.

RG: Was it an easy task?

RP: We did have to convince developers. Some had been bitten in the past by other firms who had asked them into their offices to talk to them about their computers, convinced them that they really were going to make the machine and then nothing would come out the other end into the shops.

We knew that some developers had wasted their time with other firms and that when we arrived they would have heard it all ten times before from budding computer manufacturers. So we had to give them a pitch that we really were going to produce this and we really did need the games, and so on and so forth. It helped enormously that a well-established company was doing it and not a start-up.



RG: Did you hand out prototypes?

RP: Our first job when we designed the motherboard was to hand-build around about 40 prototypes, and then we gave one of these to each of the software writers so that they could write the software for it. This was something that nobody else had ever done before. They'd either just give people a paper specification to write to or they'd lend them the prototype for a couple of days or something. It was completely unheard of for somebody to turn up with one of these things under their arm and say 'There you go, you can keep it for a couple of months while you finish your game off.' The logistics of manufacturing and then distributing those prototypes was probably the biggest part of the project as far as I was concerned.

RG: Did you hand those to the companies that you felt would be the best developers?

RP: We had this kind of in-joke that the people negotiating the contracts with game designers would come into the office and they'd say, 'Oh, we've talked to another three of the top software houses in the UK today' because we'd get someone coming in and saying 'I'm the top software house in the UK' and you'd say 'Jolly good. There you go then. There's a machine and let us know what titles you're going to convert.' And then a different one would come in and say 'Oh, we're the top software house in the UK.' It was quite funny. I mean, they were all good companies. It's just that every one of them came along saying 'We're the top company.'

RG: So it was all done on a one-to-one basis?

RP: Well, another thing we did was hold a conference where we got the designers together and the software houses, and we hired a theatre on a Sunday. They all came down and we gave them a talk about the project and basically a training course on the features of the machine, which again was pretty much unheard of. Normally people would just be given a specification, told to go away and work it out for themselves, whereas we gave them all this information up front.

RG: You must have enjoyed some

gaming time during the making of the CPC, then. What was your favourite game at that time?

RP: In the period up to launch it was probably *Harrier Attack*. That was almost the first game that we had, I think.

RG: A year later, you launched another machine – the CPC 664. It had a disk drive, but the machine itself only lasted six months or so. Was it a mistake?

RP: We couldn't have jumped straight to the 6128 because that would have been too big a jump, but what happened was everyone badgered us to death and said

'Why can't you produce one with a disk drive in it and not a tape drive?' There had been an add-on disk drive right from the beginning of the 464, which again was rather unusual to have that available on day one. But people were saying they didn't want the tape drive and wanted the disk drive built in instead. So we started producing that, and we'd hardly started churning that one out when another whole set of people turned up and badgered us to death to use a 128k version. They were people who were more interested in using it for business applications and things like that. So we kind of went fairly rapidly from one with an added disk drive to one with an added disk drive and 128k of memory and CP/M and everything.

RG: Were they not asking you to do these things at the same time?

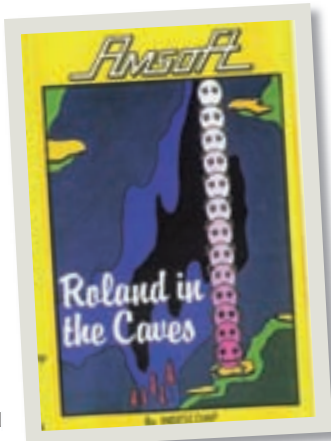
RP: No, there were two different pressure groups that lobbied us to do those two machines, and it was just a kind of coincidence really that one came out relatively soon after the other.

RG: The 6128 was really aimed at businesses, but you also made the decision to go with a 3-inch disk drive rather than a 3.5-inch disk drive. Would you have done the same with hindsight?

RP: The 3.5 inch disk drive didn't exist then. And people always ask questions like that. We couldn't use a disk drive that didn't exist! The 3.5-inch drive that did exist at the time – I mean we're talking about 1983, here – was a very strange animal that was inside very expensive professional test gear and things like that, and actually went round at a different speed depending on whether you had an inside or outside track. These were very strange and very expensive disk controllers that cost more than a 6128 just for the disk drive. It was a complete non-starter. We picked a drive that was available, was relatively low cost, was compatible with the IBM 5.24-inch floppy so it could use the same disk drive controller electronics and the same disk drive software, or firmware, or whatever you want to call it. It was kind of a plug-and-play operation, and that's the way we went. About two years later IBM brought out a PC with 3.5-inch drive in it, and it was only from that day onwards that the 3.5-inch drive gained any popularity at all in general purpose computers rather than specialist applications.

RG: So when you then later made the 6128 Plus, you really had to stick with the three-inch for backwards compatibility? Was there no temptation to switch at that point?

RP: Well, once you've got a drive in your equipment you might as well stick with it, and the 3.5-inch drive again was still very expensive in those days compared to the 3-inch drive. I don't think anybody would have thanked us for doubling the price of



“ [Lord Sugar] was in and out of my office several times a day. He's not a shy man... ”



» [CPC] Released 26 years ago, *Roland On The Run* is one of the lesser-known Roland games.

*NUMBER CRUNCHING

Roland went to the University of Cambridge between **1971** and 1974, and gained a Masters in Engineering and Management Studies

He began to tinker with computers in **1974**

Roland started work at Amstrad **10** years later

He designed the original CPC to have a **6502** processor. It was changed to the Z80

There was **1** nickname for the CPC – Arnold. It was an anagram of Roland (but that’s not necessarily the reason for its name)

A machine called the CPC **472** was sold in Spain. Roland didn’t work on this

His name was used for the **9** Roland games published by Amsoft

Roland also worked on the **2** Amstrad Plus computers and the GX4000 console in 1990

It was decided the machines would remain **8-bit** rather than **16-bit** for backward compatibility

Roland left Amstrad in **1990**



» [CPC] Amsoft had some surprisingly good games in its library. Sadly, *Bridge-It* wasn't one of them.

the equipment just to have another half-inch on the disk drive. It was also enormously helpful to the success of the PCW that people were able to move their CP/M software from the 6128 straight across to the PCW, maintaining that compatibility.

RG: The 464 and the 6128 were definitely popular machines. They did extremely well in France as well, didn't they?

RP: They sold well in Germany, France and Spain. A lot of that success was due to the fact that we did local keyboards. We did local language manuals and things like that, which were things that most manufacturers weren't doing at the time. We went that extra distance and localised everything for Germany, France, Spain and all the rest of it. With PCW we went on eventually to do about 15 or 20 different countries. It was quite a major production exercise to produce translations and create new keyboards and new character sets for the printer and all that sort of thing.



or not.

RG: We bet Lord Sugar was pleased...

RP: People used to say to me, "Does Alan Sugar ever pop down and see how you're getting on or let you know what he thinks about something?" I'd say, "Well, only about every five minutes." He was in and out of my office several times a day. He's not a shy man. He would tell you whether he thinks you're doing all right

RG: What was he like to work for?

RP: Very good, because you were never under any doubt what it was you were supposed to be doing. Basically, he's got this knack of asking you the only question you haven't got

an answer for. It's extremely irritating but keeps you on your toes.

RG: Is he decisive?

RP: If he decides he wants to do something then he'll go off and do it. There's no sort of coming back a couple of weeks later and saying "Oh, I've changed my mind" or "I think we ought to do it slightly differently," and the worst, which would be "No, that's not what I told you to do. I told you to do something slightly different," and these kinds of things used to plague other people I knew who worked in other organisations doing similar projects.

We were blessed with very, very clear instructions on what to do and when to do it by, and how much it was all going to cost, and so we just got on with it and did it.

RG: When Amstrad bought Sinclair, were you involved?

RP: Not especially, because there wasn't any re-engineering to do. We were designing electronics, we were designing writing firmware and ROMs and that sort of thing, and that was all already done for the Sinclair, so the only thing that really had to be done was just sticking it in a different-shaped box. That was a different department that designed the boxes and designed the monitors and things like that. We were basically the people who did the motherboard and the people who did the welcome tapes, and the manuals, and the software disks and all that sort of thing.

RG: One of the projects you were involved with was the 464 Plus, the 6128 plus and the GX400. Do you think you should have gone for 16-bit, though?

RP: I think the Amiga was around then, wasn't it? And a few other ones like that. You'd have to start from scratch with the design, to be perfectly honest. I don't think you could really take something like the 6128 and suddenly somehow make it into a 16-bit, so it would have been a complete ground-up design and we just didn't go in that direction because the console version of the 464 was basically the same electronics just with a cartridge support on it. We looked at early Nintendo machines around then. We looked at things like the Amiga, but the company chose to go more in the direction of PCW and variants on that, and the 1512 and variants on that rather than continuing to develop the games computer line in the end.

RG: Why did you prevent developers from producing games on tape and disk that could take advantage of the cartridge port? A technique to do this was eventually worked out...

RP: I think the issue with the cartridge port was probably to make it more difficult for people to make pirate copies of the software.

RG: So how did the GX4000 come about, then?

RP: A lot of companies were making consoles, so we thought we'd have a go. A lot of it's also customer-driven. If the high street shops are coming and saying make us a console then you say okay, give us an order and we will make you some. So it's not always driven from the designer end. It can be customer-driven as well. And by customer, I mean companies like Dixons and Currys etc.



RG: The GX4000 was a promising machine. The graphics were great and there were games like *Burnin' Rubber*. Why do you think it didn't quite do as well as Amstrad expected?

RP: I remember the *Burnin' Rubber* game. That was the one that was shipped with it, wasn't it? I remember one of my lads doing some of the work on kind of integrating that in with the console. At that stage I wasn't particularly aware of which machines then went on to sell well. I started to be decoupled from that end of the process, so I wouldn't be able to comment really on whether it exceeded or didn't meet any expectations on that front.

RG: Were you involved with the design of the GX4000, though, the internal architecture?

RP: Well, in as much as it was a contractor working for me that designed the add-on circuitry to move from the earlier designs to that design, yes.

RG: What were you aiming for with the GX4000 – were you putting the emphasis on graphical capabilities and sound?

RG: After the GX4000, Amstrad moved away from gaming...

RP: The PCW was important to us. There was also a tablet computer, a kind of an organised pocket organiser thing. The Notepad, it was called. It was very similar to the Sinclair Z88 thing, you know, just a keyboard with a little single-line LCD on it. Then we had a whole range of word processors and we did some IBM PC clones, so generally the focus of the work moved from 8-bit computers to 16-bit, but not game-playing machines.

RG: Was there a sense that the Plus range had kind of burnt Amstrad's fingers?

RP: No. I think you sit down, you have a strategy and you say, 'We're going to have a family of computers.' One family reaches effectively – you know, evolves as much as it possibly can and sells as well as it possibly can. If you're going to go on and do another family of computers

you've got to throw your heart and soul into it, and our heart and soul

was going in a different direction at that point. It was going into business computers.

RG: On a personal level, was there much difference between the



“Fundamentally, the CPC was a very neat design; it was easy to programme for”

RP: I think each time a machine sort of evolves what you're trying to do is put as many features in there as you sensibly can, given budgets. The budget is often the size of the custom chip that you can put in there. Over the years, custom chips get bigger and bigger. I mean, the custom chip inside the 464 has got just under 1,000 gates in it. Something like a Pentium processor has got several million gates.

Between those years, as each generation of new custom chip comes out, you just get more and more gates put in there. But you cannot buy a custom chip bigger than any of the manufacturers will make for you, so you have to treat that as a kind of a budget and say, 'Well, what can we put into the machine, given that amount of budget in the silicon?'

two anyway or was it for you just creating computers?

RP: It's kind of odd. I always regarded myself as kind of the user of the computers, you know? I was really designing a computer for me to use, and if I found it useful I just hoped everybody else found it just as useful. I'd go along to the people, the hardware or software engineers, and say, 'I've had this idea. Can we do this, that or the other, and add this extra feature into it? I think that would be really useful because I'd find that useful if this was my computer.' Most of the time they'd say, 'Yes, we can stick that in, no problem.'

So I just had to kind of imagine myself to be a games-playing person or a family who wanted a general purpose home computer, or a small business who wanted a word processor and imagine myself into that role. I'm just lucky, I suppose, in

that I like computers and I can relate to business computers and games computers equally.

RG: So when you look back...

RP: Sitting here, if I was still working for them I'd probably be making an iPad-type machine, but I'm not, so maybe I'll have to buy one off Apple, then!

RG: Do you still play games today?

RP: Not really. My son plays a lot of games. He's got a PS3 and he plays games on that, but I don't play much myself, really.

RG: When you look back at Amstrad's success... I mean, it was a successful machine, but people still always talk about the Spectrum and they talk about the Commodore 64, and the CPC always tends to come in as number three. Does that annoy you sometimes?

RP: I think it's because you're talking to different audiences. There's a sort of enthusiast market that seemed to go more for the quirky machines like the Spectrum and the Commodore 64. I think they found it interesting to work their way round all the various features and things to make it work the way they wanted it to, and of course they were there first. So I think the whole subculture of enthusiasm, which was something that was carried on perhaps longer than for the 464 results from that. The 464 was much more a computer for the man in the street rather than the enthusiast. So if you were hearing from an ordinary person who'd bought one in those days, you would probably remember the 464 more than the Spectrum and the Commodore.

RG: Are you surprised there's still interest in the CPC?

RP: I think we were surprised from about 1985, really. We signed it at the end of '83, introduced it in the middle of '84, and the fact it was still going a year later I think surprised us a bit. If you told us it was going to be spoken of 25 years later, we wouldn't have believed you.

RG: So, fond memories...?

RP: Yes, fundamentally the CPC was a very neat, elegant design. It was easy to programme for; there were no dreadful 'gotcha's' in it that you have to be careful of, so it was just a workhorse really. I loved working on it.



* YOU ASK THE QUESTIONS

We were inundated with questions for Roland Perry. He managed to answer a good selection of them...

■ **What on earth did you mean when you mentioned that the GX4000 was almost as powerful as the SNES?**

I've never used a SNES, so any comparison involving 'power' is a misunderstanding.

Quite likely; but I wasn't part of the team that chose the individual games – by then I'd moved on to developing the PCW.

■ **Were you disappointed that so many developers chose to do lazy ports of Spectrum games instead of using the machines strengths?**

If the result was as playable on a CPC as the Spectrum, then the extra opportunity afforded to CPC buyers was well worth it.

■ **Did you ever get out of those caves?**

In the game... not very often. It was almost the first game we had, but I spent more time playing *Harrier Attack*.

■ **Do you think that forcing gamers to have to pay the extra cost for a monitor when your main rivals didn't was a mistake?**

Quite the reverse; it allowed customers to have a 'complete system', which didn't involve fighting over the family TV.

Something that happens to this day in my home when the PS3 gets rolled out.



■ **Who is your favourite Doctor Who?**

The first one. I remember when the first episode was shown – long before VCRs or other ways to view again. I think they, very unusually, repeated the first episode a week later, for those people who missed it.

■ **If you're being honest, what percentage of Amsoft games were put out to make up the numbers and were substandard?**

All games had to pass a minimum standard, but beyond that it's inevitable that some would be better than others. That's what games review magazines are for.

■ **Were you involved in the takeover of Sinclair and what were your feelings on this?**

I helped to evaluate what it was we were buying from Sinclair, and which parts of that bundle could be usefully relaunched after some appropriate re-engineering. It helped keep the product alive; I think that without the deal the machines would probably have simply vanished from the scene.

■ **During the development of the machine, the processor was changed from a 6502 to a Z80. Do you think this was a good thing?**

It was essential because the 'new' design team had experience of Z80 hardware and software design (and not 6502), and therefore the project would not have been completed on time otherwise. Remember, we were trying to do a conventional year's work in about four months!

■ **Why wasn't the image of the Roland character consistent? Do you think Amsoft could have sold more if Roland had been an identifiable one like Miner Willy, Sonic or Mario?**

Most of them were conversions from other formats, and a multitude of different software houses. So those characters already existed. In hindsight I'm surprised many of them let us rename them to include the Roland brand. They must have thought it was a useful sales feature.

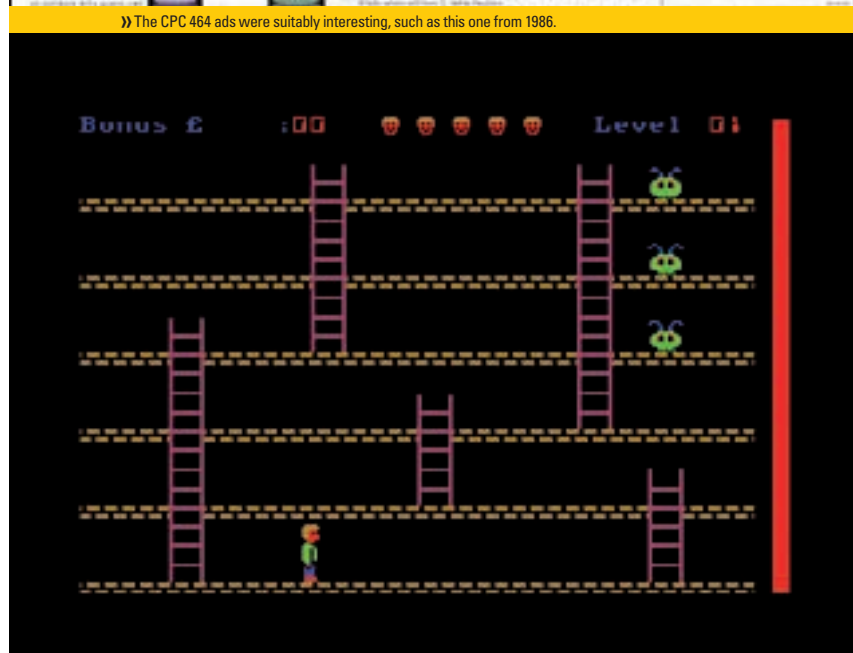
■ **Were there any games Amsoft turned down for any reason and refused to publish?**



» [CPC] *Striker In The Crypts Of Trogan* made good use of the Plus's extra colours.

With monitor, datacorder and £100 of software you can't lose. (Until mummy catches you.)

» The CPC 464 ads were suitably interesting, such as this one from 1986.



» [CPC] *Roland Goes Digging* received decent review scores back in 1984.