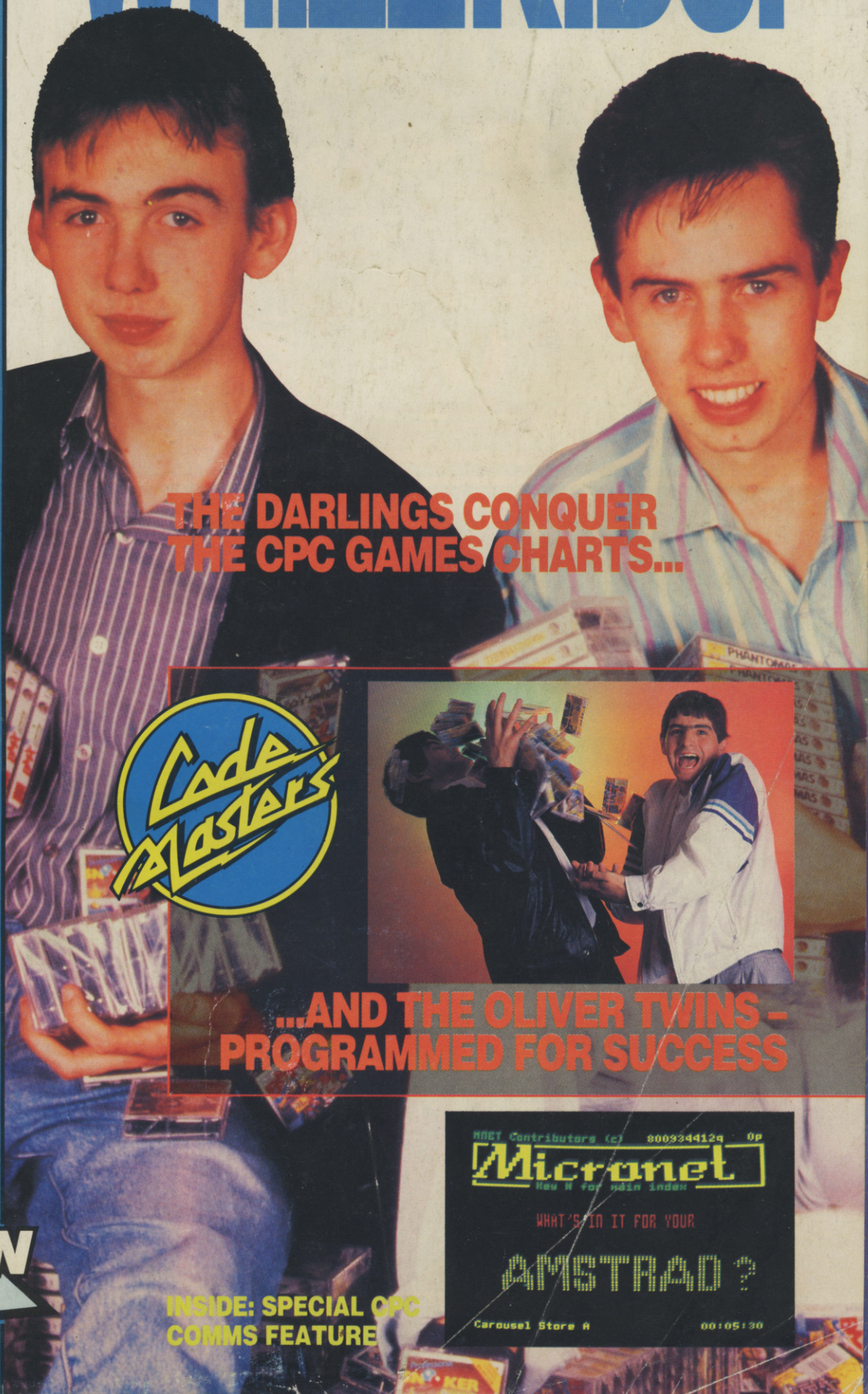


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WHIZZKIDS!

THE MOULD-BREAKING MAGAZINE FROM FUTURE PUBLISHING

AMSTRAD ACTION



**THE DARLINGS CONQUER
THE CPC GAMES CHARTS...**



**...AND THE OLIVER TWINS -
PROGRAMMED FOR SUCCESS**

**INSIDE: SPECIAL CPC
COMMS FEATURE**



ENLIST FOR HIS ENLIST FOR HIS

MAGNIFICENT

SEVEN

ocean Plus *Yie Ar KUNG-FU™* FREE

KONAMI

JAIL BREAK
GREEN BERET
YIE AR KUNG FU
PING PONG YIE AR KUNG FU II

EVERY GAME A SMASH HIT!

WIZBALL A superlative piece of software. Slick in virtually every aspect, wholly original and immensely playable. (Zzap) **ZZAP SIZZLER AMS ACTION – MASTERGAME SINCLAIR USER – CLASSIC CRASH SMASH.**

SHORT CIRCUIT The two games are excellent and have delightful graphics. The variety is the real clincher, with something for everyone. (Amstrad Action).

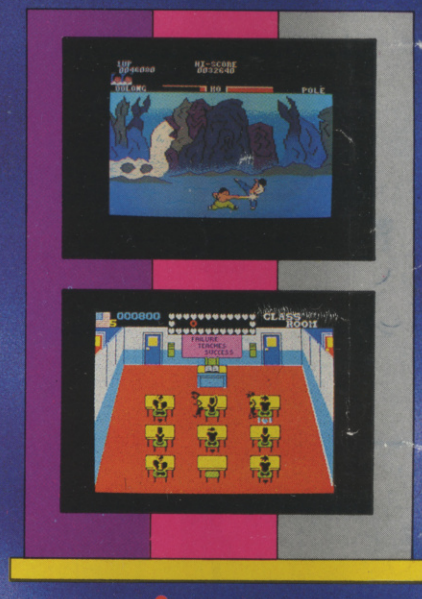
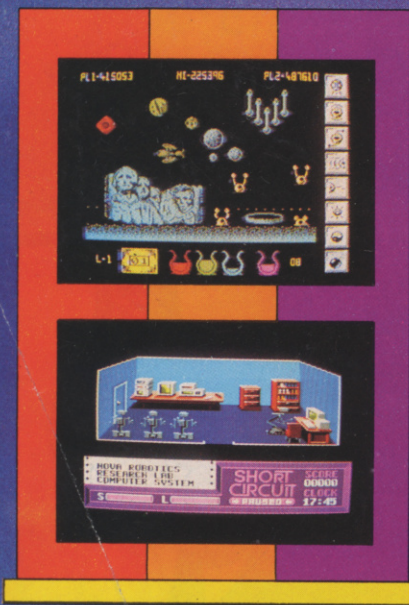
ARKANOID This is a magnificent conversion, faithfully capturing the feel, atmosphere, look and sound of the Taito original. (Zzap) **PCW HALL OF FAME/YOUR SINCLAIR – MEGA GAME SINCLAIR USER – CLASSIC.**

HEAD OVER HEELS is one of the most addictive, playable, cuddly, cute and fun games ever. Miss it at your peril. (Crash) **CRASH SMASH AMS ACTION – MASTERGAME ZZAP SIZZLER.**

THE GREAT ESCAPE "THE BEST ARCADE ADVENTURE" 1986 NEWSFIELD READERS AWARD Unquestionably the best arcade adventure so far this year – don't miss it. (Zzap) **YOUR SINCLAIR – MEGA GAME**

COBRA Go out and buy it now, no self-respecting games player should be without a copy. The graphics are superb and the scrolling is very effective. (Crash) **CRASH SMASH FRANKIE GOES TO HOLLYWOOD** This is a highly innovative arcade/adventure that you must not be without (Crash) **CRASH SMASH**

FREE YIE AR KUNG FU NEWSFIELD "BEST GAME" AWARD. Easily the best of the martial arts programs because of the variety of characters and excellent arcade style playability. (Crash) **CRASH SMASH**



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coin-op



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SCORE ACTION

KONAMI

NEMESIS

SHAOLIN'S ROAD

YIE AR KUNG FU

HYPERSPORTS

MIKIE

JACKAL

WE ARE THE CHAMPIONS

ocean

BARBARIAN

RENEGADE

RAMPAGE

10 SUPER ACTION ARCADE HITS

MIKIE Plays a knockout frantic force in the classroom, locker room and the high school cafeteria. Hip-zap, door attack, throw balls and pies... but can you make him hand over his love letter to his girl-friend?

JAIL BREAK It's every prison warden's nightmare - the inmates have broken out. These men are hardened criminals, armed to the hilt and aren't afraid to gun you all down. Just move in, knock 'em down and round 'em up. Easy!

GREEN BERET RESCUE THE CAPTIVES! You are a highly trained combat machine. Your mission: infiltrate all four enemy Strategic Defence installations - alone, against immeasurable odds.

YIE AR KUNG FU II Eight more deadly opponents to combat as you advance to become a black-belt master. Authentic fighting moves with 4 different locations.

SHAOLIN'S ROAD Our hero has finally mastered the secret martial art "CHIN'S SHAOLIN" but is trapped by triad gangs. With kicks and other secret powers, escape from and travel SHAOLIN'S road to freedom!

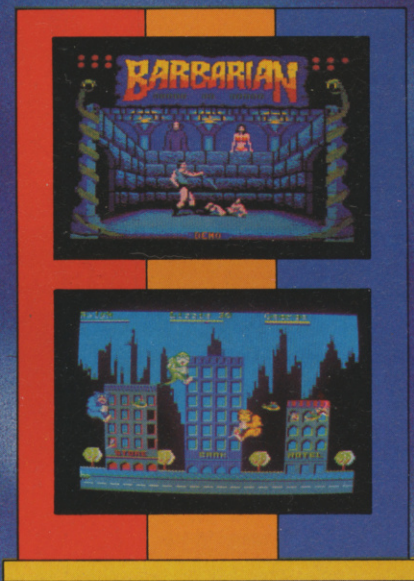
NEMESIS The planet Nemesis, is now under an all-out space attack beings from the sub-space star cluster of Bacterion. You will need all your courage and concentration to win. Get ready to blast off!

HYPER SPORTS Continuing the challenge where "TRACK and FIELD" left off. Archery, Skeer Shooting and Weight Lifting are just some of the featured events to test your skill and stamina.

PING PONG You can almost feel the tension of the big match breaking through the screen... the expectant crowd is almost on top of you! You return the service with a Top-spin Backhand, then a Forehand Back-spin, the ball bounces high, from your opponent's looping, defensive lob... SMASH!... a great shot opens the score...

JACKAL Get into this and you'll never get out... The plan - codename JACKAL - is to drop a squad of 4 crack troops behind enemy lines. Rescue a group of prisoners and whilst under attack, deliver them to helpads. Their final objective is to knockout enemy headquarters. Simple eh?

YIE AR KUNG FU Become a grand-master but to achieve this you must defeat a variety of deadly opponents, armed with different skills and weapons and must be overcome with a combination of 6 different attack moves.



ALL THESE CHART TOPPING HITS IN A SINGLE GIANT PACK

RENEGADE In the knife-edge world of the vigilante there is no place to rest, no time to think - but look sharp - there is always time to die! You will encounter the disciples of evil whose mission is to exterminate the only man on earth who dares to throw down the gauntlet in their path - the Renegade. **PLAY RENEGADE... PLAY MEAN!**

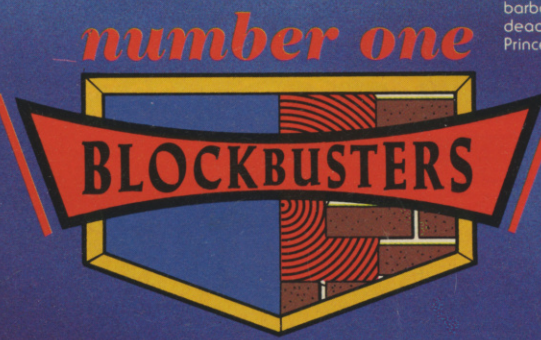
IK+ They called International Karate 'the greatest Karate beat 'em up yet' (Commodore User). And who are we to argue? But **ARCHER MACLEAN** has come up with a stunner. A third fighter. An amazing animated background. New moves (including double head-kick and a spectacular backflip). Re-mixed music by **ROB HUBBARD**.

SUPER SPRINT Licensed from Atari Games' original money-spinning coin-op, one or two players compete head-to-head over eight gruelling tracks and four levels of game difficulty. Avoid the hazards and collect golden spinners to enhance custom car features - the key to Super Sprint. With detailed animation and sound effects, Super Sprint brings the best driving excitement ever to be experienced on home computers.

RAMPAGE The game where the nice guys don't get a look in. Grab your way through Chicago, punch up New York, and jump on San Francisco. Three indescribably nasty characters which bear a remarkable likeness to King Kong, Godzilla and Wolf-man, need you to send them on a rampage in an enduring 150 days of destruction, through 50 different cities.

BARBARIAN THE STORY SO FAR... The evil sorcerer Drax has sworn to wreak an unspeakable doom on the people of the Jewelled City unless Princess Mariana is delivered to him. However, he has agreed that if a champion can be found who is able to defeat his demonic guardians, the Princess will be released. From the wastelands of the North, comes an unknown barbarian, a mighty warrior, wielding his broadsword with deadly skill. Can he vanquish the forces of Darkness and free the Princess? **ONLY YOU CAN SAY...**

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THE LINE-UP

AMSTRAD ACTION • SEPTEMBER 1988

FRONT END

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Dear AA... from Outraged of Oxford, Disgusted of Derby and Perplexed of Portsmouth – and another instalment of *Sugarman!*
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The Helpliners are a band of noble people who dedicate themselves to assisting their fellow Amstrad addicts. It's a great way to solve problems, make friends and learn stuff.

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ACTION & ADVENTURE

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The latest Codemasters project from Richard Darling.



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- 40 FOOTBALL MANAGER II**
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- 41 MICKEY MOUSE**
Gremlin present Disney's loveable cartoon character in a platform game that's much more than that.
- 43 AND MORE...**
Also in *Action Test* we bring you definitive reviews of *Night Raider*, *Street Sports Basketball*, *Battle Ships*, *Chubby Gristle*, *Psycho Pigs* and *Droids*.
- 59 THE PILGRIM**
If it's adventuring you're into, The Pilg is quite simply the best there is: and he writes for AA. Four whole pages packed with news, reviews, Clue Sniffing, Lords and Ladies...

INTERACTION

FOR THE PEOPLE • BY THE PEOPLE

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If you've discovered a nifty trick or tactic, don't keep it to yourself - after all, you could earn £20 just for passing it on!
- 52 TYPE-INS**
Five pages of listings that will entertain, educate and occasionally amaze you. And quality is guaranteed, because we offer as much as £100 if a program really wows us!
- 64 CHEAT MODE**
Our readers aren't content with just playing with their games - they want to hack them to pieces, too! This month someone's gone and written a screen re-designer for *Arkanoid*. Once again there's a substantial reward at stake for the best tips and pokes.

WRAPPING UP

THINGS TO BUY • BYE!

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For just a fiver you can connect with thousands of CPC users just waiting to buy what you have to sell.

- 68 BUYERS GUIDE**
This month we cover the complex subject of printers - what's available and what represents real value for money.



- 71 SPECIAL OFFERS**
Outstanding offers on software, plus our extraordinarily generous subscription offer!

Price fighters

In this issue you'll find revealing interviews with the Darling brothers and the Oliver twins. Talking to them set me thinking about the scandalous pricing of CPC games. Here are Codemasters producing perfectly good games on tape for £2, give or take a penny. And on the other hand there are others producing perfectly good games, on tape and disk, for five and eight times the price.

Now the common argument is that software costs according to its development, so that games that are quick to write are cheap to sell, and likewise a game that takes months to write will be expensive. It's not quite that simple, though. I doubt that anyone unfamiliar with the CPC would be able to guess which games cost £2 and which £15. If *BMX Simulator* had been a full price game, would you have been shocked?

Codemasters are not on some mission or crusade, however. They sell cheap because cheap sells. They don't need to worry a great deal about piracy. They don't need to worry too much about timing their releases. They're making lots of money. I wonder why the others don't follow suit. Could it be just too easy to sell ten copies for £150 rather than having to shift 75 to make the same amount of money?

Steve

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German dictionary for Protex	19.95

For details of our word processing and utility software send an s.a.e. or see last month's Amstrad Action.

All prices include VAT, post + packing. Please phone to enquire about products not listed. We can supply software for most computers at very low prices. Please make cheques payable to Arnor Ltd. or quote Access/Visa number. 24 hour sales line on 0733 239011. Arnor Ltd (AA9), Protex House, Wainman Road, Peterborough, PE2 0BU.

Please send me the following:

City _____ Product _____ Price (£) _____

Name _____

Address _____



I enclose cheque/postal order for £ _____, or please debit my Access/Visa card,

Total £ _____ Arnor (AA9), Protex House, Wainman Rd, Peterborough PE2 0BU

number _____

REACTION

Readers' writes

● Lurking horror

Am I abnormally stupid, or something? Way back in January when the Pilg reviewed *Gnome Ranger*, I declined to buy it on the grounds that I was still attempting to do the *Lurking Horror*.

I don't expect the software writers to make the games easy, far from it, but isn't there another way of getting help? Sending a letter means having to wait a week or two before you continue adventuring.

The Pilg helps with 'Lords and Ladies of Adventure' and 'Clue Pot' - but what if the game I'm playing isn't there?

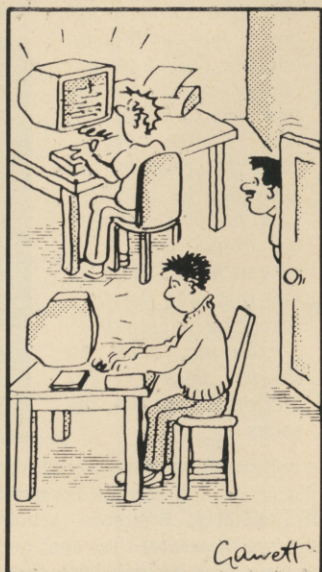
Isn't it possible to have some kind of phone line to the company that will give you hints? This may well be impossible to do, I don't know. Of course, the thing to do is to give hints with the game, or to give certain tips throughout the game (as some do).

I would be interested to see your reply - maybe I'm wronging a great many software companies - but there are the niggling few that have to make it difficult.

**Samantha King
Luton**

I sympathise, Samantha, to a certain extent - heaven knows how many times I've flung my joystick away in frustration or wanted to bash my keyboard because one game or another proves just impossible. On the other hand, who wants to spend £10 or more on a game that you finish within a week? Software houses have it difficult (sob, sob): trying to please all of the people all of the time is just impossible.

And your suggested solution - a phone-line - would prove just too expensive to run. I mean, would you pay £10 per call? Looks like you're going to have to rely on the Pilg and Cheat Mode like the rest of us!



"ANY OF YOU KIDS FANCY A GAME OF SNAKES AND LADDERS?"

● Voice of reason

44% of your readers are under 17. Can they really spend on average £14.66 per month on their computers? Or should you be aiming your articles at the other 56% who are older and also the real money spenders?

If Adventures account for 37.4% of all software bought, why did the Pilgrim only attract 11.2% in question 14? Something odd here.

Aha, more people buy word processors (5.8%) than full price games (47.2%). Are you still to continue to pander to the game playing school children?

I wonder who are the 41.6% who voted for Action Test?

**Bob Adams
Welwyn Garden City
London**

Every so often we get a letter from a games player wondering why we bother to cater for those serious software users; or from a serious software user like Mr Adams, wondering why we bother to cater for games players. The truth is we need to satisfy both categories of user. The choice, in reality, is not between AA as

● NZ program

- 10 WORKS ON NEW ZEALANDERS ONLY
- 20 AA IN NZ = \$83 + 3 MONTHS LATE
- 30 AA'S SUBSCRIPTION OFFER = \$80 + 2 FREE GAMES + DELIVERED ON TIME
- 40 IF SHOP PRICE > AA'S PRICE THEN SEND AWAY FOR A SUBSCRIPTION:
- GOTO POST OFFICE OR BANK
- 50 READ HAPPILY EVER AFTER: END

**Andre Nieuwenhuize
Christchurch, New Zealand**

a games mag and AA as a 'serious' mag: it's between AA as it is, and no AA at all.

After all it's precisely because the CPC is a genuine games/serious machine that it's put so much doosh in Mr A. Sugar's back pocket.

● Subtle Difference

I progressed from a CPC 464 to a 6128, but I've still got the former. Some 464 tapes run on the 6128, and some won't. For example the *Tasword 464* tape won't run; the 6128 gives messages like 'TASWORD.BIN not found' although it CATALOGs both Basic and binary files ok from the tape.

Why is this? Would a suitable poke help? (I can't get near the 464 for alien-zappers). I suppose I'll just have to buy *TAS-6128*.

**R Corbett
Leigh on Sea**

There is a difference in ready memory capacity between the 464 and 6128. Tasword 464 was actually written before the 6128 appeared, so you can't really complain about incompatibility. A poke wouldn't help, but a short program

to turn the 6128 into a tape machine would: only snag is, you then can't use the disk drive. Maybe Tasword 6128 is the best bet after all, unless you want a leaner, meaner device - which Protext is.

● CPC high profile

First there was the 464 on *Eastenders* and now the 6128 is in the GCSE French exam!

Picture the scene: it's a dull Friday afternoon and not only do I have to leave my beloved CPC 464 but I have to do a French exam. It's now about 1.20pm and I turn the page and see question six. Up till now there's been a bunch of frogs rabbiting on about shopping and naughty kids. The question asks about a family discussing 4 computers: a Phillips? Two Thompsons? Or the Amstrad CPC 6128 at 4700 francs? Guess which computer the family choose? Yes, the 6128!

**Ian Addicoat
Penzance**

Hope that made things a little more interesting for you!

Has anyone else seen the CPC in an unusual place?

Address your remarks to: Reaction, Amstrad Action, 4 Queen Street, Bath BA1 1EJ.

Please note that the address for all mail-order enquiries and orders is: Clare Bates, The Old Barn, Brunel Presinct, Somerton, Somerset TA11 7PY, while all subscription matters (except orders - see the back of the magazine) are handled by Avon Direct Mail, PO Box 1, Portishead, Bristol BF20 9EG.

● Two faced

The thing which annoyed me most about the *Multiface Two* was that I had to remove it every time I wanted to load software that will not load with it. Apparently, with the new *Multiface*, this is no longer the case, so is there any way of getting an upgrade – short of buying a new one, of course?

By the way, did you know that 27 issues of AA (nos. 7-34) weigh 5.5 kilos?

S. Jones
Latimer, Bucks

Yes. Send the unit back to *Romantic Robot*, and they will upgrade it for the sum of £15.95, so long as you haven't messed around with it yourself. Strange – AA7-AA34 makes 28 issues.



"THIS SHOULD DO THE TRICK..."

● Brunning shows the way?

Why is it that when I see software that interests me I have to buy to try? I have a CPC 6128 and my main interest is in serious software. Now as we all know serious software if it is any good tends to be expensive.

What I should like to see is more software houses offering a free trial on their software. I was interested in purchasing a spelling checker for Tasword when I came across an advert for *Brunword 6128* which includes a spelling checker. Remember now I just wanted to spell check a program; but

● Multi pokes

I have a *Multiface II* and I've been wondering if there would be any chance of a section for the *Multiface* in *Cheat Mode* as I'm not able to produce pokes of my own.

Neil Davis
Birmingham

A good idea, and if we get some really good ones, we'll do a section. But we won't forget that not everyone can afford a Multiface.

● From a glass house (as found)

Have you notice you cock-up? Well I have!!! Turn at the beginning of your mag., to you come to THE LINE UP. Do you see 57 SIMULATORS? If you turn to page 57 you get CLASSIC COLLECTION. If you turn to page 49 you do get SIMULATORS!!! Dur Brains!!! (No.34 JULY 1988)

Carl Wilson,
Kenilworth

Thank you Carl.

● Maplin belts up

I found Richard Johnson's article on belt replacement in *Hot Tips* (AA33) extremely interesting as I have been suffering a lot from the old *Read Error b* syndrome on my ageing CPC464.

Accordingly I wrote to Maplin Electronics at the address quoted and eagerly awaited the solution to all my

what caught my eye in this particular advert was the magic words, 'Seven days free trial for disk versions'. Three days later I had in my possession one copy of *Brunword* to try for seven days and under no obligation to buy.

Now if one software house can do this with disk versions why cannot others follow suit? Is it that they think we are all software pirates or do they lack confidence in their products? Certainly if I am going to buy software in the twenty to fifty pound bracket then I want to make sure the software meets my requirements.

So, all you software houses, Brunning software has

● Memories of a dear departed editor

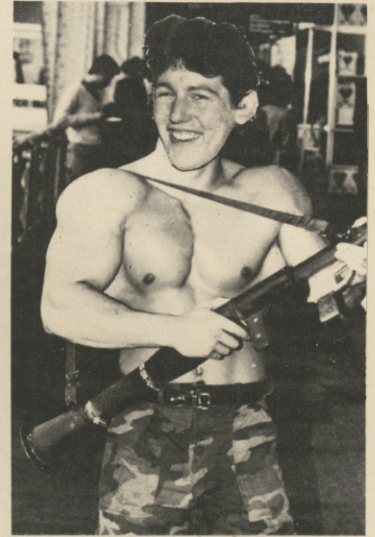
If Stock, Aitken and Waterman produced computer games as well as records would they all sound the same whilst loading?

My mum does not think there is enough sex appeal in your mag, so please print a photo of Bob Wade minus his shirt to keep her happy.

Andrew MacDonald
Eccleshall

Tell your mum to sit down, put her feet up and her glasses on and peruse at her leisure this striking picture of Bob 'Rambo' Wade. Until he departed the AA office for monitors new he was often to be found wandering around in this state. In fact that was the true reason he had to go!

Coming soon to these pages: Pat MacDonald minus his socks.



ills (or so I thought)! Imagine my chagrin, therefore, when several days later they sent me a little note to say that they don't stock replacement CPC464 cassette drive belts.

K Chapman
Pentre
Mid Glam

Quite unintentionally they are misleading you. In a similar fashion, CPC Ltd don't stock the AY-3-8912 sound chip. They do, however, stock the AM40001, which is exactly the same chip with a different part number. For a genuine Amstrad belt spare call CPC on ☎ 0772 555034: the part

number is AM170204.

From Maplin (☎ 0702 554000) the order code is FD39 and the price is £1.80 including postage and handling. From CPC (the official spares people) it costs £5.75, their minimum order charge. Both prices assume that you are just ordering one item.

● Splitter can't split

Recently I bought a lightwave joystick splitter for *Gauntlet*. But it doesn't work, when you move one joystick both people move. So I took it back and the shop replaced it, but it had the same problem. I tried it on other games like *Barbarian* and *Rampage* but they all had similar problems. Have all my two player games got bugs, or is my 6128 not meant for lightwave j/s, or is this just a coincidence?

James Williams
Brighton

The joystick splitter doesn't work properly due to a bad design. Get it sorted out with the aid of AA33's hardware project – and two player games will never be the same again. Try and get a local soldering freak to put it together.

● Golden rules

Help! Who do US Gold think they are? They really cheese me off. About 6 months ago my dad got me *Winter Games* for



paved the way: do you dare to follow?

Les Ashton
Scunthorpe

P.S. For those of you wondering, I did buy *Brunword*.

the 464, and it didn't work. So we sent it back to US Gold. They replied that I forgot to state which computer I own, so I wrote back telling them. After a while I wrote again... Still there was no reply, so I decided to phone up. They said, 'We'll take the matter into hand...' We wrote yet again and that was the last straw, so please will you help.

Lee Atkin
Didsbury, Manchester

We've printed Lee's letter (even though US Gold did indeed - and without any prompting from AA - sort out this problem) because it illustrates an important point.

Remember that companies such as US Gold sell thousands of games - in Amscene this month you can read about Powerhouse selling 250,000 in six months - and inevitably there will be occasional problems.

So if you write to a company, give them **all** the information they need to help you - and that includes the computer you have, Lee! And if you speak to anyone on the phone you should always get their name and note down what they say. These are busy people!

● **Bad feeling**

Public warning to all would-be CPC owners: do not register your computer with Amstrad! I did, and junk mail from the Software Mail Order Group is posted to the address I gave (not my present one),

● **Astronomical discovery**

On the subject of G R Gilham's 'Search for a Star' (*Reaction*, AA34) I believe that Amsoft's *Star Watcher* (soft 915) may well be the program he is looking for. One of Triptychs *Brainpower* series, it is both a teaching and applications program about the right sky. To quote the manual: 'The applications program you can use to display any part of the sky at any time of day or night'.

Whether it is still available I know not, but a user club may be a good source to try. I'm sure with a little delving Mr Gilham would be able to unearth a copy.

Mr S J Lee, Huntingdon

Thanks to all those who wrote in with this information. Unfortunately, as Mr Lee suspects, *Star Watcher* has been discontinued, though it may still be available on the remainder racks. If you find a heap of them, let us know.

One last-ditch try, Mr Gilham: there is a French 6128 program, entitled *Astro 2001 Planetarium*, available from Semaphore France, Cernex - 74350 Cruseilles ☐ 50 44 02 91. It costs 325F (that's over £30): postage extra. It's also available in Switzerland and Belgium. Hope that helps. (Thanks to J.M. Dunnett for that.)

even though I informed Amstrad of my new address.

I've written to this 'group' for the past couple of years over 13 times to no avail.

Be warned - I can't get rid of them!

Ben Poole
Westcliff-on-Sea

● **Club together**

Do you know of any Amstrad computer clubs in this area?

E Hughes
Rotherham

We would very much like clubs with CPC sections or connections to write to us and

supply information about themselves. Mark all letters Club Spot and send it to the Bath address. You'll get free publicity and, we hope, E. Hughes will establish contact with others of similar interests.

● **Address problem**

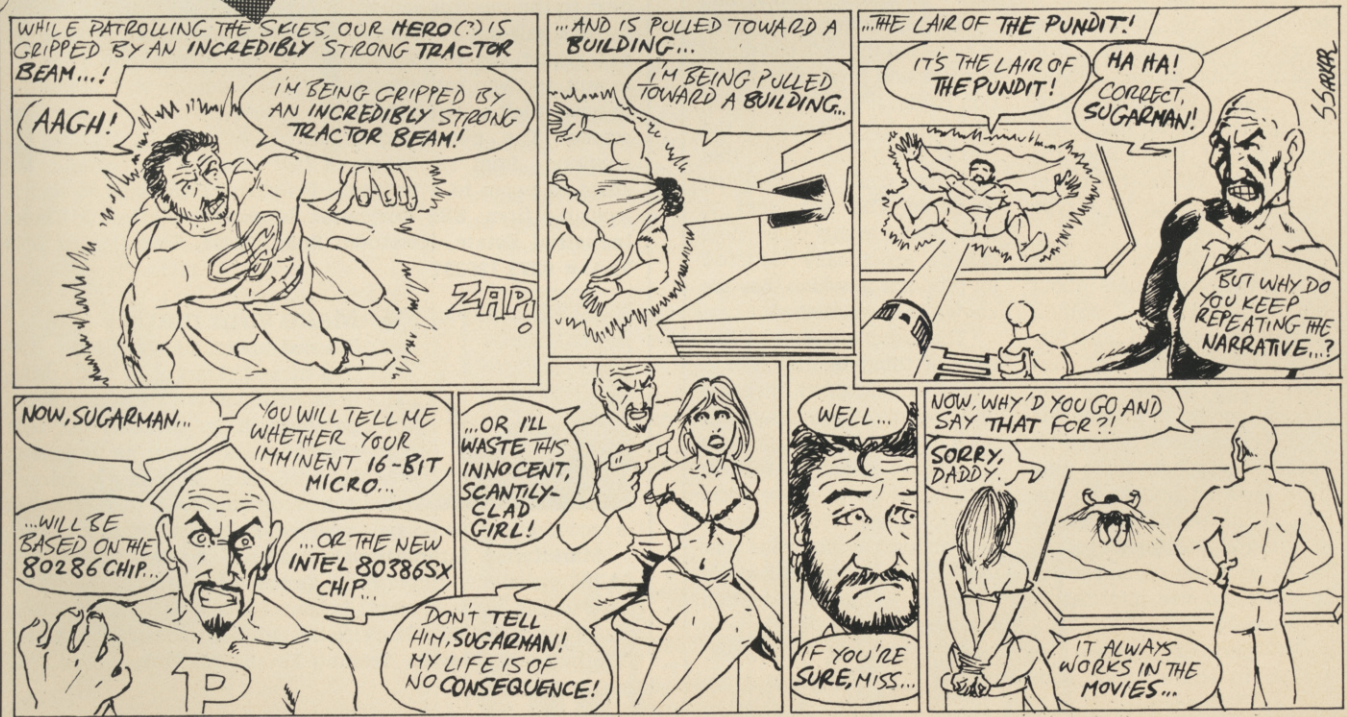
I congratulate you on 'The Joy of Hacking'. But how do I find the loading and run addresses?

M. Dickinson
Atherton, Manchester

By turning to Type Ins and typing in our 'Advanced Header Reader' program, that's how!



Sugarman by Sarkar



AMSCENE

The CPC news

Alan chases youngsters

Amstrad are planning a two pronged autumn attack on the games hardware market, with a new bundled package of the CPC's in the autumn - aimed primarily at the 'homework' market - and a low-end PC-compatible machine.

The CPC deal, reported in *Computer Trade Weekly*, consists of a 6128, colour monitor, a box to turn the monitor into a colour television and a desk. (Don't forget the fabulous clock radio!) The price of this little lot comes to £499 - representing a saving of about £50 to the end user. If the rumour is true it would be the first time the CPC has taken a price cut, albeit by a roundabout route. It is variously seen as the CPC's death-knell and its salvation.

The other Amstrad games release, according to widespread rumours in the industry, is to be a sawn-off version of the PC1512 - originally released as the 'com-

plete games/business' machine. Its failure was widely attributed to the poor quality of its screen output, and it seems likely that this new machine is to feature an enhanced graphics adaptor.

Sticky situation

Sugar's problem, however, is competition with the **Amiga** and **Atari** - particularly the latter, since the ST is expected to be repriced at £299. The solution, apparently, is for the first Amstrad to appear without a monitor. This is a risk, but it also points to the appearance of the machine with a **Sinclair** label, since that is how the Sinclairs have traditionally been sold.

Most extraordinary of all the recent rumours, however, was the suggestion - now apparently discredited - that the new Amstrad/Sinclair will be bundled with 100 (yes, two zeros there) games!

CPC implications

The combined effect on the CPC of these two rumours - the promotion of a CPC package and the appearance of a new games machine - is difficult to gauge. On the one hand the 'Homework' gimmick seems to indicate a continued place for the CPC in Amstrad's scheme of things, while on the other the new PC compatible - running MS-DOS rather than CPM, and probably equipped with 3.5 inch rather than 3 inch disk drive - clouds the issue completely.

In any case, Mr Sugar is known for his refusal to comment on future product releases, and this is no exception. Well-founded as both these rumours appear to be, it wouldn't be wise to bet money on it. Gloomy reports of the impending demise of the CPC are almost certainly premature and greatly exaggerated.

DPA bares teeth

The Data Protection Registrar, Eric Howe, has signalled a toughening up of attitudes towards companies and individuals found to have broken the Data Protection Act. Henceforth Howe has every intention of publishing the names of offenders rather than simply giving 'Mr X'-type case histories.

Howe reveals in his latest report that complaints about the withholding of rightful access to personal information held on computer files have risen fourfold in the twelve months to May of this year. Furthermore, he reports, 'research suggests there may be a growing unease on the part of the public, expressed in a decline in public confidence in many organisations to keep and use information responsibly'.

In particular Howe is known to share public con-

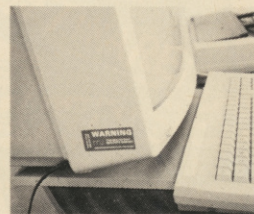
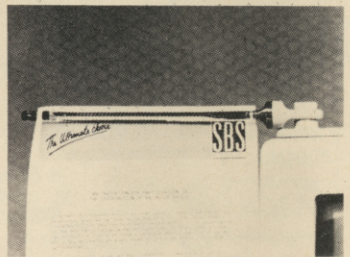
cern with so-called 'lifestyle' files - information concerning people's activities, increasingly collected through consumer surveys and product registration cards. It is only recently, with the huge drops in the cost of computing power, that such files could be efficiently produced. The argument in their favour is that consumers can be specifically 'targeted' for products in which they are known to be interested.

The argument against this type of thing is that it is a totally unwarranted intrusion into people's business and none of their damn business.

I have begun to receive complaints about these sorts of documents', Howe admitted, 'and will wish to see that the First Data Protection Principle - that information shall be obtained fairly - is being properly complied with'.

Gripping stuff

SBS Computer Supplies Ltd announce the **Grippa**, a copyholder to hold paper next to the monitor screen. It has a balljoint so that you can adjust the positioning to suit and you can choose to have it left or right of the screen. The pincers grip anything from a single sheet of paper to a notepad. The **Grippa** costs £9.95 and is available from: **SBS Computer Supplies Ltd, Unit 3 Clarks Industrial Estate, Newtown Road, Hove, East Sussex BN3 7BA. ☎ 0273 726331**



Make your mark

Worried about your computer getting nicked? Mark your CPC, printer or whatever with your name and postcode in an invisible ink that shows up only under an ultraviolet lamp. Selling a security marked item is difficult for a thief, and if it is recovered by the police it's easier for them to return it to you.

Markitwise International's security marker kit, costing £4.20, is available through the **Tandy** chain stores and can be used on car windows, most household valuables and of course your humble CPC. **Markitwise International, Maylite Trading Estate, Martley, Worcs WR6 6PQ ☎ 08866 226.**

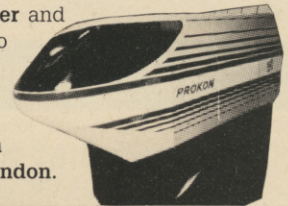
Get a kick out of Gremlin

Gremlin Graphics have bundled together seven martial arts games in a compilation called *Karate Ace*. The seven games of gratuitous violence are: *Way of the Exploding Fist*, *Bruce Lee*, *Kung Fu Master*, *Avenger*, *Samurai Trilogy*, *Uchi Mata* and *Way of the Tiger*. Price is **£12.99 on tape** and **£14.99 on disk** and it's available now.



Free ride

Microprose have linked up with **WH Smith** to offer an opportunity at the **PC Show** to ride in the **Prokon** – a 14 seater simulator driven by a million dollar computer. Buy one of their games **before 12th of September** and you receive an invitation to go for a ride – and you'll also get a **Microprose time-piece free**. The **PC Show** runs from **Thursday 14th to Sunday 18th of September** at **Earls Court, London**.

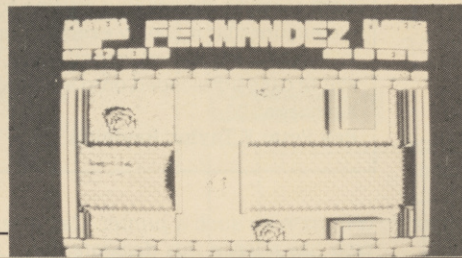


New image for Mirrorsoft

Mirrorsoft have just launched a new entertainment software label called **Imageworks**. It joins the likes of **Cinemaware** (*Defender of the Crown*) and **PSS** (wargames) who are also under the wing of **Mirrorsoft**. Their first releases include two new CPC games: *Fernandez Must Die* and *Bomboozal*.

Fernandez is a one or two player shoot-em-up in the *Ikari Warriors* style. You travel around a very large playing area killing the hostile minions of the General Fernandez so that your country can be freed of his evil domination. Included in with the game is an A3 map of the world that shows places of interest for potential revolutionaries. It's entitled 'A Guide to Failed Revolutions' (do they mean rebellions, by any chance?). *Fernandez Must Die* is due in **October** and is to cost **£9.99 on tape** and **£14.99 on disk**.

Bomboozal is a puzzling game in which you guide a cute little green guy around screen after screen blowing up bombs and mines. Once all are destroyed you go to next level. There are other hindrances to your progress that must be avoided and there are some friendly droids who helps you too. Some levels of the game have been done by other programmers including **Jon Ritman**, **Andrew Braybrook** and **Jeff Minter**. It's due out in **November** at **£9.99 tape** and **£12.99 disk**.



Quarter million plus

During the last six months **Powerhouse** have sold over 250,000 games – making them (so they claim) one of the five most popular software labels in the UK – and with your assistance they hope to sell a whole lot more. Out soon are *Freedom Fighter*, *Juggernaut*, *Test Match* and *Formula One*.

Freedom Fighter is a multi-level shoot-em-up with loads of aliens just waiting to be disintegrated. The other three are all re-released **CRL** games: *Juggernaut* is an articulated lorry simulation/strategy game; *Test Match* a cricket program, and *Formula One* a car racing strategy game for up to six players. All four cost **£1.99 on tape**.

New releases

US Gold have released another arcade conversion, *Bionic Commando*. Ten years have passed since civilisation as we know it ended. The enemy is still around and they plan to annihilate the world (again?). An elite unit of bionic commandoes are the only way to defeat the enemy and you control one of them in his attempt to save what's left of the world.

Another conversion by **US Gold** is *Road Blasters*, a futuristic racing game with gratuitous violence thrown in. Hurtle along the road blasting everything in sight and try not to get blasted in turn. Both available now and at **£9.99 on tape** and **£14.99 on disk**.



Echelon, *Bushido*, *Leaderboard Collection* and *History in the Making* are all due for a September release by **US Gold**. *Echelon* is a 3D vector graphics game involving a quest for a space pirate stronghold. No price at present. The orient is the setting for a 25 level maze in *Bushido*. A princess has been captured and assassins, samurai and even tigers stand between you and her rescue. **£9.99 on tape** and **£14.99 on disk**.

The *Leaderboard Collection* is a compi-

Action Force is released this month by **Virgin Games**. It's a smooth scrolling shoot-em-up in which you must clear a path for A.W.E. Striker by building bridges and destroying hostile enemy forces. No price set at present.

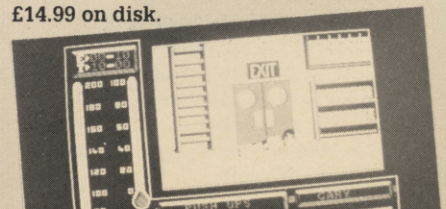


lation of the four golfing games from **US Gold** – enough golfing action to occupy you during this excuse for a summer. Price **£14.99 on cassette** and **£19.99 on disk**.

History in the Making celebrates the first three years of **US Gold**. There's also a booklet filled with facts, figure and photographs for the three years. Yet again the price has not been fixed, but don't expect it to be cheap.

CRL are about to release *Jack the Ripper*, a game based on the Whitechapel murders of the late 19th century. Prime suspects in this adventure are a nasty bunch of devil worshippers. On the streets now at **£8.95 on tape** and **£14.95 on disk**.

Gremlin are about to release another game endorsed by Gary Lineker. *Gary Lineker's Super Skills* is a rigorous training programme to build up those essential goal scoring skills. **£9.99 on tape** and **£14.99 on disk**.



WORDS WORK

WP user crosstalk with Pat McDonald

Better erm, what was it?

I see in the August edition of AA that **Martin Bolter**, like me, can't remember file names. He gave a solution, but this one is better, because it adds the facility to catalogue disks without stealing another option in the process.

Add these lines:

```
295 IF a=9 THEN MEMORY mh:MODE 2:PEN
1:CAT:PRINT TAB(28);"Press any key
to continue":CALL &BB18:GOTO 230
395 a$(9)="Catalogue
disk":b$(9)="D":b(9)=61
```

Change lines 400,470 and 500 to:

```
400 FOR j=1 TO 9:LOCATE
9, j*2+3:PRINT a$(j):LOCATE
31, j*2+3:PRINT b$(j):NEXT j
470 a=0:FOR j=1 TO 9:IF INKEY(b(j))
<> -1 THEN a=j
500 PEN 3:LOCATE 9, j*2+3:PRINT
a$(a):LOCATE 31, a*2+3:PRINT
b$(a):PEN 1
```

This enables you to **CAT** any disk and then returns you to the main menu to load your file. Lines 400,470 and 500 just change the loop from 8 to 9 and change the y-axis location from +4 to +3.

Being able to **CAT** saves you from duplicating file names as well as reminding you of the name of the file you wish to load.

T H Spence, Lerwick

Skip the perforations

I use *Tasword 6128* with a Brother M-1009 printer, and have been trying unsuccessfully to use continuous paper (A4 size). I need to print copies of letter files and also to mail-merge letters but no matter how hard I study and follow the manual, whether I use the printer control character 'u' or not, I either get no form feed or a form feed of a whole page length. All I want to do is skip the perforations - help!

P G Richards, Rosyth

I'm sorry to say that I've never been in

We've had an increase in good word-processor tips - so much so that my helpful prose is much reduced this month. I regret that a move to create a national holiday to celebrate the occasion (*started by me -ed*) was thwarted at the last minute.

On the bad news front, the dreaded EEC levy has descended, making printer prices jump by a truly extortionate amount. See *Buyers Guide* for the full story. The people who suffer most, as usual, are the end users: us.

We've had people ringing up and writing about Neil Robertson's boxing *Protex* tip. Apparently everybody thought it was a really wonderful idea, producing graphs from a word-processor. Unfortunately not many wanted to refer back to the author... because he lives in Australia.

Well, I'm pleased to say that M. Catton has come up with a similar listing but one which is generic - that is, you don't need *Protex* to be able to use it.

Ok crew: roll 'em!

Tasword files are doing it for themselves

You can't merely add the file name after the **L** in the key expansion: *Tasword's* loading routine ignores it.

I thought that this might be due to the loading routine using a machine code **CALL &BB18 (KM WAIT KEY)** which ignores the expansion buffer and looks only at the keyboard buffer, instead of a **CALL &BB06 (KM WAIT CHAR)** which would accept any further text we've put into the expansion buffer. This guess proved correct. A little searching of the **TASCODE** files for **&BB18** reveals that if we **POKE &1BF3, 6** we can alter the loading routine's **CALL &BB18** to the **CALL &BB06** that we want in order to autoload from the **L** catalogue.

So I added the following line to my *Tasword* (V1.09) Basic loader:

```
155 POKE &1BF3, &06:CALL t+54:GOSUB 20:MEMORY 1-1:KEY 159,
CHR$(183)+CHR$(184)+"Ltextname"+CHR$(13):POKE &B62B, 0:POKE &B629, 159:CALL
t:CLOSEIN:MEMORY t-1:POKE &1BF3, &18: IF PEEK(t)=195 THEN STOP ELSE 170
```

The first **POKE** installs the **KM WAIT CHAR** we want for autoloading. The expansion key removes help and holds the textname of the file you want autoloading. The last **POKE** restores the loading routine to **KM WAIT KEY**. By making all this a new line 155 we ensure that it is only executed once, on first loading *Tasword*.

SAVE this modified loader under any convenient name and you can have your chosen textfile autoloading onto a no-help screen by simply typing:

```
RUN"name".
```

Rev Peter F Taylor, Rayleigh

contact with such a printer. Can a reader who has release this demented soul from using a large pair of scissors?

Pound and a hash

In *Words Work* AA34 page 21 there was a letter asking about the pound sterling sign (£) not printing unless the dipswitches were preset. There is a way round this.

I have redefined my printer control characters to change between the UK character set and the USA character set. I use the inverse "A" for UK, the full printer code is: 27, 82, 3. The code for the USA is (using inverse "a"): 27, 82, 0. There are a number of other sets and by altering the last number "0" to another number between 0 and 7 you can switch sets even in the same document.

N Orme, Wolverhampton

Dynamic Duo

Here's a couple of listings. The first is a listing to remove the rubbish from around the edge of screens saved by *Mini Office 2* graphics program. To save a screen after drawing a graph just press **CTRL-S**.

When you run the program you will be prompted for a file name. The screen will then load, and the program will clean it up. Finally it's saved with the same file name.

```
1 'Excess space remover
2 'Rafe Aldridge 1988
3 '
10 MODE 2:INK 1,14
20 ON ERROR GOTO 250
30 SYMBOL AFTER 32
40 SYMBOL
32,255,255,255,255,255,255,255,255,255,2
55
50 OPENOUT "dummy"
60 MEMORY HIMEM-1
70 CLOSEOUT
80 INPUT "File to be opened:",file$
90 INPUT "Manual or automatic:",mo$
100 IF UPPER$(mo$)="A" THEN mo=1
ELSE mo=0
110 MODE 2:PRINT "SEARCHING..."
120 WINDOW #0,1,80,3,25
130 OPENIN file$:OPENOUT file$
140 LINE INPUT #9,a$
150 PRINT STRING$(79,"_")
160 PRINT:PRINT a$
170 i=LEN(a$)
180 IF MID$(a$,i,1) <> " " THEN 240
```

Generic boxes

Neil Robertson's letter in the July issue on downloading characters into the printer has spurred me into writing a general-purpose program that enables any permissible character out of the 128 to be defined.

Which are permissible depends on the printer. My Citizen MSP10 for instance accepts all except characters 7 to 15, 18 to 20, 27 and 127, but most do not accept as many as that. Check your manuals to see which characters are usable.

```
10 PRINT #8, CHR$(27); ":"; CHR$(0); CHR$(0); CHR$(0)
20 WHILE complete <> 1
30 READ first, last
40 PRINT#8, CHR$(27); "&"; CHR$(0); CHR$(first);
CHR$(last);
50 FOR character= first TO last
60 PRINT #8, CHR$(0);
70 FOR column= 1 TO 11
80 READ col
90 PRINT #8, CHR$(col);
100 NEXT column
110 NEXT character
120 READ complete
130 WEND
140 PRINT #8, CHR$(27); "%1"; CHR$(0)
150 PRINT #8, CHR$(27); "|1"
```

Line 10 loads the contents of the character ROM into RAM. Line 140 instructs the printer to print all characters from RAM and 150 to print unused control characters. The WHILE-WEND loop loads data into RAM in blocks of consecutive characters, each block starting with *first* and ending with *last*. If the program is held on the same disk as a word-processor, adding a line to RUN "whateververitis loads the processor.

```
160 DATA 0,6
170 DATA 0,0,0,0,0,15,0,8,0,8,0
180 DATA 8,0,8,0,8,0,8,0,8,0,8
190 DATA 0,8,0,8,0,15,0,8,0,8,0
200 DATA 0,8,0,8,0,15,0,0,0,0,0
210 DATA 0,0,0,0,0,127,0,0,0,0,0
220 DATA 0,0,0,0,0,127,0,8,0,8,0
230 DATA 0,8,0,8,0,127,0,8,0,8,0
240 DATA 0
250 DATA 28,31
```

```
260 DATA 0,8,0,8,0,127,0,0,0,0,0
270 DATA 0,0,0,0,0,120,0,8,0,8,0
280 DATA 0,8,0,8,0,120,0,8,0,8,0
290 DATA 0,8,0,8,0,120,0,0,0,0,0
300 DATA 1
```

These illustrative DATA statements above define characters from 0 to 6 and 28 to 31, to produce 'box' characters similar to Mr Robertson's but more extensive. With them it is possible for instance to print a tabular grid, as shown below.

The characters are printed seven dots high. To make them join vertically they are preceded by ESC; "1", which changes the line spacing to seven dots. ESC; "2" will restore the normal 12 dot spacing. The characters are printed two dots below the normal ones. They can be aligned if required with ESC; "j"; CHR\$(6), which rotates the paper backward two dots. ESC; "J"; CHR\$(7) will rotate it forward again. Lastly, characters held in RAM can only be printed in draft mode. In NLO the normal characters held in ROM are printed.

M Catton, Gosport

0	1	1	2	1	1	2	1	1	3
4		4				4			4
5	1	1	6	1	1	6	1	1	28
4			4			4			4
4			4			4			4
4			4			4			4
29	1	1	30	1	1	30	1	1	31

● Characters sent

● Characters printed

```
190 IF mo=1 THEN 220
200 PRINT:INPUT "Remove space
(Y/N):",t$
210 IF UPPER$(t$) <> "Y" THEN 140
220 i=i-1:a$=LEFT$(a$,i)
230 PRINT:PRINT a$:GOTO 180
240 PRINT #9,a$:GOTO 140
250 CLOSEIN:CLOSEOUT
260 PRINT:PRINT "Space removal com-
plete."
270 END
```

The second program is a follow up to the drama over extra spaces at the end of lines. This program removes those extra spaces quickly and neatly. First, save the program in ASCII form like so: SAVE "filename",A. Then run this program. It ask for the file name and then creates a new version, which execute just that little bit faster than normal.

```
1 'Mini Office 2 graph converter
2 'By Rafe Aldridge
3 '
10 MODE 2
20 WINDOW #1,1,3,1,25
```

```
30 WINDOW #2,1,80,22,25
40 WINDOW #3,67,80,1,25
50 WINDOW #4,1,80,1,1
60 INPUT "Filename:",file$
70 LOAD file$,&C000
80 PAPER #1,0:CLS #1
90 PAPER #2,0:CLS #2
100 PAPER #3,0:CLS #3
110 PAPER #4,0:CLS #4
120 MOVE 0,69:DRAW 640,69,0
130 MOVE 0,73:DRAW 640,73,0
140 MOVE 0,77:DRAW 640,77,0
150 SAVE file$,b,&C000,&4000
Rafe Aldridge, Woodford Green
```

Star quality

Did you know you can print double or quadruple sized characters on the Star NL-10 (or any other Star printer for that matter) in NLO? The code for NLO double height is 27,120,1,27,104,1. You get a really professional effect on posters.

When using A4 width paper in conjunction with an NL-10 and WordStar, the text can be properly aligned on the paper

width. In non-page formatted style a left margin of 5 and right margin of 74 (^OL5 and ^OR74). The paper guide should be central. In page formatted style with the left margin as normal and the right margin at 60 (^OR69) and the paper guide set to the rightmost position.

William Weir, Castlehill

And finally... a tip from myself. Did you know that, quite possibly your printer has two different italic modes? The standard code for italics on is 27,52. For a change (and without any other printer codes coming after it) try 27,62. Use 27,61 to release it. Compare the two italic styles, and you could well see a difference between them.

The second style works by turning on the eighth bit of the printer port. Generally the resulting characters are the inbuilt italic set, rather than italicizing the standard font.

PbM

RU14 CPC PD?

What was that? PD software is rubbish? Look, if you're not interested in serious budget software, go to *Action Test* and shoot something.

PD DISK 1

£6 ● Disk
DW Software, 62 Lascelles Avenue,
North Humberside HU19 2EB

David Wild's DW Software is unique in that, to the best of our knowledge, it is the only library devoted purely to the CPC: rather than all that standard CPM 80 column two colour software, David's is written especially for the Amstrad.

That's what it's all about

Take a look at this magazine. Exclude the companies who splash colour advertising across it in the hope of making sales. The home computer scene has many other faces, apart from the high profile corporate games seller. So listen in, because AA reaches the parts...

When people write something permanently storable, they automatically have copyright: without his/her express permission only the author can copy it.

Public Domain programs, on the other hand, have a generic, all encompassing copyright. *Anybody* can copy them, and hand out as many copies as they wish. What they cannot do is to pass off the work as their own and/or sell it.

So what's the £6 for – postage? Hardly. These programs accumulate at libraries. Each library – in theory, at least – updates its own programs and makes sure that they work properly. It is this 'housekeeping' you pay for.

This sounds all very well, but surely if they're free the programs can't be up to much?

The disk contains:

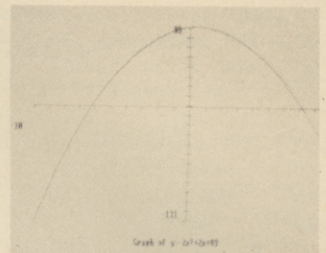
- **Easydos Desktop.** A novel name to get around the various strictures surrounding the WIMP (Windows, Icons, Mouse, Pulldown menus) environment – you know, you move a little pointer to pull down menus from the top off the screen, and select icons to do various tasks.

This sort of approach – very appealing to the eye – doesn't really work on the Amstrad. The problem is the lack of memory and general speed to produce displays and effects that are worth seeing. It can't be denied though, that this can help in the appreciation of such disk management systems. It's a good attempt at a virtually impossible target.

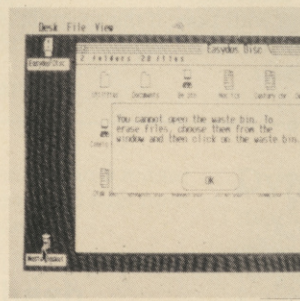
- **Format, Oops! (file uneraser) and Editor:** standard, no nonsense offerings that compete with similar commercial products.
- **Keyword,** the first of two programs for the Basic programmer. It's designed to make program entry (Type-Ins etc.) easier, and works by configuring the keyboard to print certain Basic commands when you press a CTRL key combination. So CTRL-W makes the word WINDOW appear, and CTRL-S produces SAVE. It takes a while to get used to this sort of sys-

tem, but it helps with silly things like typing errors, and entry speed.

- **Basic+,** the second program for Basic programmers, is a suite of RSX commands that add in various ways to the power of Locomotive Basic. They range from the fairly low key CAPSON and capsoff routines (no prizes for guessing what they do) up to some scrolling commands. Admittedly these RSX's can do nothing a *Hot Tips* follower can't do, but people want programs that they can use easily. This toolbox is a welcome addition.
- **Quadplot** plots quadratic equations (surprise surprise).
- **MGP** is a full mathematic graph plotter – more educational, even useful for those who need an equation drawn properly.



● Quadplot goes to work on a curve

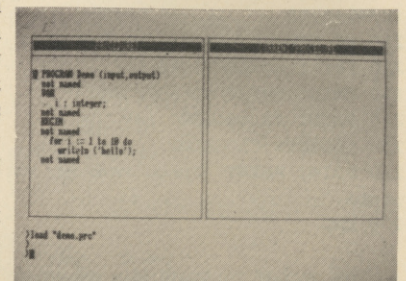


● Is your Amstrad a WIMP?

Documentation is minimal, consisting of a few pages run off a printer. Many PD programs don't even bother with this much, however, relying on users to work out which button does what.

There can be little doubt that PD software is a good thing. It supplies people with cheap software, and can occasionally be of a very high standard indeed. It also gives programmers the satisfaction of seeing their creations being used and appreciated.

This first PD disk from DW Software is definitely a cut above the average, and I hope that many more are produced. The hobbyist interest of home computers is infinitely more rewarding – both in entertainment and education – than interminable witless games.



● PEDIT: Program Editor

If you run a CPC PD library we'd like to hear from you. Send a copy to PD, Amstrad Action, 4 Queen St, Bath, Avon BA1 1EJ. If you would like material returned be sure to enclose a suitable SAE, and mark the disk with your name and address.

GOOD NEWS

- A fair selection of programs...
- ... and the price is right!

BAD NEWS

- The documentation is on the limited side...
- but at least you get some!

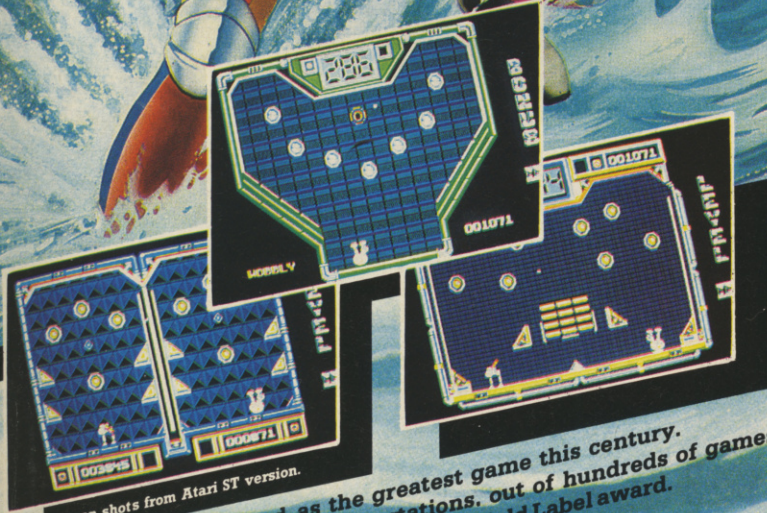
Are You Good Enough to
TACKLE

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BUY**

HOTSHOT

There is so much in Hot Shot - you need to be a crackshot, a pinball wizard and an ace controller. Have you got what it takes to beat Hot Shot?

**GOLD
LABEL
AWARD**



Screen shots from Atari ST version.

Universally acclaimed as the greatest game this century, Hot Shot has exceeded all expectations, out of hundreds of games only two have qualified for Addictive's Gold Label award. These are Football Manager 2 and Hot Shot. Hot Shot is so action-packed, before you buy, read the back of the Hot Shot box. Available at all quality stores.

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Games Machine

"It looks frabjuous ... and well brill it looks too."
Sinclair User.



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- Amstrad - £9.99 cassette £12.99 disk
- Amiga - £19.99 Atari ST - £19.99
- IBM PC - £19.99

No. 1

Go For Gold.. It's Totally **Addictive**

Wait until midnight

Micronet – the CPC hobbyist's dream, or a waste of time and money?
Pat McDonald has its number.

Once upon a time in the seventies the dream of a consumer telephone network became a possibility. Such a network, it was thought, would create its own society, with subscribers able to shop, socialise and even bank without getting out of their armchairs. Furthermore the system would take advantage of the new Videotex graphics system.

So was born Prestel, a system that would revolutionize the way we live, with people no longer obliged to leave their home...

You will already be aware that the reality, as it invariably does, fell far short of this futuristic dreamworld. According to the original specifications the system would behave like a telephone: simply dial a number, and the relevant page is displayed. With over 100,000 pages available, however, just running through the database was prodigiously time-consuming. The result – surprise, surprise – was that people very sensibly couldn't see the point, and continued to leave the comfort and security of their homes to venture out into supermarkets and banks.

Fast forward a decade. The time: the present. The stem of the system is Prestel. Coming off it at various points are smaller, diverse areas, called information providers: Focus, Prestel's own magazine, and services such as CitiService, Farmlink, Education and Teleshopping.

But the biggest branch is Micronet, a section dedicated to microcomputer users. In other words, you and me.

Subscribers

Let's assume you already have your modem, interface and comms software. Before you hand over your hard-earned cash you very naturally wish to dial Micronet and take a look. What do you get? Well, very little, to be honest, unless you actually have a subscription. Browsers can look at the service by entering an identity of 4444444444, and a password of 4444. Real identification is sent by post after you hand over your loot.

When you do subscribe, dial the number, enter your ID and password, and you find a rather pretty display frame, with little indication of where to go from there. So first: how to move between pages. Type an asterisk (*), a number (prefixed with 800 – Micronet begins at page 800) and a hash.

Your problem, of course, is that you don't have a directory. Fortunately you can now type a name between the hash and asterisk. Far easier to remember.

So try *CAGE#, which puts you into the *Amster's Cage*, a special interest area for Amstrad users. It's shared with those dreadful PCW and PC owners, I regret to say, but even so you should find plenty to catch your interest. There is a large daily-updated letters section, for instance, a public domain software section, a



● The Micronet deal... Interested? ☎ 01 278 3143 for more information

How much?

Micronet costs £20 a quarter, but if you pay a year in advance – £79.95 – you get a free modem. Ok, so it's a standard manual device that can't handle 300/300 communications – but it draws its power from the line, rather than a mains socket. It's a good freebie.

For an extra £62 (all prices include VAT and postage, by the way) you receive the Spectre Interface and the *Cage Comms ROM* software, a mini review of which appears below.

Online charges – which have just gone up, so they shouldn't rise again for a while – are 7p a minute peak

time (8am-6pm), 1p per minute off peak (6pm-12 midnight) and free between midnight and 8am. This latest price rise created quite a rumpus, with letters of complaint appearing in all kinds of places. In fairness to Micronet, however, it must be said they had not previously raised the price for 3 years and it was a cheap service compared, for example, to Microlink.

In addition to these prices you must take into account the cost of your call. There is a national number – 01 623 8855 – but in order to keep the price down local numbers are also available.

hardware area and a bulletin board. Don't expect anything as bizarre as *Gnome at Home*, though.

Another section of interest to the CPC user is the telesoftware shop. From here you can buy commercial games, often with a 15% discount. A software chart is updated regularly, and you can vote for your favourite programs too. And half the programs you don't even have to pay for.

Then there is electronic mail. Now not only can you send messages through the various areas, but you can also use a gateway to the Telecom Gold computer. This is one of the more widely known e-mail services.

The charges here can be more than Micronet, with VAT on top. A mailbox costs at least 20p, with each extra K (Kilobyte = about



Smart offer

For £138 Micronet will sell you a *ProPak*. This interesting black box (well, cream actually) boasts an impressive specification.

And at £236.40 there's a special offer comprising the *ProPak*, Spectre comms interface, the *Cage* comms ROM and a year's subscription to Micronet.

The menu-driven software (full review in AA30), developed courtesy of the *Amster's Cage*, has features such as a built-in editor, printer dump and software downloader. Learning to use it is a lot more fun than most, and it's one of the best comms packs I have had the pleasure

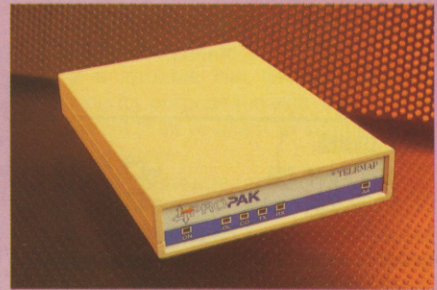
of experiencing.

The modem has a high specification for the price. It's smart – in other words it's Hayes code compatible and features autodial, auto-answer and baud rate detect. It has no manual buttons, relying totally on the automatic abilities, and there's a monitor speaker and redial option included. One grumble: a power supply built into an oversized mains plug. Try getting *that* into an adaptor!

Finally a word of warning about the Spectre comms interface, which lacks a through connector for the 464 disk drive.

The package isn't perfect, but it's the

best complete kit around, bearing in mind that it is Viewdata only without additional software.

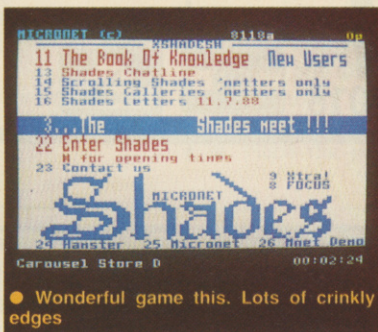


1,000 characters) costing an additional 10p. Of course more people can be reached than most e-mail services, and radio paging is also catered for.

News services, weather reports and other features are also available, together with information on many small countries, towns and cities. Such information is hardly Micronet dependent, but it's useful to know where to find it.

Fun and games

If all this serious stuff has left you with the impression that comms is short on laughs – well, with all that expensive equipment and those phone bills, wouldn't you be glum? – you may be interested to learn of Micronet's entertainment sections, located in *Xtra*. There's plenty to keep you occupied while the bill ticks up... and up...



● Wonderful game this. Lots of crinkly edges

Shades, an interactive game, was the subject of a health warning in last month's *Amscene*. Two players got so involved they fell in love, would you believe, and ended up married. Anyway, as I was saying, *Shades* is set in a traditional fantasy/adventure land, with the usual quota of magic and atmosphere. Trying to play

HRH Hackers

Early in 1984, a rarely used Prestel computer became a target for hackers. Two of them – computer journalists Stephen Gold and Robert Schrifreen – were convicted of forgery as a result of the incident, which included the use of HRH Prince Philip's mailbox.

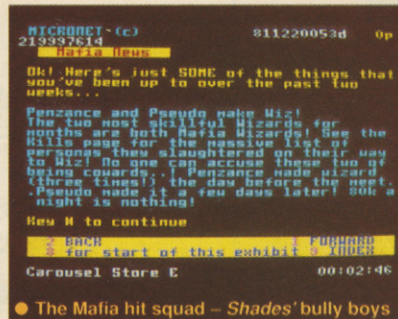
Since then the Court of Appeal and the House of Lords have ruled that forgery in this case does not apply.

So the two merry hacks have had some free publicity, and Prestel has been allocating resources to protection at a furious rate – arguably what they should

have done in the first place.

Another recent piece of news has been the price increases. The prices here are the current ones – they used to be 1p per minute peak rate, and free the rest of the time. Various sections of the media (to say nothing of the public) have hammered Prestel for daring to even contemplate such a move, let alone implement it.

Micronet's public relations officer Helen Batchelor stated that there had been no increase 'over the past three years', and that 'to retain our position we had to increase our tariffs'.



● The Mafia hit squad – Shades' bully boys

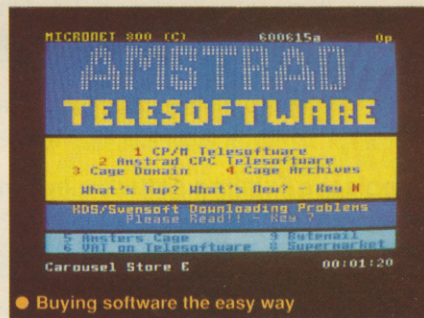
with 139 other lunatics is interesting, to put it mildly, not least because the favoured method of scoring is to kill other players. Less destructive players can band together, rather than working everything out individually. But watch out for the love bug!

Starnet, by contrast, is a logical game in which you are pitted against other players in a galactic empire of the future, with a few ships to help you defeat the emperor. Do this and future moves are free. *Starnet* seems to take longer to register on than *Shades*, but then play has to be concurrent, with everybody moving on the same day. Again, imperial 'political' groups try to get their person in.

Games such as the two mentioned here are constantly being improved and updated. For those with a less ambitious taste, *20th Century Hamster* provides a compendium of widely-ranging

activities, many of which are excellent.

And then there's *Slasher*, a vicious gossip and muck rakers' page that really is – well, witty. I love it, but then I'm not noted for my sophistication and genteel character. (You can say that again – ed.)



● Buying software the easy way

Is it worth it?

Micronet is likely to continue to grow as more home computers come onto the market. So the facilities will inevitably be upgraded, eventually encompassing on-line arcade games and simulations. For anyone but a comms nut the whole thing may be an expensive frippery: the daytime prices (and don't forget the call costs too) quite simply cannot be justified for the

average user.

On the other hand this is the biggest entertainment bulletin board you'll ever log onto. The offers are worth checking out, especially the *ProPak*, and the comms enthusiast will be attracted.

After all, logging onto Micronet need not be expensive, if you can just stay awake until midnight when the service is free...



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Labels 4.0" x 1.5" (1 across)		£3.25	£5.50	£10.50
Labels 4.0" x 1.5" (2 across)		£3.75	£6.50	£11.95
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What the experts said of the Cage Comms Rom

Telephone bills - argh - can be kept to the minimum. Great for information Providers. **ACU**
 Very good indeed. An excellent viewdata Package...amazing. **MICRONET** - Amstrad Microbase Editor
 Can slash your online time. Best CPC viewdata editor yet. I unreservedly recommend it for Viewdata. It's the first one I've used that is powerful, bug free and I've felt happy with. I now use it in preference to anything else. What more can I say? **CwtA**
 This is the comms package that others will be measured by. Over the last few years. I have seen and used a lot of different combinations of machines and comms software. On the basis of what I have seen available, I have no hesitation on recommending the CAGE for any CPC viewdata user. **AMSTRAD ACTION**
 Knocks spots off ALL its competitors. I use the CAGE (comms rom) constantly. **WACCI**

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HOT TIPS

Superb soft/hardware tricks and tactics

The AA guide to shortening programs

Program compression is something I've found myself doing quite a lot lately, having written 38K Basic programs which seem to enjoy throwing out **Memory Full** on a regular basis.

Here's a step by step guide to data compression:

- Use a bootstrap (loader program) which sets up functions never changed throughout the main program's operation – things like setting **HIMEM**, for example, extra characters and the correct **SPEED-WRITE**.

The relevant commands can then be removed from the main program saving valuable memory.

- If extra characters are never used in your program place the command **SYMBOL AFTER 256** in your bootstrap. This reclaims memory.

- Concatenate program lines when possible. By efficient execution of this process, the number of lines can be reduced. Because many line numbers no longer have to be stored this saves memory.

Take care to ensure that you don't place one line onto the end of an **IF-THEN** statement. Don't remove vital lines (e.g. the beginning of a subroutine). There's no foolproof guide here except that a subroutine always ends with **RETURN**. Often another one follows after it.

- Delete all **REM** statements. (Including lines which begin ').

- Place the instruction **CLEAR** in your-

program at points where previously established variables no longer matter. For example, after drawing a title screen. **CLEAR** kills all variables: to keep one **POKE** its value into memory, use the command and then **PEEK** it out again.

- Keep the number of different variables to a minimum.

If a variable can be forgotten after serving its purpose (eg **FOR 1=1 to 5000** to pause) then re-use it in similar circumstances later.

- Place frequently repeated lines in sub-routines.

- Place the instruction **anyoldvariable=FRE(0)** in the main body of your program. This forces a garbage collection preventing unnecessary garbage build up.

- **RENUM 1,1,1** to minimise the length of your program.

Monitor your progress by typing;
PRINT FRE(0); " Bytes Free"
in direct command mode.

Sean McManus, Stevenage

We welcome your contributions to Hot Tips, and the best published each month earn their author £20. So what are you waiting for?

Address your work to: Hot Tips, Amstrad Action, 4 Queen St, Bath, Avon, BA1 1EJ.

The great bank heist

I have devised a routine to transfer all of the normal bank 0 memory in 16K banks into the upper 64K of my 6128. The result is three 16K files on disk covering memory from 0 to &C000, which can be investigated at leisure. The idea is to switch into the &4000-&8000 slot, a 16K block from the upper 64K. Next transfer 16K of code into it, then switch it back out again. By resetting the computer control is regained, but the code in the upper 64K is retained. A simple out command switches the code back into the lower 64K where it can be saved in the normal way.

Typical situation – program running, jumpblocks erased, no way to access RAM other than by Multiface.

Intent – To save &4000-&8000 to disk.

Solution – Press the red button on the Multiface and using the toolkit poke the following into &8000 onwards: **F3, 01, C5, 7F, ED, 49, 21, 00, 00, 11, 00, 40, 01, 00, 40, ED, B0, 01, C0, 7F, ED, 49, 18, FE**

This is same as the following assembler:-

DI	Disable Interrupts
LD BC, &7FC5	Swap bank 5 with bank 1
OUT (C), C	
LD HL, &0000	
LD DE, &4000	Move 0-&4000 up to
LD BC, &4000	&4000-&8000
LDIR	
LD BC, &7FC0	Swap banks back to normal
OUT (C), C	
WAIT: JP WAIT	Endless loop to serve as a break

Next set up the Multiface locations &2000-&2003 for a jump to the code you have just **POKE**d into &8000, ie

00,80,0C,C0. Press ESC and press J. If all has gone well the prog will not be running but circulating at &8016 as a check of the stack will show.

Press the red button again. Next the machine has to be crashed to reset it. This can usually be achieved by setting up &2000-&2003 to 00,00,89,C0. You should have a machine looking as if switched on: you can't see your block of code in the upper 64K To get this into normal RAM type in Direct Mode:

OUT &7F00, &c5. SAVE "BLOCK1", b, &4000, &4000

This gets your block onto disk. Remember that this block has originally come from &0000-&4000. A similar method may be used for the other two blocks but you must poke your code well out of the areas that you are moving about and never in the &4000-&8000 block. The code to retrieve the &8000-&C000 block is as follows, and can be **POKE**d into say &3000. Don't forget to press "*" to access normally and not the Multiface RAM:

F3, 01, C5, 7F, ED, 49, 21, 00, 80, 11, 00, 40, 01, 00, 40, ED, B0, 01, C0, 7F, ED, 49, 18, FE.

Use the same method after running this – reset the computer, do a **OUT &7F00, &c5** and save to disk. The bank &4000 to &8000 requires a slightly different approach as this is the bank that is swapped around. The code is moved up 16K, then swap the banks, and finally move the code down again. Use the following code which can be located at &3000.

F3, 21, 00, 40, 11, 00, 80, 01, 00, 40, ED, B0, 01, C5, 7F, ED, 49, 21, 00, 80, 11, 00, 40, 01, 00, 40, ED, B0, 01, C0, 7F, ED, 49, 18, FE

Once again, **OUT &7F00, &c5** after a reset will bring the block into range for a normal binary save. If the crash does not work then random jumps to odd places usually do the trick eventually.

CL Naylar, Penparc

PROBLEM ATTIC

You ask 'em, he answers 'em. No problem!

Tough lesson

I recently typed in a game from a listing and saved it to tape.

However when I tried to load it back in, it started to load **Block 1** and then came up with a **read error b** message. Reading the manual I found it said to rewind the tape and try again. I tried this and it still didn't work. Can you solve this problem without my having to type it all out again?

Andrew Helsby, Emsworth

I regret to say, Andrew, that, because your own cassette deck cannot load it, the tape itself must be up the creek.

So you will have to type it in again. In future though, make multiple copies of everything you type, preferably every half hour or so. The actual time you spend working and saving is your responsibility - how much are you prepared to lose due to tape problems?

How? Where? How?

I would like to buy a Dk'tronics 64K RAM expansion for my Amstrad CPC464. Please could you tell me how to order it through the post.

Ian Dowse, Dunlaoghaire

Music while you play

I am programming a game in Basic at the moment and I would like to know how to load in *Advanced Music System* files and play them without having to load the main program in, so that while the game is running I can listen to the tune.

This must be possible since if you wanted to play the Blue Danube while you are playing a game, all you have to do is put *Elite* in the disk drive, and type:

```
OPENOUT "D":MEMORY &5FFF:CLOSE-
OUT:LOAD "MUSICEX":CALL &6000
```

Nicholas Irving, Headley

Unfortunately no-one has yet written an interrupt driven sound processor that works with the AMS. Several Type-Ins can play such, but not under interrupt - that is, while the Amstrad is doing something else.

Keep an eye out for future submissions though. It is as you say perfectly possible - to a machine code programmer with time to spare. Any volunteers?

Dk'tronics products were bought by RAM Electronics. Their address:

Units 8/15/16 Redfields Industrial Park, Redfield Lane, Church Crookham, Hamps GU14 ORE England. ☎ 0252 850085. Cost: £49.95.

You may find it cheaper to buy the product through a retailer like Arnor or Comsoft - check the adverts in recent issues.

Colour blind

In 1984 I purchased a 464 with colour monitor. I have recently been having problems. Various colours show up too dark, or black, like dark blue, brown and green. This can ruin many games, such as *World Class Leaderboard*. Please can you suggest the fault, and how much it will cost to repair and where.

Paul Rushton, Middleton

The CPC's colour system is based around a three colour, three brightness scale. The colours are red, green and blue: the brightness levels are off, normal and full. A diagram might help:

	RED	GREEN	BLUE
OFF	X	X	X
NORMAL	X	X	X
FULL	X	X	X

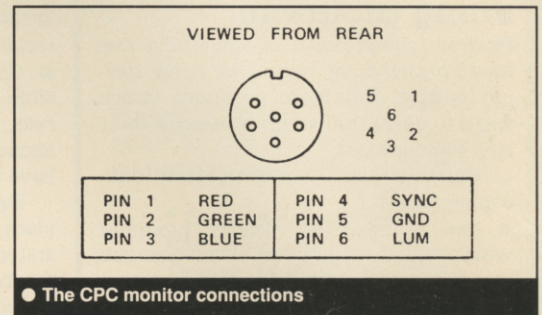
From this you might work out why the Amstrad's total number of colours is 27. (Three to the power of three).

It seems likely, from other letters, that a defective signal is quite a common problem. The only likely mechanical fault is that your monitor lead has a bent pin or something similar. If so it shouldn't cost a lot to repair.

On the other hand monitors and computers do break down. In either instance, talk to Analytical Engineering Ltd, ☎ 0702

618455. You send them your broken equipment, and they give you (eventually) a quote on how much it's going to cost to repair.

They're not cheap - minimum charge £10 plus parts. But for a big repair job they're good. (They don't repair disk



drives though: they replace them.)

Talk to your local electrical repair person. If it's a simple lead job, they should be able to work out the wiring from the manual. For those who don't have a manual, here's a diagram. For a knackered monitor try the firm above.

Amstrad overload

Why can't manufacturers of plugs and adaptors make larger expansions? I use a four way expansion unit (4 devices into one wall socket.) I have 7 different items to use, but I can't run them all at once. 'The new eight way expansion for £1.99', that would be ideal - if such a thing existed. Or can I plug one four way adaptor into another 4 way adaptor? Would it explode?

How do I get a black background mode 2 screen on switch on, rather than a blue mode 1 screen?

Ali Q, Woking

You'd be lucky to get a two way adaptor

Quadrophenia

My uncle recently bought a new stereo system for his car, and had four speakers left over from the previous system. Is there any way I could connect these speakers up to my CPC6128?

Jeremy Bowden, Loughborough

You could connect them directly, replacing the Amstrad's present speaker, but this really wouldn't improve matters much. What is needed is an amplifier to connect to the stereo socket, and drive the speakers properly. We haven't yet...

Stop Press... Hold the Problem Attic pages... We have just received such a Hardware Project, and it will go into the next issue. It's only going to be a stereo system, however: quadrophonic hi-fi is a bit out of our league.

RAM, ROM and a coffee shortage

Recently I bought a disk drive for my CPC464, resulting in my coffee intake going down due to decreased loading times. The snag is that I have so much tape-based software at present, and though I can transfer them to disk, I am not sure which is the best route. Claims are made for the *Multiface 2+* unit, and they seem reasonable, but so do the claims for the Siren disk producers. Does this mean I have to buy both?

I like the idea of turning my 464 into a 6128, re your article in AA30. I don't like the idea of an external RAM pack. Once upon a time, you reviewed an internal RAM pack from Vortex, and a 6128 version was promised. What happened? Are they still in business? Would this be an easier way to upgrade? Finally, which is the best ROM board?

Brian Privett
London

I assume for your first point that you are talking about the Siren tape-to-disk software *Discovery Plus*. This is all very well, but such copiers become outdated very quickly as protection systems get even more sophisticated. The *Multiface 2+* is more expensive. On the other hand it will backup more games. The other difference between them is that Siren's product removes protection, whereas *Romantic Robot's* re-encodes the programs that it backs up. So I'll recommend the *Multiface* every time.

You seem a bit confused about memory expansions. The AA30 upgrade article talked about the *Dk'tronics* memory expansion. The *Vortex* (who are a German company, and still healthy according to latest reports) was incompatible with the *Dk'tronics*, and very little software was written for it. If you want a 6128, then for the moment you're stuck with an external RAM pack.

Best ROM board is *Rombo's*, at £34.95. ☎ 0506 39046.

for £1.99, let alone an eight way. Now, I can't **promise** that it will explode – but overloading mains cables is dangerous because it can increase the working temperature of the cable beyond its safety level, gradually causing the insulation to deteriorate. Result: fire.

Not wise if you had a next birthday in mind.

The one and only safe – and unfortunately expensive – way to get more mains cables is to have an electrician run in extra cables.

On to your second question: to change the start up colours and set up, you would have to use an external ROM on initialization. If you're heavily into machine code this won't be too tricky, but otherwise forget it. Don't forget the cost of the ROM board either.

A ROM blower is available from **John Morrison** at £39.95. ☎ 0532 537 507

Clean heads, bad news

I own an Amstrad CPC6128 and the disk drive doesn't work. I put in a disk, type **RUN "filename** and it starts those familiar loading sounds.

Then you can hear the disk clicking. I think the disk drive head needs cleaning, but I'm not sure. What do you think?

How about an address for a head cleaner?

Stephen Godrich, Morriston

The three inch drives are very reliable, partly because the disks are encased in a sleeve and partly because of the dust excluder. And when they do get dirty the heads clean themselves, so it is likely that your disk drive is seriously ill, I'm afraid. I suggest you contact *Analytical Engineering* (mentioned above) and steel yourself for some bad news.

If you insist, **Micro Interface** (☎ 01 340 0310) do a disk cleaner for £5.99.

Easy one

What is the best art package for the CPC464, on tape at a low price?

M Barge, Emsworth

The best art package for the 464 was *Melbourne Draw*. The rights to publish it were bought by *Mastertronic*, the budget software people. So a budget art package should be on the horizon.

Merging the AA way

If I have two separate programs, and I renumber one to fit in a space in the other, could I merge them together?

Not just a 'Yes', I want you tell me how to do it!

A J MacDonald, Headingley

The way to merge two programs together is to load one, and then type for the other: **-MERGE "filename** rather than **LOAD "filename**.

They should then both be in memory, added together, so you can save them as one program. Of course, there must be enough space for them both.

As if we'd ever just say, 'Yes!'

Questions, questions

When I load some games from tape on my 6128 I sometimes get **Read error A** or **Read error B**. What do these mean? Is there a device on the market to improve loading from tape for the 6128?

Is there a relative data storage program that I can use to help write a database? Is there a five and a quarter inch disk drive available for the 6128? Why are three inch disks so expensive? What is Public Domain software?

Alan D T Lifeson, Moston

Read errors B and **C** indicate that your machine is having checksum and timeout errors with a tape. It's a common problem on the 664/6128 but as yet we've not yet heard of a device that helps to any extent. If there's a solution we'd like to hear about it – so we can share it with everyone else.

Minerva Systems (☎ 0392 37756) supply a product called the *Random Access* filing system but this does not perform work in memory, it uses the disk drive. *KDS Electronics* (☎ 04853 2076) supplies a five and a quarter second drive. This behaves almost as a standard drive, with the exception that it grabs a little more memory than usual. It has a capacity of 800K and works under *Amsdos*, *CPM* and *CPM+*. Price is £139.95+£4 p&p. (ROM software for it costs £19.95).

For the prices of disks complain to the importers (*Amsoft*); and for Public Domain see page 14.

Quest for the 8 bit printer port

I would like to know if the expansion port pins (D0 – D7) are connected to the printer port pins (D0 – D6), D7 being the eighth bit. If they are, would it be possible to build an 8 bit printer port?

Secondly, why don't you print pokes for use with the *Multiface*?

Christopher Gray, Ivybridge

Eight bit printer ports are not wired directly to the expansion port pins – they are put through IO selection and buffer devices first.

That's why the *KDS* one (featured in *Buyers Guide* this month) costs £19.95: it's not simply a matter of a few bits of wire.

Secondly: yes, we will print *Multiface* pokes, if we get ones good enough. Not too many at a time though – we aim to please as many of the people as much of the time as possible.

Stuck?

If you're at the end of your tether, let **Pat McDonald** assist. And if you've discovered a neat trick, share it through these pages. Write to **Problem Attic, Amstrad Action**, 4 Queen St, Bath, BA1 1EJ.



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FIRST BYTES

Richard Monteiro's machine code tutorial

Feel any different after last month's brief stab at assembler? More to the point, how did you get on with the problems left you? Which of the following bits of assembler, we wanted to know, are acceptable, and why?

LD A, 34 LD D, 267 LD S, 23
LD BC, 2523 LD DE, 76553 LD HL, 7

Now you may recall that all Z80 registers are eight-bit (that is, they can hold any eight-bit binary number – any value between 0 and 255) and some can pair together to form 16-bit registers (these can store any number between 0 and 65535). Applying these facts to the examples printed above, it shouldn't be hard to work out which are possible and which aren't.

The first, LD A,34, is feasible; the A register exists and the number following it is between the 0-to-255 limit. The second and third examples are impossible: LD D,267 because an 8-bit register can't store values above 255 and LD S,23 because there is no S register. LD BC,2523 is acceptable as register pairs

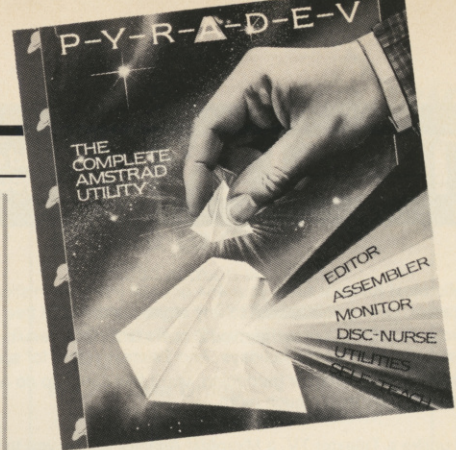
can hold any number between 0 and 65535 - 2523 lies in this range. The next example isn't allowed as 76553 is greater than 65535. The last, LD HL,7, is fine.

Assembler assessment

Unlike Basic, assembler can't be typed in at the Ready prompt. Well, it can, but the machine regurgitates it and brings up the nauseous Syntax error (*that's enough sick puns – ed*). What you need, if you wish to sample the delights of assembly programming, is an assembler. Several are available.

Maxam is arguably the friendliest and most popular of the various packages around. Arnor (0733 239011) are the people to contact. *Maxam* – the original assembler/monitor/editor for developing machine code programs – comes on cassette (£19.95), disk (£26.95) and ROM (£39.95) formats. *Maxam 1.5* is the ROM-only version that requires Protext to work correctly. Price: £29.95. *Maxam II*, £49.95, is the CPM Plus version.

Pyradev (sold under Gremlin's



Discovery label) or *Pyradev Plus* (available direct from Pyramid, 7 Belmont Park Ave, PO Box 765, Maidenhead, Berks, SL6 6YS for £19.50) are equally good, and have better debugging facilities. The plus version is designed for operation under CPM Plus.

Hold it right there! Why fork out £20 or more for a piece of software just to follow this article? It's ludicrous. Don't do it. Not until you're more experienced at assembler anyway. Pat has promised, haven't you Pat, to put an assembler on the next cover cassette. (And *First Bytes* can reveal exclusively that the next cassette is coming to AA very soon indeed!)

Peek and poke

These lewd-sounding Basic commands place values in, and retrieve values from, memory. Machine code programs exist by performing these simple functions. Only the A register and register pairs can be used to inspect/alter memory:

LD A, (87) LD A, (65431)
LD BC, (23) LD HL, (9879)

The first instruction translates to load the A register with the contents of memory location 87, place the number at memory location 87 in the A register or even peek location 87 and plonk whatever's there in the A register. Use the translation you find easiest to remember.

Note that the value in brackets can be any number from 0 to 65535 (the entire 64k memory range). The number plonked in the A register will be 8-bit: 0 to 255. The double register peek works in a similar way. Take, for instance, LD BC,(23): the B register will contain the value held in memory location 23 while C will hold the value in location 24.

The assembler equivalent to poking is simply a re-arrangement of the symbols making up the peek statement. For instance, turning the examples above on their head:

LD (87), A LD (65431), A
LD (23), BC LD (9879), HL

LD (87), A now means load memory location 87 with the contents of the A register, place the contents of the A register in memory location 87 or even poke location 87 with whatever's in the A register. Similarly for the paired-register example, LD (23), BC, location 23 is filled with the contents of B while location 24 is treated to C's contents.

Next month: assembler programming

Hackers only

– a section for the experienced programmer

How about a change from sensible things? You've seen those flashing borders that appear when cassette games load. Why not try making your own?

You have to change colours quickly – faster than the brain can cope with. Doing this through the firmware is a waste of time: it's too slow. One of the gate array's tasks is to look after colour switching. The port that accesses this wonder-chip is &7F00. First send one information byte to the port, that is, which ink pot you wish to modify. Then send the new colour byte – easy really.

For instance, the short routine below prints various characters in different inks and then starts flashing them. Useless, but pretty. Entry conditions: none. Exit conditions: AF, BC, DE, HL corrupt. Length: 61 bytes. Code type: relocatable.

```

call &bc0e           or c           ld a, d
ld bc, 500           jr nz, loop5   or e
loop5               ld bc, &1100   jr nz, loop1
push bc             loop2         pop bc
ld a, r             push bc        inc c
and 31              ld bc, &7f00   ld a, c
sub 15              ld de, &FFFF   ld (store), a
call &bb90           loop1         djnz loop2
ld a, r             ld a, (store)  ret
call &bb5d           out (c), a     store
pop bc              ld a, r        db 0
dec bc              out (c), a
ld a, b             dec de
    
```

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BAR CPM

First Steps – part one, with Richard Monteiro

If it wasn't for the fact that you have to type `RUN"filename"` to load a program, you might never know that Amsdos (the CPC's disk operating system) existed. The same is true for CPM. But this disk operating system (for that is what it is) can seem far more daunting and obscure. The reasons are several: it must be loaded from disk (Amsdos is present from the moment you switch on the micro), the Amstrad User Instructions skip by the subject very quickly, the commands aren't as obvious as Locomotive BASIC's friendly syntax and the messages that appear when you do something wrong are often less than informative.

It is said that we use less than 10% of our brain's potential: similarly the Amstrad's power is often underused and overlooked. Why not understand your micro's ability just that bit more? Why not have a go at learning to use CPM? It's not that hard, and you will benefit by being able to use the system on hundreds of other computers (and MS-DOS - the PC operating system - resembles CPM closely even if IBM won't admit it).

First steps

If you read our potted history last issue you should now have a vague idea of what it is for. But what good is its history if it doesn't teach you how to use the system? None. In the months to come *Bar CPM* is to include details on using the operating system for the first time, getting the most from the various programs lying idle on the system disks and how best to use CPM commands.

Two versions of CPM exist for the CPC: CPM 2.2 and CPM Plus (also called CPM 3.1). Version 2.2 is supplied with the 464 disk drive and 664 computer. Unsurprisingly CPM 3.1 is the more recent of the two; it was designed for Z80 machines with minimum memory configurations of 128k - into which category falls the 6128.

While the core commands are shared by both systems, CPM Plus has extensions and additions. The differences will be detailed when encountered.

Eager to get going? Right, enough waffle let's get on with it (*at last - ed*). Insert your CPM 2.2 (or CPM Plus) system disk into drive A and type `|CPM` (the `|` symbol shares a key with the `@` sign, to

the right of P) followed by a stab of the return key. After a few seconds of disk whirring you are presented with either 'CPM 2.2' or 'CPM 3.1' depending on which system you have. Get used to the 80-column display featuring the famous `A>` prompt; you'll be seeing a lot more of it.

At the `A>` prompt you can type characters (the same is true at BASIC's square cursor); CPM won't process these keyboard tinkering until the Return (enter) key is pressed or certain Control-plus-key sequences are hit. You can't enter any old nonsense though: type 4LKJHJ and press Return. After some disk activity the system will reply with 4LKJHJ? - its way of saying it doesn't understand what you entered (friendly, huh?). A limited set of commands exist. For instance, type `DIR` - short for DIRectory - and press Return. Assuming you have a disk in the drive you will get a catalogue of the disk's contents.

Dial dir for directory

You've learnt that the contents of disks can be viewed by issuing the command `DIR` from CPM. This innocent looking command, however, is capable of much more.

For example, files of a particular genre can be viewed:

`DIR *.COM [Return]`

(Note: anything between square brackets is an instruction to you, not an instruction to the computer. So the above means type `DIR *.COM` and press the Return key.) CPM obediently lists all disk files with the extension `COM`. The `*` is a *wildcard* character which CPM takes to mean any sequence of characters of any length.

The question mark (?) is another

wildcard character used by CPM. It takes the place of any symbol. Thus:

`DIR BARCPM.3?`

will list all files with name `BARCPM`, and extension 3 followed by any character.

You could type `DIR ????????.*` or `DIR *.*` or any combination of the two, but that would be pointless as you'd be asking the machine to list all the files on the disk - something `DIR` is quite capable of doing on its own.

That's it for this month. Next issue we shall explain CPM 3.1's extended `DIR` command and the various other CPM commands accessible from the `A>` prompt.

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ABSOLUTE BEGINNERS

Master Basic the gentle way

OK, how was it for you last time? The last change in the last issue (which the more astute will realise should have been `FOR a=2 TO 5` as opposed to `FOR a-2 TO 5!`) should have looped four times.

Right, onto the main business of the day – the correct printing of the value of a variable.

You see, that `a` between `FOR` and `=` in line 20 is a variable name. The `FOR` command needs a variable to count the number of times it's gone through the loop, and the `FOR a=` tells the Amstrad to use `a` as that variable. Modify your program so it looks like this:

```
10 CLS
20 FOR a= 2 TO 5
30 PRINT a
40 NEXT a
```

When you `RUN` this you get a series of numbers running from 2 to 5. Each of the numbers is the value of the variable `a` for one pass through the loop – one performance of the `PRINT` command in line 30. As you can see, the value of `a` starts off as 2, and goes up by one each time until it gets to 5. When your CPC finds the command `FOR a =` it sets `a` equal to the first number, runs through the loop,

A further example

Remember that program, a few months ago now, that dragged a square from one side of the screen, very slowly? It went as follows:

```
5 FOR a=0 TO 599
10 CLS:MOVE a, 180
20 DRAW a+40,180,1
30 DRAW a+40,220,1
40 DRAW a,220,1
50 DRAW a,180,1
60 NEXT a
```

You should have some idea of how this works now. We haven't covered that `a+ 40` business in lines 20 and 30, but this is more or less self-explanatory. It just tells the CPC to use 40 more than the value of `a` for the first number of the `DRAW` command.

increases the value of `a` by one, runs through the loop again and so on. It'll only stop once `a` is larger than the second number.

In this program, then, the machine sets `a` equal to 2 first time though. The

A quick summary

The commands `FOR` and `NEXT` work together to form loops. Your machine will perform the program command in between the `FOR` and the `NEXT` repeatedly.

The `FOR` command needs a variable name and two operands. (What? Operands is just a posh way of saying the values or numbers after a command.) These are laid out in the form `FOR variable = TO`. When the computer comes across the `FOR` command he makes the variable equal to the first operand. The variable is used to control the number of times the CPC performs the loop. Because of this it is called the loop variable. The second operand is in upper limit for the loop variable, and your computer dutifully stores it away for future reference.

The `NEXT` command just needs a variable name but it must be the same one you used in the `FOR` statement. When the Amstrad reaches the `NEXT` command it adds 1 to the loop variable, and compares it to the upper limit – the second value of the `FOR` command in other words. If the loop variable is still less than the upper limit, he runs through the loop again; otherwise, he carries on with the rest of the program.

If you are using the loop variable as a value of a command in the loop, like the way the moving square program uses `a` in those `MOVE` and `DRAW` commands, the `STEP` command can come in handy. This lets you change the step size of the loop – that is, the amount by which the `NEXT` command increases the loop variable each time. The machine will assume you only want to add one each time, unless you use `STEP` to tell it otherwise. Using `STEP`, the `FOR` command takes the form `FOR variable = x TO y STEP z`.

`NEXT` command tells it to run through the loop again using the `NEXT` value of `a` – which it gets by adding one to its current value. Thus it runs through the loop again, this time with `a` equal to 3. The same thing happens when `a` is equal to 4 and 5.

After the pass through the loop with `a` set to 5, the `NEXT` tells the machine to find the `NEXT` value of `a` again, ready for another pass through the loop. The `NEXT` value of `a` would be 6, however, and this is greater than the second number in the `FOR` command.

So instead of running through the loop again the computer carries on with the rest of the program. In this case there isn't any more program to carry on with so the CPC puts up `Ready` to let you know it has finished.

We can show what goes on even more clearly by adding these lines to the program, and running it again:

```
50 PRINT "That's the end of the loop"
60 PRINT a
```

You should now find that it `PRINTs` out the numbers 2 to 5, the end-of-loop message and then the number 6. This last is the value of `a` after your machine has finished with the loop. As we said before, this means it carries on with the rest of the program. So when it reaches `PRINT a` command in line 60, `a` still has the value 6 from the last line the CPC performed – the `NEXT` in line 40 – so that's the number that it `PRINTs` on the screen.

Step to it

One more thing I want to cover this month is the `STEP` command. Modify line 5 of the program above to read:

```
5 FOR a = 0 TO 599 STEP 10
```

Notice how much faster the square moves now? That's because the Amstrad is increasing `a` by 10 every time it goes through the loop, instead of the usual 1. That's what the `STEP` does for you – it tells the computer by how much the loop's `NEXT` command should increase `a`.

Part of one end

We've now come quite a long way. You should now know how to write simple programs to put text and graphics on the screen, and how to save yourself effort by making the CPC perform bits of your program repeatedly. Well done for getting this far!

You'll also have had a first look at what variables are, and what they can do for your programs. We'll be taking this a bit further. If things seem to get a bit complicated, bear in mind that variables are just letters or words used to stand in for numbers. Okay?

Next month we continue with the numbers game.

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Whizzkids!

The Darling brothers and the Oliver twins are all disgustingly young and sickeningly successful. Old Steve Carey went to Code Masters HQ to try and discover their secret.

AA: How did Code Masters start? How did you become involved in computers?

David Darling: The Darlings came over from Canada when Richard and I were in our early teens. We got a Vic 20 for Christmas and used it to program in our spare time. We also *made* extra spare time by avoiding certain things – school, for instance! We were always very interested in electronics, and computers seemed the ideal way to continue that without getting our fingers burnt on soldering irons...

Richard Darling: We had a big competition to see who could make the computer do the cleverest things and then we just progressed until we were using machine code and assemblers. Then we had enough games written to sell we set up a little company called Galactic Software and put adverts in *Popular Computing Weekly*... By that stage, there were sections in machine code but with the main structure still in Basic. We did a game called *The Games Designer*, which was the first thing we got into Boots – that was a big achievement at the time...

Next we exhibited at a show in 1984 at the Novotel near Hammersmith, and David and I were approached by Mastertronic and Commodore and Mirrorsoft and commissioned to write games for them as freelance writers. So Galactic Software gradually dropped away and David and I moved up to London to live in the apartment above the Mastertronic offices.

It was at this stage our father, who has been self-employed most of his life, decided he'd like to get involved. He knew a lot



● Richard and David Darling



● Code Masters HQ

about running a business and so on, and David and I knew about about writing software, so we thought it would make a good combination for us to make our own company rather than just writing as freelance authors.

Then we launched – or rather, we *planned* to launch at PCW in 1986, but we missed by two or three weeks. And on our way to the show we crashed the car. Well, actually, the lady in front decided to stop in the middle lane of a three lane road...

"The high-price guys like making cassettes for whatever it costs, 26p each, and selling it for £9.95 to the kids. There's a lot of very fat cats out there, and that's bad news. We're just undercutting them completely. It's fair, it's what capitalist society is all about."

– Mike Clark

RD: Anyway, when we eventually got to the show we found some programmers, the Olivers and quite a few others. We have them all on computer, a list of the best ones and we commission them for various projects. Some of them come up with original projects, though that doesn't happen very often...

AA: – all registered under the Data Protection Act, of course –

RD: Did I say computer? I mean, on *index cards*. No personal information at all. Erm...

"Our age is definitely an advantage, because people underestimate us. That means you can get into a winning business position and take them by surprise."

It's all a big game, and it's nice to win."

– David Darling

AA: So how many people do you have working with Code Masters?

RD: Well, altogether there's about 200 graphic artists, musicians and programmers – but obviously they're not all working for us full-time! They're people we've kept the details of and pick the best ones and use them for whatever we're working on.

MC: Actually working for us at the moment, it's hard to guess. In volume terms we've have nearly 50% of what we've got already in development, and we've got a huge series of launches coming on towards the end of this year, so there's more people actually working for us actively at the moment than there ever have been before.

Why don't more girls play computer games?

RD: The way games first started, with space invaders and tennis games and all that, they were all abstract ideas. I mean there is a difference between males and females –

AA: Well spotted Richard.

RD: – and girls don't see the point of just moving around little shapes on the screen to make funny things out of them. You have to get something from it. We need to produce games or programs which have a different appeal, which is what we're looking into. There are things which a computer can do which a girl would be interested in using it for.

MC: Not 'Doll's House Simulator'!

RD: This game here, *Superhero* – I think it's very good and I think our audience will like it, but it is a man walking around a fantasy world doing abstract things. Girls are more down to earth, and they don't see any point. Why bother? There's no ultimate goal to it.

MC: There are differences, surely. Girls are more concentrated emotionally, while we chaps like to do technical things, I suppose.

RD: I guess you could say computers are very un-personal and un-social.

MC: Girls just aren't impressed by computers and all that. It's a useless chat-up line in bars to say, 'Hi, I'm a computer programmer' – it just doesn't work!

BE: We're thinking of specifically targeted products, three day eventing or something like that. There's a market there, half the population isn't being reached.



AA: Do you program much now?

RD: Not enough. The last game I finished was *Pro BMX*, which was in February.

AA: Does that bother you?

RD: Yes it does. I'm intending to spend more time on it now.

DD: There just isn't enough time. But we'd like to, because you get left behind very quickly: you have to be programming all the time to do state of the art stuff.

MC: It's a major problem: God just didn't put enough hours in the days. We've discovered recently that it's not how much money you have, it's time.

RD: Unfortunately most of the games we get sent, even if they try and send them to us as a finished product, we can only use it as a demo of their ability so that we

MC: It's interesting that all the programmers are our age, give or take a couple of years.

RD: That's the age group that could go from nothing to writing something that was publishable in six months, which isn't too big a slice of time. But nowadays, for someone with the same ability it would take a couple of years, because there's just so much experience about. I don't think there's any less ability.

AA: Do you see a problem in the future?

RD: I think young programmers need help, they need to be in close contact with a software house. And I think to be honest we try to do that. If someone sends us a game, and it's not marketable for some reason, we always try to tell them why.

AA: What are the usual faults?

news. We're just undercutting them completely. It's fair, it's what capitalist society is all about.

RD: This game we've got on the screen here, for example [*Superhero by Bernie Drummond*] was submitted to us and to

"Probably half the games sent in are a waste of time... But it's very unfair, most of them are as good as the first games we sold in 82, '83."

David Darling

two high-price companies, and we outbid them. We're publishing it at £1.99, and they would have sold it at £10. We've actually spent two or three months improving it.

BE: You've got to have quality games, that's fundamental. When you see some of

The Darlings on their programmers

AA: How do you manage to keep your programmers?

RD: Well, one difference between us and other companies, I think, is that all of us are either active or ex-programmers. So if we accept a game and there's something wrong with it, we know whether it's very easy or very difficult to fix; and if there's something we'd like, we know if it's going to be just a few pokes or three weeks' work. That makes it a lot easier to turn out good games, because we know – we don't just have to rely on what the programmer

says. And of course we also offer quite a lot of technical support.

AA: You're unusual in that you know what you're talking about?

RD: Yes, I think so. In the other companies you have someone employed as a Software Acquisition Manager and they haven't programmed. You see it can work both ways. The programmer can trick the company by saying, 'Oh no that's impossible', and the company can inadvertently be very cruel to the programmers by saying, 'We need this changing', when

it's only a very minor difference but it'll take three weeks' work to do it. You just can't tell, unless you actually know how a game works – a lot of things that look really easy are very difficult.

MC: And also the thing that kept me coming back is the deal Code Masters offer. I was a programmer, wrote five games, sold all of them to Code Masters and then I looked around –

RD: You did? You didn't tell me about that!

MC: – yeah I did, and I just couldn't get a better deal.

AA: Is that part of your policy, to try and nurture particular

programmers?

RD: Yes. Ongoing programmers are much better, and in fact we offer them higher royalties. It makes it much easier if you know somebody. If they do a game and we say, 'No, we don't like it', they know they can go somewhere else with it. It hasn't happened yet, but it makes it easier for both sides.

DD: In-house programmers are a problem in some ways, I think. The incentives are all wrong. They're being paid full time and don't necessarily have the right motivation to achieve the same goals, to get a thing finished and ready for marketing.

might be able to commission something completely new from them. Because of our sales and marketing, there's only a certain variety of games we can put through the production line, and it's very unlikely that anything we get would fit the bill.

AA: Do you get sent heaps and heaps?

RD: Two or three a day.

AA: How many are completely useless and a waste of time, and how many lead to you commissioning games?

RD: Probably half are a waste of time... But it's very unfair, most of them are as good as the first games that we sold about 1982, '83. Most of them are up to that standard, but nowadays the standard is so much higher that it's very difficult for anyone to break into it. To start from nothing and produce a saleable game without outside help is very difficult indeed nowadays.

RD: Probably the main fault is the copying of other games that already exist. For example, after the PCW show last year we had six *Arkanoid* games sent to us and we just had to say, 'No, sorry, can't use it'.

MC: We've got racks full of implementations of *Nemesis*. One arrived today... But we do take gambles on people, you get a hunch that they're a good programmer. And a lot of them make the grade. I don't think we'll have any problem with programmers in the future.

MC: The high-price guys like making cassettes for whatever it costs, 26p each, and selling it for £9.95 to the kids. There's a lot of very fat cats out there, and that's bad

the rubbish that some of the so-called full-price houses are fobbing off at £9.99 on their customers, it's appalling, disgusting. It's amoral. I know that's changing. There's been an enormous increase in product quality over the last six months, and I think we're partially responsible. We produce good stuff at £1.99, so anybody who wants to go out at £9.99 has to try and make it at least as good as ours. And anything that isn't looks pretty silly.

BE: Our games have a wide age-group appeal. David and Richard and their friends are in their twenties, so the games obviously appeal to that group, but at the same time they're played by John and Annie, who are four, and William who's eight – you might have seen him playing *ATV Simulator* on *Get Fresh* [*Sunday 17th July*]. That's where the Code Masters playability comes from.





● David and Phillip... Phillip and David... Er, the Oliver twins

AA: How did it all start?

Phillip Oliver: We started off with a strategy game in Basic, *Gambit*, which must have sold all of about 50 copies! We wrote it for a TV competition on *The Saturday Show* and won first prize. That was when we were in the fifth year, about four years ago or five was it? It wasn't fast – it took about half an hour to set up the screen!

"Code Masters wanted us to do another simulator after Grand Prix Simulator, so while we did Dizzy we did Skiing to keep them happy. We did both of them at the same time, last summer holidays. One was to keep them happy and the other was keeping us happy."
– Phillip Oliver

Andrew Oliver: Part of the prize was supposed to be getting the game published, but they didn't do anything about it so we took it away and showed it to some people. We told them it had been on TV and all that, and that attracted the interest of

publishers. So Acornsoft, who were the biggest people at the time, agreed to market it.

Then we decided we had to learn machine code and wrote another game. But Acornsoft got bought up so we kept the advance and the game never got published! That was during our O-levels.

Next when we were in the sixth form we wrote an art package for Tony Rainbird but then OCP sent him a better one. We bought a nice car with the advance but the package never appeared. So we took it elsewhere.

AO: And we got ripped off good and proper.

PO: It was pitiful. That was a whole year.

[Nothing was paid for copies sold abroad, and the Oliver twins claim that no serious attempt was made to sell in

Britain, so royalties could be avoided.]

PO: We were on the point of giving up. But at the PCW Show in September of '86 we met Richard and David Darling and discussed *Robin Hood*.

Then we went down to Mastertronic, and they just took the piss out of it. It's crap, they said, go away. That was the opinion of most people, but Codemasters saw it and loved it and offered us lots and lots of money. So we decided to leave school and set up as professional programmers.

[The success of Robin Hood was soon followed by Ghost Hunters, Grand Prix, Dizzy, Skiing, 3D Starfighter, and Jetfighter. More recently they have written The Race Against Time, Fruit Machine Simulator and others.]

AA: How long does it take to write a game from start to finish?

PO: Take *Robin Hood* as an example. We set ourselves the target of finishing it in a

On Fruit Machine Simulator

The Darlings

AA: What do you think when you get terrible reviews like *FMS*?

RD: All the magazines said 'What's the point of playing a fruit machine if you can't win any money?' That's very unfair because the game is a very good one.

It's very obvious from the packaging what it is and that you can't win money from it, obviously, so you can say that but then you should review the game and its qualities.

BE: Shopkeepers say kids come in asking about games, and the shopkeeper says it's won such-and-such an accolade, and the kid says, 'Yeah but what's it really like?'

The Oliver twins

PO: I don't know if you should print this, but Code Masters said, 'We've got a brilliant idea for a simulator – FRUIT MACHINE'. We said, 'Don't be stupid!' and went back to what we were doing.

AO: It was James Wilson, their artist, who wrote the whole game as a description. He wasn't a programmer, but it was a pretty good description – pages of it. A really weird way of doing it.

PO: When it came out on the Spectrum, sales were huge. Then James died in an accident after designing it. He was supposed to be working for us. The royalties were going to Jim's family, so we said we'd do it. And of course it's sold heaps.

On the CPC

The Darling brothers

DD: We've concentrated on Amstrad when sometimes other people haven't, and that's paid off. Even though the Amstrad market perhaps isn't that great, we have a following of people so that when we release our next Amstrad game people automatically buy it.

For us it's still a very good format, and we will definitely continue to produce games for it. Indeed I think the Amstrad is probably more important than the 64 for us.

RD: We're going to move into disk versions of games on the Amstrad. Price we're not sure about, but we always want to go for the lowest feasible price – it's the high price of the disk that's the limiting thing.

The Oliver twins

PO: Everyone seems to hate the Amstrad. Firebird said, 'Amstrad? Dead – we'll release it but it won't make any money'. But our royalty statements show there's a lot of money on the Amstrad.

AO: Everyone's going ST and Amiga mad at the moment, but the sales figures are pathetic compared to the Amstrad. OK so the games cost more and the royalties per game are bigger: but there's more memory, more graphics – most cases you've got to get in an artist because the programmer can't do it all.

PO: We're getting geared up for the 16-bit machines so we should have something out by Christmas. But we'll have stuff out for the CPC at Christmas, too: we're not going to ignore it.

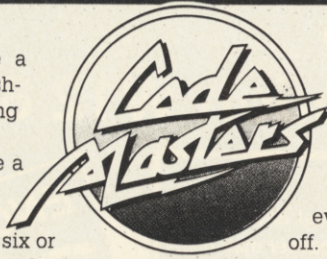
month. I worked on the movement of the man and the other things, and the arrows. Andrew worked on setting up the background, the scoring system, the high score grid and drawing a map. The two departments are not too interactive. In actual code, there is no interaction.

AO: Then we thought we'd do another one, only less sappy this time. More Rambo-ish. Hence *Ghostbusters*, which didn't do nearly so well, funnily enough. I think it's much better.

AA: What about design?

"Best game on the Amstrad (besides ours, of course)? – Ikari Warriors. Brilliant, and great programming. Good fun too. We actually went and bought it, and we still play it now. We finished it too."

– Phillip Oliver



PO: We spend maybe a week when we're finishing one project thinking about the next.

AA: If these things take a month or whatever to write, don't you have any hankering to spend six or eight months writing a real mega-game, an *Elite* or something?

AO: Nah, boring.

PO: We halve the time anyway, because there's two of us working on it. Also the more games we release the more we sell. If people buy one and like it they'll want to buy more games we write.

AA: You use Maxam, yes?

PO: We used to. Up until *Race Against Time*, then we bought a really powerful IBM clone that runs at 16Mhz or something. Code Masters sent it to us. It makes games run fast - you should see *Elite* on it! We've got this pinball game and you can't see the ball on it.

We use that and we use the assembler PDS, Programmer's Development System. You just put the card in an IBM clone, lead it out to your Amstrad or whatever, type it in, it assembles very very quickly and it just copies out of memory straight across to the Amstrad. Maxam used to take about five minutes to assemble: this thing takes seconds.

AO: We still take the same time, but it allows us to work more on a game. Changing things is so simple.

AO: You don't need to spend ages to make a game good. *Pro BMX* is good, and we didn't spend too long over that.

PO: If we spent six months over a game we couldn't build a reputation. We try to

AO: We're not famous as individuals. The name is famous, rather than us.

AO: On the front of *Jet Bike Simulator* it said, 'By the famous Oliver twins', which was Bruce Everiss doing it as a joke. Now all the mail we get at Code Masters is addressed to 'The Famous Oliver Twins!'

PO: We got one the other day to 'The Fairly Well Known Oliver Twins!'

AO: The Oliver twins label sells games.

pump them out really quick so we can build up a reputation, a following. People like Jeff Minter, their games are rubbish, but people say, 'It's a Jeff Minter game, let's buy it.'

AA: After your unhappy experiences do you have a solicitor now?

PO: Yes, we have a solicitor and an accountant to look after us. If people tried to rip us off now we'd have a hell of a lot

more clout.

AA: What advice would you offer young programmers?

PO: Well, we thought we were being really careful. We spoke to people and looked around and everything, and still got ripped off. Our advice, probably, is to steer clear of the computer industry! They assume all programmers are schoolkids, and they just know you can't afford to take them to court.

AO: Our accountant advised us to take on a mortgage.

AA: How do you feel about taking on a mortgage at your age?

AO: We could actually pay it off in one go anyway, but he says we'd be better off getting the joint mortgage tax relief.

AA: What are you going to be doing in five years' time?

PO: Retire! No, our parents asked us that, they threatened to kick us out of the house if we carried on writing computer games. They say, 'No way should you be running a business at your age'. They thought we should go to university and build for the future.

But there are lots of people with degrees who can't get jobs - what employers want is experience.



Do you want to be a Code Master?

Code Masters are looking for someone to work for them!

But before you rush off to write your application, to be eligible you must have wide experience in the computer games industry. They are looking for someone who has had machine code games published.

If you can honestly say you fit the bill, write to: **Code Masters, Lower Farm House, Stoneythorpe, Southam, Warcs CV33 ODL.**

If you send your application to AA you're obviously thick and you won't get the job.

AO: There's no reason why we shouldn't still be doing this. People will still be buying games, we'll still be selling them.

On the Darlings

PO: Richard and David are our age, they write games and they're on our level. Whereas Mastertronics have this 50 year old bloke who doesn't give a sod so long as he can get his cassettes into the shops. He doesn't care what's on it.

AO: Richard and David care about the programmers, they don't have this attitude that there'll always be another schoolkid coming along. They themselves were programmers being ripped off one time, and they could say to us, 'We know what it's like'. And the other attitude is so short-sighted, because you'll lose anybody who's any good. I don't think Code Masters have lost anybody yet.

AA: You trust them?

PO: You have to. I trust them more than

I trust anybody else in the industry. They're in a powerful position, if they wanted to rip us off they are capable of doing it. But they have always had the policy of acting innocently. We've never caught them out in anything, so I trust them more than anyone else. Everybody else I've ever dealt with in the industry, I've found they're doing something. We've dealt with lots of people, and talked to others who've also been ripped off. It's an amazing industry.

AO: There's another reason why we trust Code Masters. Our programming skill is matched by loads of other people, but if you ask them how much money they've got it's pitiful compared with how much we've got. That's why we keep writing for Code Masters.

What a giveaway!

The latest Code Masters title, *Professional Soccer Simulator*, is so new that the packaging has not yet been devised, so we can't show you the cover. What we can tell you is that it's a Code Masters Plus game which will be in the shops at £4.99 and features eleven a side on one tape in both standard and expert versions; and street soccer, indoor soccer and soccer skills on the second tape.

And we're giving away 50 copies! Simply write with your name and address to: **Code Masters, Amstrad Action, 4 Queen St, Bath, Avon, BA1 1EJ.**

In addition two lucky winners will each receive one of the exclusive Code Masters teeshirts - as worn by David Darling on TV: one on *Number 73*, and the other on *Get Fresh*. But don't worry, he's promised to wash them first!

AA helpline

Machine code, hacking, writing RSX's and ROM's. Maxam 1.5, Protex, RODOS, DMP2000, DDI-1.
Matt Cawley, 42 Hamilton Ave, Sandycroft, Deeside, Clywyd CH5 2PB

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Steven Flynn, 76 Dunlop Rd, Tilbury, Essex RM18 7AU

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Paul Scott, 13 Kiln Crescent, Bishop Middleham, Co Durham DL17 9AP

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James (11) ☎ (0458) 73926

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AA type-ins, Basic, DMP 2000, Adventure programming, Laser Basic, screen dumps, most football games.

Adrian Sill, 19 Sherwood Drive, 5 Lane Ends, Skelton, Doncaster, South Yorkshire DN6 8NY

Will supply disk of windows for use with Advanced OCP art Studio containing software logos, game logos, title screens. Free if disk sent or disk for £2.75.
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Matchday II, Buggy Boy, Tetris, Nigel Mansell's Grand Prix, Soccer Boss, Jet Bike Simulator, Super Stunt Man.

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Solving Basic bug, most machine code programs. Enclose listing + description of program +) If poss

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Paul Jones, 78 Fitzwilliam Street, Swinton, Rotherham, S.Yorkshire, S64 8RW

Converting programs for the Vortex disk drive. Simple machine code. Hacking. CP/M programs & utilities. A whole bunch of public domain programs.

Mark de Bont, de Foes 15, 5581 AP, Waalre, Holland, ☎ (04904) 13963

Radzone, Ghosts and Goblins, Knight Tyme, Dragons Lair, Green Beret, Gauntlet, Feud, Starquake (codes), Boulder, Boggit.

David Brooke, 8 Birkby Grove, Bilton Grange, Hull, HU9 4PZ

Knight Tyme, Spellbound, machine code, Basic, Word Perfect, Melbourne Draw, GAC, pokes, maps, hacking, DMP 2000 problems, games development using GAC, word-processing, graphics (screen dumps), all CPC games. Can also print program listings for a 40p postal order. How to do pokes and problems using modems. (I have a Voyager 7)

Guy Sicka, 78 Chesterfield Road, High Barnet, Herts, EN5 2RF. ☎ (01) 441 5612

Basic programming, some machine code.

Paul Bower, Elm Gable, Hermitage, Newbury, Berks. RG16 9SA. ☎ (0635) 200891

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Bombjack, Green Beret, Doomdarks Revenge, Lords

of Midnight, Thrust, Barbarian, Kung Fu Master, Elite, Hunchback, Feud, Everyone's a Wally, Who Dares Wins 2, Grand Prix Simulator, Kane, Hyperbowl, Ikari Warriors, Fist, Yie Ar Kung Fu, Bruce Lee, Jack the Nipper, Fourth Protocol (part one only), Knight Tyme, Ghsot n' Goblins.

Paul Crich, 33 Hills Road, Strathaven, Lanarkshire, ML10 6LQ. ☎ (0357) 29606

Gauntlet 1+2, Green Beret, Bombjack 1+2, Zub, Starquake, Equinox, Boulder, Space Harrier, Exolon, Elite, Tau Ceti, Trapdoor, Star Wars Freddy Hardest, Batman, Head Over Heels, I Ball II, Popeye, Firelord, MK Trilogy, L.O.M., Antiriad, Split personalities, Renegade, Motos, Tempest, Mikie, Ninja.

David Howlett, 53 St Marys Avenue, Alverstoke, Gosport, Hants, PO12 2HU

Raid, 180, Star Raiders II, Beach Head II, Death Wake, Sir Lancelot, Footballer of the Year, Nonteraqueous, 3D Boxing, SD Snooker, GP Simulator, Leaderboard, Desert Fox, Super Cycle, Aliens, Champ Basketball, Champ Baseball

Michael Dickinson, 281 Tyldesley Road, Atherton, M29 9AL

Ranarama, Exolon, Zynaps, Alien 8, Head over Heels, Jack the Nipper, Batman, Thundercats, Super Robin Hood, Feud, Stormbringer, Ghost Hunters, Galvan, The Great Escape. Plus maps for loads of games, send a list of 5 games max to be mapped free.

Martin Grover, 11 The Croft, Lower Dicker, Hailsham, East Sussex, BN27 4BS

Stop Press, Extra-Extra, Sorcery+, Ikari Warriors, Knight Lore, Barbarian, 1942, Who Dares Wins II, Bomb Jack, Bomb Jack II, Exolon, Seastalker, Asphalt, Gauntlet, Gauntlet II, Protex, Prospell and the DMP 2000. I also have lots of pokes and maps.

Pal Kroger, Bergjevegen 62, N-4056 Tanager, Norway

Mini Office I (program that removes all bugs, send SAE), business program (word processor, spreadsheet, graph display etc.) written by myself, send cass or disk and SAE, Deflektor, Gauntlet II, Matchday II.

Paul Graves, 46 Queens Road, Ash, Canterbury, Kent

Basic programming, machine code programming, firmware calls, Amsdos calls + accessing them, adding second drives (3in + 5.25in), tape loading problems, multiface two, printer problems.

Kevin Bryant, Jessamine Cottage, Chapel Lane, Ashford Hill, Newbury, Berks. ☎ Tadley 71792

Programming in basic (mostly utilities), Protex, Toolkit (Beebugsoft), DMP 2000, Utopia, Printmaster, listings 15p (draft) or 30p (NLO), Artwork (Kuma), tape only.

Matthew Cawley, 42 Hamilton Av, Sandycroft, Deeside, Clwyd, CH5 2PB

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ACTION TEST

All the best new CPC games

The Bard's Tale finally arrives – and cruises in as *Master-game*. But is it role-playing?

We begin, though, with a new Code Masters simulator (shock horror).

Also this month: *Football Manager*, the first of its kind,

returns; *Mickey Mouse*; *Night Raider*; *Street Sports Basketball*; *Chubby Gristle* – as gruesome as his name suggests – *Night Raider* and the curiously named *Psycho Pigs UXB*. What will they think of next?

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PRO BMX

Codemasters Plus ● £4.99 cass
joystick/keys

The latest Oliver twins project is an update of Richard Darling's *BMX Simulator*, reviewed in AA21. The scenario is almost identical, with the major difference the number of players. The original had up to two players, but now you can have three on keyboard and one on joystick – it could get crowded! (If there are fewer than four players the others are computer controlled.)

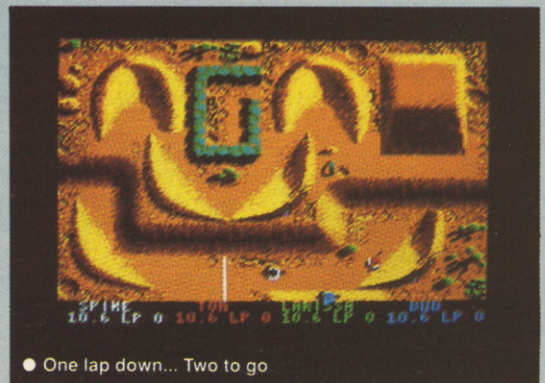
Across the bottom of the screen are the names of, and times for, the four bikers, while the rest of the screen gives a bird's eye view of the course. Each biker is a different colour, and not surprisingly they are also viewed from above.

Your objective is to complete each track within a predetermined time limit. The first track must be completed within 100 seconds, a limit which decreases considerably on subsequent courses. The first track is no problem to complete, but life soon becomes more difficult.

Each track has of mounds of earth, hay bales, metal barriers and a variety of other hazardous objects. Earth piles dis-

rupt the bike's trajectory and the other objects send you flying over the handle bars. When you're knocked off you lose valuable time and remount facing in a random direction. On the first course you can afford to crash many times, but by the time you reach the third track one crash can end your game. If a human player fails to qualify he's replaced by a computer biker, until all the humans are out.

As with the previous Codemasters Plus, *The Race Against Time*, you get two cassettes for your fiver. The first contains the standard version on one side, and the expert version on the other. (The latter is tougher, but offers a choice of tyre widths and chainwheel sizes. Narrow tyres allow you to move faster, but they're not as good for turning corners. Small chainwheel sizes give you better acceleration, but a lower



● One lap down... Two to go

top speed. Riders can bump into each other in the expert version too.)

The second tape has two sets of extra courses – quarry and desert – that can be loaded into either standard or expert game. The final track in each set can't be raced unless you're playing the expert version of the game.

The background graphics that represent each course are detailed and colourful, but it has to be said that the bikes are small and sometimes it's difficult working out which way you're facing.

Green screen owners are going to have difficulty working out which bike is which. And don't expect digitised speech in this one – apparently there wasn't enough memory left. Sound effects are crude, but an excellent tune plays on the title screen.

The first few games are miserable, because of the tricky control of the bikes, but practice does make perfect. It looks and plays very much like *Jet Bike Simulator* – another in the Codemasters stable – and possesses the same frustrating and addictive qualities. The extra courses extend the game's life. Altogether *Pro BMX* is nothing new, but the four player option makes it immensely enjoyable. Once you've completed it you're unlikely to play again, unless it's against other human players. **GBH**

FIRST DAY TARGET
Complete four tracks

The Verdict

GRAPHICS67%

- Bright and colourful backgrounds.
- Bikes are a little small.

SONICS38%

- Excellent title tune.
- Feeble in game effects.

GRAB FACTOR53%

- The option of up to four players adds to the fun.
- Very difficult to control initially.

STAYING POWER74%

- Two versions of the game, standard and expert.
- Three different sets of courses. extend the game's life.

AA RATING74%

- Well worth a fiver – more than can be said of many full price titles.

SECOND OPINION

"Definitely good enough to stand on its own. It appears the graphics haven't been touched up for the CPC – this is particularly noticeable on the large player views.

Gripping apart, the bikes can turn on a sixpence, which makes the game quite fun. I've seen less enjoyable full price games. Oh yeah, one final thing: why can't you change the names of the players?" **PbM**

GREEN SCREEN:
Identifying bikes is tricky

THE BARD'S TALE

Electronic Arts • £8.95 cass, £14.95 disk keys only

MASTER GAME



Role-playing games have been around for well over ten years now, ever since Dungeons and Dragons back in 1974. They are set in many different times and places: fantasy is by far the most popular, but there are also science fiction, gothic horror and even cartoon settings. In their original form, they are played by a group of people - from two upwards, though four or more is better - one of whom is a 'Games Master' (GM) controlling the opposition to the players and the world in which they live. The players decide what they want their characters to do and dice are usually rolled to determine whether or not they succeed. For more information see Iain Livingstone's *Dicing with Dragons* (RKP, £6.95, ISBN 0-71100-946-63), or find a local club (universities are teeming with them).

The term 'role-playing game' has been has been bandied around very loosely and linked with many computer games. But a group of adventurers wandering around killing things doesn't constitute a role-playing game, whatever the software houses try to tell you.

Swords and Sorcery by PSS, *Wizard Warz* by US Gold, *Mandragore* by Infogrames and *Ring of Darkness* by Wintersoft all claimed to be role-playing games, but none is more than a standard hack and slay: go into room, kill monsters, take treasure.

A role-playing character is a person with emotions, strengths and weaknesses just like you or me. After you've played a character for a while you get to think like him or her and know what they would do in any situation. So far no company has managed to translate that freedom and sophistication of role-playing to computer. It was hoped that *Advanced Dungeons and Dragons* (AD&D) would correct this. *Pool of Radiance* was planned as the first AD&D game, but since it's not coming out on the CPC we must look elsewhere for true role-playing.

And so to the crucial question: have Electronic Arts, with *The Bard's Tale*, produced a role-playing game - or is it just another hack and slay?



each for your sword! Grab your staff! Don your armour! Yes, it's time to go adventuring. Skara Brae is under the domination of the evil wizard Mangar and you (you reckless, heroic person you) vol-

unteer to free the town of his control.

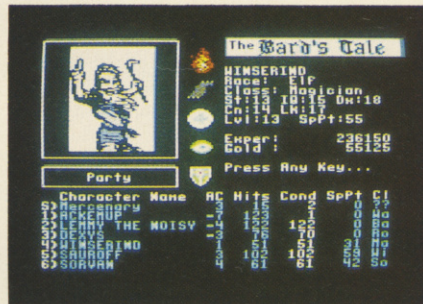
Begin at the Adventurer's Guild by creating a six-pack of heroes in a quaint form of genetic engineering. There's a ready made group, but really it's much more fun starting from scratch. Each member is

from one of seven races - human, elf, dwarf, hobbit, half-elf, half orc and gnome - and from one of ten classes - warrior, paladin, rogue, hunter, monk, bard, conjurer, magician, sorcerer and wizard. At start of play each member of the party can be any character class except for sorcerer and wizard.

There are three main windows: graphics, text and character. The graphics window shows your location, any monsters present or the currently selected character. The text window displays detailed information on the character selected,

Class distinctions

- The *warrior* is a poor persecuted individual who always ends up in the front row hacking away at monsters and getting hacked in the process. He suffers no restrictions on armour and can use virtually any weapon.
- A *paladin* is a warrior sworn to destroy evil wherever it's found. He uses all the weapons that a warrior does and possesses a resistance to evil magic.
- The *rogue* prefers stealth to combat and has the rather useful ability to find and remove traps on treasure chests.
- The *hunter* is another warrior type who can strike a special kind of blow known as a critical which slays an opponent instantly.
- The *monk* is heavily into martial arts. He fights with hands and feet and gets more lethal as he progresses.
- The *bard* is another subclass of the warrior, but he can also play musical instruments and sing, with an effect similar to some of the magical spells.
- The *conjurer* casts spells and specialises in creation and healing.
- The *magicians* deals with enchantments that makes the recipient harder to hit or increases weapon power.
- The *sorcerer* creates illusions and uses mind-affecting magic.
- Finally, the *Wizard* has power over undead creatures and demons.



● It's taken a long time to get there, but now WINSERIND can cast seventh level magic spells



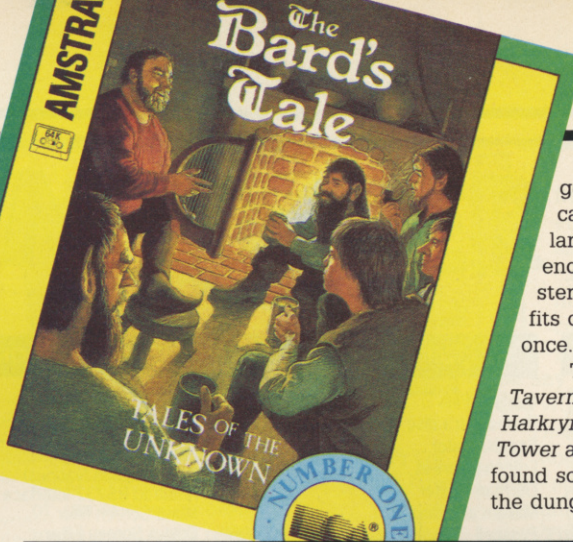
● The Review Board is the place to go for training

together with menus and messages. The character window gives the basic information on each character. A space between the text and graphics windows shows spell icons.

Five primary statistics, on a scale of one to 18, determine how good the character is in its chosen profession: strength, intelligence, dexterity, constitution and luck. Three secondary statistics are dependent on the primaries: armour class,

Race relations

- *Humans* are the standard on which all others are based.
- *Elves* make excellent spell casters but are weaker than humans.
- *Dwarves* are strong and resilient but lack brains. Make excellent warriors.
- *Hobbits* are stealthy and dextrous: ideal candidates for rogues.
- *Half-Elves* are the offspring of human and elf. Combine strength and magical ability.
- *Half-Orcs* are the result of breeding between orcs and humans. Ugly and stupid, but make up for it in strength.
- *Gnomes* are more magically gifted than dwarves.



hit points and spell points. Condition is your current amount of hit points. Should you have the lack of luck or foresight to allow your hit points to fall below one the character dies.

Every character begins with zero experience points and at first level. Characters gain experience from killing monsters and when enough are gained you increase your level. A second level character requires 2000 experience points, but the higher the character's level the more experience points you need to go further. To gain a level you must find the Review Board who train you to your next level. Spell casters know the first level spells in their chosen profession of magician or conjurer.

geons holding more treasure, magical items and monsters in much larger quantities. Here you'll first encounter multiple groups of monsters at a time and discover the benefits of spells that affect several foes at once.

There are five dungeons in all: the Tavern, the Mad God's Catacombs, Harkryn's Castle, Kylearan's Amber Tower and Mangars Tower. The Tavern is found south of the Samurai and you enter the dungeon by ordering wine there. (You



Garth's shoppe sells a wide variety of equipment.



A code reminds you of the character's class source of light enables you to see

There are seven levels of spells in each class. Extra spell levels are gained every time the character gains two levels. Training is free, but extra spell levels cost money, with high level spells coming very expensive indeed. When a spell caster has attained three or more spell levels in his original class he can change to another. The sorcerer, conjurer and magician can be chosen as a second class and any can be chosen as a third or fourth class. A spell caster that can cast all seven levels of spells in the four classes is called an Archmage.

Information on monsters, characters and your location

A special - a monster fighting for the party

Armour class determines how difficult they are to hit

The Bard's Tale

You face death itself in the form of: 28 Zombies.

Will your stalwart band fight or run?

Zombies

Character Name	AC	Hits	Cond	SpPt	CI
Red dragon	11	133	334	1	0000
ACKEMUP	11	133	334	1	0000
LENNY THE MOISY	11	133	334	1	0000
DEXYS	11	133	334	1	0000
WINSERIND	11	133	334	1	0000
SAUROFF	11	133	334	1	0000
SORVAM	11	133	334	1	0000

The character's hit points. Ackemup's had it

Party members are listed here

Spell points are spent casting spells

The labyrinthine town of Skara Brae has many buildings to explore. Some are empty, while others contain monsters. Apart from the Adventurer's Guild there are several other buildings of use to you. Garth's Equipment Shoppe is the place to go to buy or sell goods. He stocks weapons, armour, torches and musical instruments. Taverns are essential if you have a bard in the party, because if his throat gets dry he can't sing. Temples are places of healing where you can go to have characters healed or even resurrected. Finally there's Roscoe's Energy Emporium where your spell casters can have their magic points recharged rapidly - at a price, naturally. If Roscoe is too expensive you can wait for them to be replenished.

Scattered around the town are several statues of ogre lords, giants, golems, samurai and a dragon. They are guardians to parts of the town and the only way past is by killing them. The dragon is the deadliest, because he breathes fire and can fry the entire party in a single puff. The sealed off sections of town contain dun-

- ### View of points
- A character with a high strength (ST) value causes more damage with any blows from hands or weapons.
 - High intelligence (IQ) determines how many points a spell caster has to cast spells with.
 - The greater your dexterity (DX) the more likely you are to strike first blow and you're also harder to hit.
 - A high constitution (CN) means you have more hit points which makes you more difficult to kill.
 - Luck (LK) gives you a better chance of avoiding traps and evil magic.
 - Your armour class (AC) determines how easy or difficult you are to hit, 10 is easy to hit and -10 is very difficult.
 - Hit points (HITS) are the amount of damage you can take before dying.
 - Spell points are used to cast spells. More powerful spells cost more points.

SECOND OPINION

"I must admit that at first this game was very confusing. After some ten minutes my first party had bitten the dust. Gradually you build up a degree of skill at the game, using your mind rather than your fingers.

If future releases in this genre can come up to the standard of Bard's Tale then I can see them gaining a cult following." **PbM**

GREEN SCREEN: Excellent



● Beware of the fire-breathing dragon



are well advised to have some fourth level characters before entering the Cellars.) There is an exit to the Sewers in the Cellars and fifth level characters are advisable before you venture into them. Mangar's tower is the last place that you want to go and you need to be very high level to take on that.

Don't expect stunning graphics. You can tell what the monsters are supposed to be, but they're not brilliantly drawn. Sound is limited to footsteps and tunes played by the Bard.

The game is multi-load and comes on two cassettes or one disk. If you want a game of largely mindless violence with the merest hint of role-playing then take a look at this. **GBH**

FIRST DAY TARGET

Get a party of third level characters

The Verdict

GRAPHICS43%

- The monsters are easy to identify...
- but there aren't many different types.

SONICS54%

- The Bard's tunes are excellent.

GRAB FACTOR91%

- The ability to create your own adventurers gives it a little more appeal.
- There's more to this than a mere shoot-'em-up and you certainly get value for money.

STAYING POWER87%

- As your characters gain experience you become attached to them and fear for their safety.
- Creating high level characters is a long term task.

AA RATING90%

- Not role-playing, but nonetheless a very entertaining game.

NIGHT RAIDER

Gremlin ● £9.99 cass, £14.99 disk joystick or keys

You have a choice of practice, or flying missions. Take plenty of practice at the controls of the Grumman Avenger, the plane that makes the attack on the Bismarck. Practice is split into four sections: take off, landing, flying and attacking the Bismarck.

The Verdict

GRAPHICS45%

- Control panels are done very well.
- Colour could be better.

SONICS23%

- Simple engine and gun effects.

GRAB FACTOR65%

- Practice mode gives you the chance to prepare for the missions.
- You can just play the practice options if all you want to do is blow things up.

STAYING POWER74%

- Missions of varying difficulty.
- After completing them all you may not want to play again.

AA RATING69%

- One of the better recent simulations.

The Bismarck, armed with eight 38cm and six 15cm guns and six Arado Ar 196 seaplanes, was one of the most feared German battleships of World War II. The Allied search for it was a high priority and she was eventually found on May 20th 1941. The Royal Navy was despatched to sink her, catching up on May 24th. Six British destroyers, the cruiser HMS Hood and the battleship Prince of Wales attacked, and Hood went to the bottom of the ocean as a result. The attack was effective, though: the Bismarck's port rudder was hit, making her a sitting target as the stricken ship circled slowly around.

On the pilot screen you control the plane's direction with the joystick, but when anything comes at you, you can switch to a forward gun. The engineer's screen has a large array of instruments that give information on your engines, undercarriage, fuel, wings and torpedoes.

Once you've practised your flying and attacking skills it's time to go on a mission. The most dangerous – the sinking of the Bismarck – is also the most satisfying.

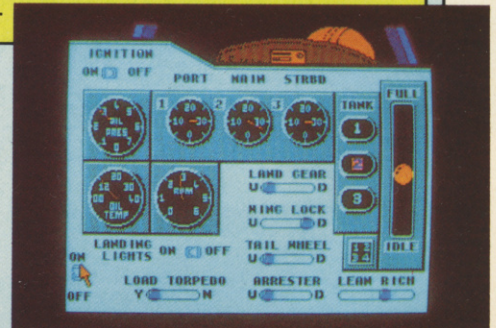
There are four screens – pilot, navigator, engineer and tail gunner – and all

SECOND OPINION

"My first impression was of a badly converted arcade effort. After playing a couple of times the simulation aspects of the game became more apparent....

Bank left! Keep her steady. Shoot the bomber - oh dear, I'm in the Atlantic again. And totally hooked." **PbM**

GREEN SCREEN: All clear



● The engineer's panel showing instruments

are necessary to complete your mission. The pilot screen shows a forward view through the cockpit and the instrument panel below it. A map is displayed on the navigator screen to plot your courses. The engineer screen gives information on the aircraft's status.

Completing the missions should keep you occupied for several months. The combination of simulation and strategy game works well, though the emphasis is very much on the simulation. Well worth a look if you're an avid simulationist. **GBH**

FIRST DAY TARGET
Complete Mission 1

FOOTBALL MANAGER II

Addictive ● £9.99 cass, £14.99 disk joystick/keys

Football Manager, the first of its kind, was reviewed way back in AA1, when England's European Championship humiliation was no more than a Bobby Robson nightmare. *Big League Soccer* and *Football Director* were in a similar mould: now Addictive bounce back with a sequel. Come and have a go if you think you're hard enough.

This is a game of two halves, Brian: strategy and highlights. The strategy is all done using menus and pointers, while the match highlights show a 3D view of the pitch with small animated players running, tackling and kicking.

SECOND OPINION

"If you are a certified footer loony this could well be the management game for you. I'm not quite clear why anyone would want to play what is really only a text/database-handling game when they could be out there playing the real thing - that's right, Matchday II! But if you have to have it, you certainly won't be disappointed.

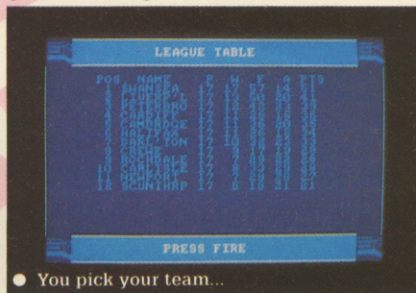
I agree wholeheartedly that the highlights should be optional: I never felt involved enough to concentrate on them, and found my attention wandering. Still, when all is said and done, the Addictive team done great, and that can only be good for the game." SC

GREEN SCREEN: Champion

Before you play you choose a team and skill level (out of three). There's the whole league to choose from, but you start off in the fourth division. Picking your team is more precise in this sequel than it was in the original: you position a player on the screen instead of just placing him by number. Your opponent's players are shown opposite yours so that you have some idea of what you're up against. Put a good player against a bad and you're more likely to tackle and beat him to the ball. Pick a couple of substitutes and it's time to watch the highlights. Earwigo, earwigo, earwigo.

It was the terrible graphics in *Football Manager* that lost it most points

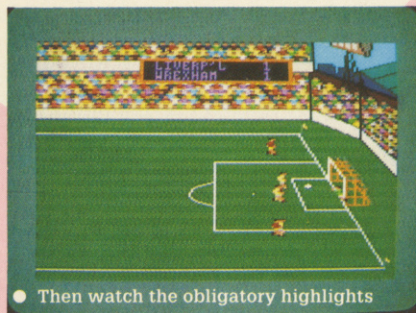
and made the most loyal of supporters sick as a treeful of parrots. They are a vast improvement this time, but remain such a waste of time that I still would love to be able to switch them off. The highlights are fun for the first few matches, but you soon get bored of them. And after all strategy is more important than graphics in a game like this.



● You pick your team...

At half time you can make a substitution if you wish, or change tactics by moving players. When the final whistle blows the day's results are displayed and the league table updated. Players can be bought or sold and you can even give them some extra training between matches. And like real players they get injured from time to time too. At the end of every turn you receive a financial report on gate receipts, wages and players bought and sold. There's also a chance to join the FA Cup and League Cup roads to Wemberly.

Sound is limited to crowd-cheering during matches and the thwack of boot



● Then watch the obligatory highlights



● Earwigo, earwigo, earwigo...

AA funny fact No. 1
Did you know that Steve Carey supports West Brom?

The Verdict

GRAPHICS48%

- Colourful and well animated match highlights.
- Menus are done well too.

SONICS19%

- A cheering crowd is the best you get.

GRAB FACTOR64%

- Football fans will be over the moon.
- Friendly menus make it easy just to start playing.

STAYING POWER78%

- Football management games get played rather than completed.
- Match highlights tend to irritate after a while.

AA RATING72%

- A fun strategy game that should keep you busy for many months.

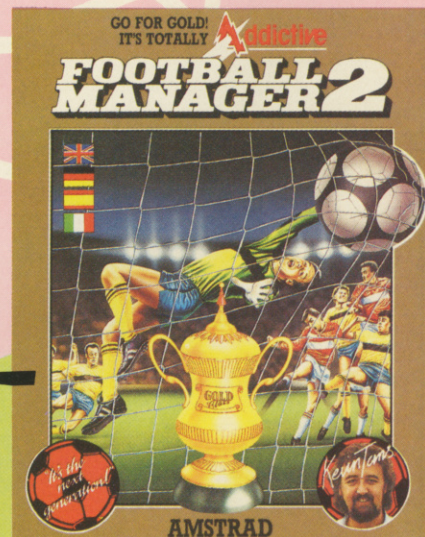
on leather. Unfortunately that most nostalgic of noises, the hiss of the ball as it strikes the back of the net, is not included, but you can't have everything. The menus are well presented and the match highlights are colourful, though they flicker.

It comes as a pleasure to reveal the final score: *FMII* beats *Football Manager* by a hatful of goals. *Big League Soccer* still has the edge after extra time and penalties on the grounds that you don't spend as much time watching matches, but there isn't really much in it.

You'll find yourself, like me, playing *FMII* well into the night. **GBH**

FIRST DAY TARGET

Get promoted to division three on the second level



MICKY MOUSE

Gremlin ● £9.99 cass, £14.99 disk
joystick/keys

The most famous mouse of all time has arrived to save the world – well, Disney Castle anyway. The evil Ogre King has stolen the Wand of Merlin and used it to cast a sleeping spell all over Disneyland. He then broke the wand into four and gave the pieces over to the care of the four witches: North, South, East and West. The witches have used their sections of the wand and some magic water (also stolen from Merlin) to conjure monsters to guard their towers. Only one bottle of magic water was left and that has been put into an enchanted water pistol. Mickey, armed with the enchanted water pistol and a large rubber mallet, has the task of collecting the four segments of wand and defeating the Ogre King.

Disney Castle is split into four towers, each occupied by a witch. The screen shows a view slightly above floor level so that you're looking down and into the tower. You start play at the bottom of the



first tower next to a boarded up door. A ladder leads to the next level and your objective is to reach the

top of the tower. The witch's monstrous minions walk through doors (or walls) and do their best to drain you of magic water. There are four types of monster: ogres, ghosts, skeletons and disembodied heads (called hedleys). The ogres and skeletons can be bopped with the mallet, though all that does to an ogre is create two little ogres. Little ogres can be squished with a single mallet blow. Hedleys and ghosts are only affected by the water pistol.

When a monster dies it leaves behind an object that can be picked up and it then appears as an icon, or it could just be magic water which re-charges you. There are eight different icons that can be collected: key, bomb, bird's head, glue, shield, repulsiveness, slow and lightning.

When you have a key you can go through the doorways and into one of the four sub-games – puddle maze, bubble machine, pump room and dripping taps. In the puddle maze you have to explore the multi-screen maze looking for a hammer, nails and some wood. When you have all three you go out of the exit and the door is nailed shut. Inside the maze you have three lives and if you touch a roaming bubble you lose a life. Lose all three and you're thrown out of the maze. There's also a skull that drains a life and a heart that gives you a bonus life.

In the bubble machine you must run along a platform and burst the bubbles that float upwards. If a bubble hits the platform that you're on it eats away at it until eventually a hole appears. Fall through the hole or lose all three lives and you must leave the bubble machine. Ghosts live in the bubble machine and if they touch you for too long you lose a life. The bubbles are produced by magic water and you have to be around when all of the water has drained away to obtain the hammer, nails and wood. The pump room has corks that must be hammered into holes before you can leave and the dripping taps need to be turned off in a particular order. Both the pump room and tap room have nasty monsters who seek to take away your lives.

If you block every door in the tower then you can go to the top floor where you find a section of wand and after all four towers are completed you can take on the Ogre King.

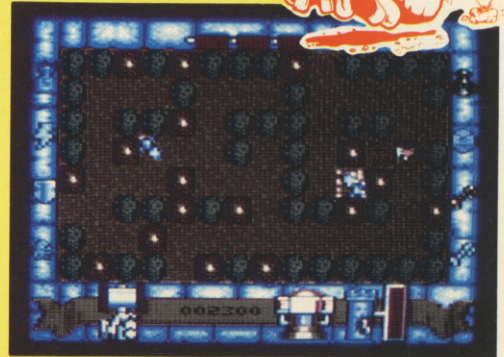
Part way through loading, the game pauses to play the tune (from the Sorcerer's Apprentice, I think) and it's done very well. Sound effects are simple, but serviceable. Graphics are bright and colourful and the animation good. The

vertical scrolling is very smooth.

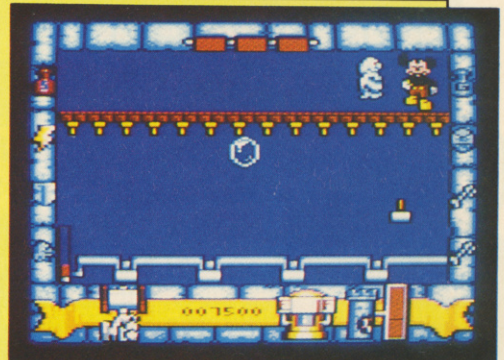
Mickey is unusual in that, unlike most games, it seems neither too hard nor too easy. It's tricky at first, but you build up expertise and eventually you'll complete the game. Licences are often very badly done – perhaps because there's so little money left after the licence is paid for – but Gremlin appear to have put a lot of effort into this one. It has paid off handsomely. **GBH**

FIRST DAY TARGET

Complete tower one



● The bubble maze: Mickey approaches the hammer



● Mickey bursts bubbles in the bubble machine

SECOND OPINION

"Colourful, smooth, varied, entertaining. Not a 'Mickey Mouse' (=naff) game at all – more a 'Moustergame' (ouch). It remains to be seen whether the presumably large sum spent securing one of Disney's greatest names has been well spent – Gremlin obviously think people like what they know. But this deserves to do well, simply because it's good."

SC

GREEN SCREEN VIEW: No worries

Mickey's icons

- Key: Needed to open doors
- Bomb: All monsters on screen go boom
- Bird's Head: Mickey doesn't fall off ledges when this has been collected
- Glue: Sticks all of the monsters to the spot for a while
- Shield: Stops monsters from draining magic water
- Repulsiveness: All the monsters run away from Mickey
- Slow: Monsters move at half speed
- Lightning: Mickey moves at double speed

The Verdict

GRAPHICS90%

- Smooth vertical scrolling.
- Very colourful graphics.

SONICS76%

- Excellent loading tune.

GRAB FACTOR83%

- Ogre bashing and ghost splashing is great fun.
- A little confusing at first.

STAYING POWER87%

- Four towers of increasing difficulty to complete.
- The sub-games add variation to the game.

AA RATING87%

- For once a licence has turned out a very good game.

ROMANTIC ROBOT

present

1988 - THE YEAR OF THE ROBOT

RESET

Multiface two

STOP

If you wish to be able to STOP any program at any time and COPY it to disk or tape, fully automatically, at a touch of a button, then MULTIFACE 2+ is the ONLY answer. There are no other comparable hardware devices, and the software copiers simply cannot compete.

Firstly you cannot compare the SUCCESS ratio of any tape copier with the MULTIFACE - you get what you pay for (and we throw in a lot more with the MULTIFACE . . .).

TAPE COPIERS always need to be loaded first, whilst MULTIFACE has all software in ROM for instant use. TAPE COPIERS can only attempt to copy a program as it stands, before it loads - there are various protections in the way and not enough memory for both the program to be copied and the copier. MULTIFACE is different: you can load any program from TAPE or DISK, run it as you wish and activate the MULTIFACE whenever you need it. Once you SAVE a program, be it to DISK or TAPE, you can CONTINUE it, SAVE it again if you wish, etc. In fact, you can play games as never before: there is no need to start from the beginning each time you play a game (as you would with a tape copier - if it could copy in the first place . . .). Since you can SAVE a program at ANY TIME and continue it, you can actually SAVE as you progress through a game. If, eventually, you loose all your lives, you can just load the latest saved version and continue from there! That is, if you do not manage to get INFINITE LIVES to start with: MULTIFACE has a built-in TOOLKIT which allows you to STUDY and ALTER anything in any program; you can thus POKE in infinite lives, ammo, etc.

MULTIFACE is extremely simple to use, friendly, idiot-proof, menu-driven with on-screen instructions, fully automatic - PURE MAGIC. It can be used on any CPC, comes with a cable and an extension bus for £47.95 ONLY! By the time you buy 10 programs on tape instead of disk - MULTIFACE will put them on disk for you - you will have saved some £50 which is more than the cost of a MULTIFACE. The money you save on further tapes is all yours!

MULTIFACE - WORTH EVERY PENNY, SAVES YOU POUNDS!

NOW AVAILABLE: MULTIFACE 2 PLUS - THE INVISIBLE ONE.

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

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

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

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

AMSTRAD ACTION JANUARY 1987

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THE YEAR OF THE ROBOT - BE PART OF IT

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	INSIDER	£14.95 <input type="checkbox"/>	RODOS EXTRA	£9.95 <input type="checkbox"/>	Overseas £3

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

Name & address

STUNT BIKE

Silverbird ● £1.99 cass
joystick/keys

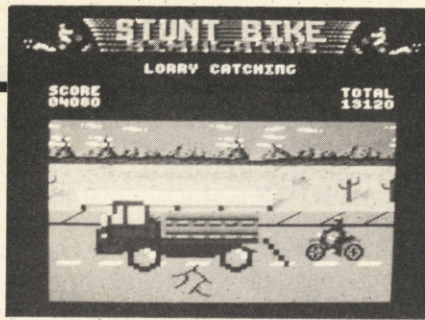
You, Chad Adams, are the world's greatest stuntman, and to prove it you have set yourself five stunts to complete within a tight time limit. The screen shows a horizontally scrolling playing area with you and your motorbike viewed from the side. Above is the time remaining and your score.

Three attempts can be made at each stunt before the game ends.

In stunt **one** you have to jump from a hang-glider and land on your bike. The road, however, is filled with cracks (didn't do your preparation, did you?) and other obstacles which make the timing of the drop even more difficult than it would already have been.

Stunt **two** is log jumping: you have to raise your front wheel over a log and then do the same with the rear. If you don't do both then the bike falls over and time is lost. Some logs can be driven around instead of jumped.

The **third** stunt is similar to the log jump except that instead of the bike jumping you leap out of the saddle and must land back on the bike after passing



● Lorry catching is one of the easiest stages

SECOND OPINION

"Five variations on the up-down-left-right syndrome. They're not particularly difficult to complete either. And once you've done it, Game Over. So empty it's practically a vacuum."

PbM

GREEN SCREEN: No worse

through flaming loops. **Fourth** is lorry catching, in which you have to avoid obstacles (again) and get onto the back of a lorry. **Fifth** and finally there's helicopter hanging – more or less the reverse of the hang-glider stunt. All you do is leap off the bike and grab the helicopter. So that's alright then. No sweat. And you thought it was going to be difficult!

Yet another game in which there is absolutely no sound whatsoever. The horizontal scrolling is smooth, but slow.

Colour is used well and there are some very large sprites.

It lacks sound and you don't really get the urge to keep playing because there's so little to do. Once you've completed the game you'll never play again. Overpriced.

GBH

FIRST DAY TARGET:

Complete the fire hoop jumping

The Verdict

GRAPHICS46%

- Good use of colour.
- Slow horizontal scrolling.

SONICS0%

- Ain't none..

GRAB FACTOR34%

- First stunt is one of the most difficult.

STAYING POWER28%

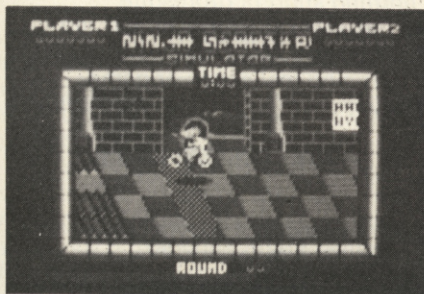
- Only five stunts to complete.
- Disappointing win routine. You won't play it again.

AA RATING29%

- You could buy a lot of chocolate for £2.

NINJA SCOOTER

Silverbird ● £1.99 cass
joystick/keys



● Is it a bird? Is it a plane? No, it's some head-case on a scooter

Ever played *Trailblazer*? If so you'll soon spot similarities. The idea is similar: you charge across terrain avoiding and jumping over things trying to reach the end of the level in the time limit. The difference is that in *Trailblazer* the terrain came out towards you, while here it scrolls right to left.

Each level, four rows deep and many screens long, has a bar across the bottom of the screen to indicate the length of the level. A clock at the top counts down the time you have left to reach the end of the level and alongside it is your score. You have one life and that's lost when time runs out. Bonus points are awarded at the end of the level for any time remaining.

SECOND OPINION

"If you're not terribly good at games (like me) you could find yourself attracted to this. I mean, how many games can you get to level 36 on your first attempt?"

It's put together quite well, with the jumps and speed ups adding variety."

PbM

GREEN SCREEN: No problem

The levels are composed of seven different objects: empty squares, holes, walls, ramps, watches, bumps and speed-ups. Falling in holes or hitting walls knocks you off the scooter and loses you valuable time; bumps slow you down; ramps launch you into the air; speed-ups make you go very much faster – but the effect only lasts to the end of a level, or until you crash into something. Collecting a watch adds to the amount of time remaining to complete the level.

There are also skulls, cars, skateboarders and clubbers, all of which knock you over when you touch them.

A fast and furious tune plays throughout, but there are no sound effects. The scrolling of the graphics is very jerky, but speed is what counts – and there is plenty of that. The sprites are rather better on colour than animation.

Ninja has little going for it in originality or technical excellence, but it makes up

for it in playability. The one major criticism that I have is difficulty. It's too easy to complete levels and you may get bored with it too quickly. Having said that, however, I'm aware that level of difficulty is notoriously difficult to get right, and what one player may find a cinch another may struggle for weeks to complete.

GBH

FIRST DAY TARGET:

Complete 20 levels

The Verdict

GRAPHICS46%

- Colourful sprites and backgrounds...
- But the horizontal scrolling is terrible.

SONICS58%

- Excellent continuous tune, but it could drive you crackers.

GRAB FACTOR65%

- It has that elusive addictive quality that makes you want to keep playing.
- Very easy to play, even for novice gamers.

STAYING POWER46%

- Loads of levels to complete.
- You'll probably get bored before you lose.

AA RATING63%

- Not mindblowingly original, but at £2 you can hardly go wrong.

BATTLESHIPS

Elite ● £1.99 cass
joystick/keys

We've had snooker, we've had skiing, we've had chess. Now here's another old game converted into a computer game. This time it's that paper and pen classic beloved of the back row of many a French class (and geography, maths, physics...). Battleships returns. You're the captain of a naval fleet and your mission is to destroy your opponent's fleet. Cold war politics still rule, OK?

There are one, two and multi-player options. The multi-player option lets you battle it out with friends and is also the only way to get on the scoreboard.

In the first part of the game you simply set up the map and position your boats where your opponent can't destroy them. Then you have the grid open with a moveable cursor to fire the shots. Press fire to launch a missile, and it marks a cross on the map to show where the missile has landed. Then watch the computer launch

This review was written by Deian Lye of Bath, who spent a week with us on work experience.

The Verdict

GRAPHICS52%

- Well animated ships and fire.
- The clouds are poorly done.

SONICS40%

- Explosions are terrible: a high pitched sound is all you get.
- No tune during the game – only a short one while the game loads.

GRAB FACTOR47%

- It'll keep you amused for a few hours...
- But you'll get bored after a few wins.

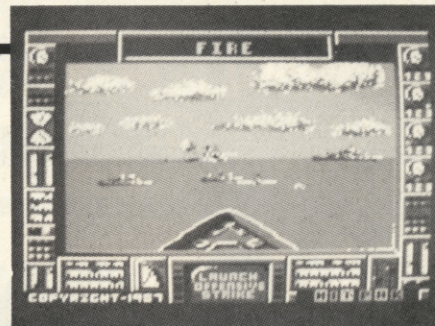
STAYING POWER51%

- Good fun destroying ships.
- Frustrating when you can't finish off your opponent's last boat!

AA RATING63%

- A good game overall, but a pity it doesn't have better sound.

its shots on your fleet, and wait to see whether you have hit any of your opponent's ships or if he/she has hit any of yours. You go through the process again until either your fleet or your opponent's has been destroyed.



● Bombs away! Battleships are go

Graphics are OK – especially the fire on a ship that has been hit, and the SOS lifebelt when the ship has sunk. The clouds look like flying bushes but apart from that – and the sound, which isn't too healthy – everything is OK. All in all a good value budget game. **DWL**

FIRST DAY TARGET

Beat the computer opponent

SECOND OPINION

"A colourful, noisy blastergame that certainly isn't dead in the water. Trying to down that last enemy boat is intensely frustrating – but you feel really rewarded if you get it!" **SC**

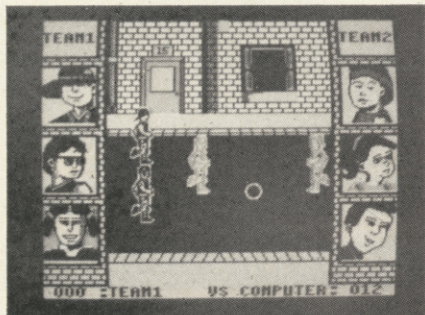
GREEN SCREEN: No problem

STREET SPORTS BASKETBALL

Epyx ● £9.99 cass, £14.99 disk
joystick/keys

An endless stream of sporting games flows from the software houses, and basketball is one of the most popular.

In this latest you get a choice of one or two player games and can pick your squad from a squad of ten players. There are four different courts to choose from. Each has its advantages and disadvantages: one, for instance, has an oil slick while another has a high curb making dribbling tricky (the caretaker should be sacked immediately). After you select a



● Beware oil slicks

The Verdict

GRAPHICS29%

- Hardly any colour at all...
- And what there is, is badly used.

SONICS0%

- Silent as the grave.

GRAB FACTOR46%

- The selected player wears the same colour strip as your opponent. Ho hum.

STAYING POWER46%

- Computer opponent is tough.
- Once you've beaten it you're only left with other human players.

AA RATING44%

- A sub-standard basketball game.

court a coin is tossed to see who has first pick of the ten players: each team must choose three. They have strengths and weaknesses you must balance.

Down either side of the screen are pictures of the players in each team and the rest is covered by the horizontally scrolling basketball court. The player nearest to the ball is the one you control, but

SECOND OPINION

"My first thought was 'Why is my team deformed?' The graphics are nothing short of grotesque. My last thought was that the game must be a parody, because there's no real action or game-play." **PbM**

GREEN SCREEN: Alright

you can change the selected player at any time with the fire button. One team wears black, the other blue, but – listen to this – the blue team player nearest to the ball is black and the black team player nearest is blue. There may not be many colours on screen at any one time, but if Epyx needed more colours they should have changed resolution rather than make the game more confusing. Not surprisingly there is little colour used in the game and characters themselves aren't brilliantly drawn. There are no sound effects or tunes.

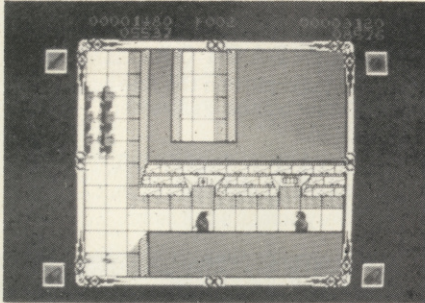
Unless you're desperate for a basketball game then steer clear of this one. Epyx have produced much better products than this in the past, but *Street Basketball* doesn't bode well for *Street Sports Baseball*. **GBH**

FIRST DAY TARGET

Beat the computer in a 10 point game

SHACKLED

US Gold ● £9.99 cass, £14.99 disk
joystick/keys



● Smooth scrolling in all four directions

The inhabitants of the local mysterious castle have been up to some naughty stuff. All your friends have been captured and chained up. What else is there for it, then (sigh), but to go rescue them?

The screen is a four way scrolling maze with icon panels down either side and score and energy at the top. When you run out of energy you die. One or two players take part.

The castle's many different levels get more difficult the deeper you go. On each

there are cells, inside which are either friends or enemies. Enemies attack and knock down your energy. Sometimes an enemy drops something that can be collected when they die. Other objects increase your shot speed, make you move

SECOND OPINION

"This is decidedly average. It has some nice things going for it – movement is quite smooth and sensitive, and for a while it's fun blasting the bad guys with their flame-throwing and general bad habits.

But what it lacks is a very high oh-go-on-just-one-more-go rating, without which no game stands much chance of occupying you for more than a few days." SC

GREEN SCREEN: It's OK

faster, add to your defence and increase your attack power. Friends follow you around when you release them, but desert you at the end of a level (with friends like this...).

You get a great tune on the title screen, but none in the game. Sound effects are nothing special, and the animation is not much better.

Gauntlet? Well yes, but the similarities are only in the style of game. *Gauntlet* has more grab and the urge to play again is nigh on irresistible. With this you get that deadly 'seen it all' before feeling. GBH

FIRST DAY TARGET

Score 15,000

The Verdict

GRAPHICS43%

- Smooth four way scrolling.
- Poor use of colour and weak animation.

SONICS48%

- Great title tune.

GRAB FACTOR54%

- Two player action gives it a little extra.
- Instructions confuse at first.

STAYING POWER46%

- Over 100 levels to complete...
- But they're all much of a muchness.

AA RATING49%

- Yet another *Gauntlet* clone.

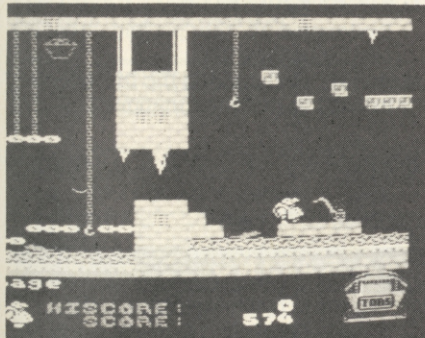
CHUBBY GRISTLE

Grand Slam ● £8.95 cass, £14.95 disk
joystick/keys

A grossly fat car park attendant, Chubby Gristle lives to eat and be nasty. His ultimate ambition, which you can help him realise by playing this game, is to weigh in at a ton.

The screen has a small panel in which lives (four to begin with), score and weight are displayed. The rest is taken up by a series of platforms. You're reminded of *Jet Set Willy*, and the similarities extend beyond appearances and into gameplay, too.

Littered around the screens are objects you can eat to build up your weight and



● Meet Mr Gristle, the fat little

SECOND OPINION

"Once upon a time there was Miner 49'er, then there was Donkey Kong, Lode Runner, Manic Miner, Jet Set Willy... Now there's Chubby Gristle. If you think fat is funny you'll hoot, but if you're after something a little more original you'll probably give this a miss. It depends on what your collection of platform games is like.

At budget price this would be a neat little game, but £9 on tape and £15 on disk? Come off it, Grand Slam!" SC

GREEN SCREEN: Ticketyboo

some others that may come in useful later on. The platforms have gaps between them with ladders, ropes and lifts provided for you to move between floors. Watch out, however, for things that move around the screen and can kill at a touch. Some stationary objects are likewise deadly.

As with virtually every other platform game you ever saw, you get a continuous tune while you play. Beethoven it ain't, but I have heard worse. Graphics are small, but colour is used well and animation is simplistic.

Chubby Gristle is hardly state of the art. Platform games have been around for *Donkey Kong's* years, and this one has little new to offer.

If you still find platform games enjoyable – if you have a platform soul – then you'll find plenty of timing problems and tricky positions to get out of before you complete the game. GBH

FIRST DAY TARGET

5,000 points

The Verdict

GRAPHICS57%

- Colour is used well.
- Sprites are on the small size.

SONICS68%

- Great little tune plays throughout.

GRAB FACTOR57%

- Easy enough to just pick up a joystick and play.
- Frustrating if you get a situation where you can do nothing to avoid losing a life.

STAYING POWER63%

- Some tricky problems to solve.
- Only 20 screens to complete – not many as platform games go.

AA RATING59%

- A budget game – and a good one at that – at full price.

PSYCHO PIGS

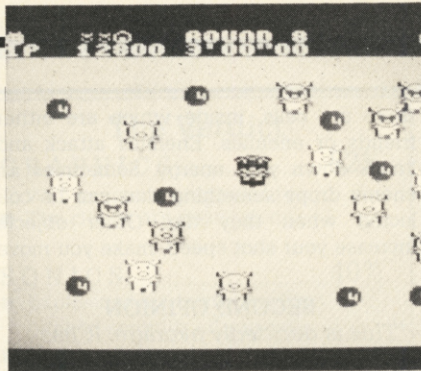
US Gold ● £9.99 cass, £14.99 disk
joystick/keys

You're a pig. Yes you are, you're a little pig (nothing personal), and you charge around throwing bombs at other little oinkers under the watchful eye of a referee.

Across the top of the screen is your score, number of lives and a space for objects. The rest of the screen consists of a large empty space with the occasional bomb or pig.

The bombs are lobbed at the pigs and any caught in the blast are killed. The other pigs can also toss bombs around and you lose a life if hit. Bombs have a number on them indicating how many seconds after throwing it will detonate. When all the pigs are dead you go onto the next level and after every third level there's a bonus screen in which you have to bash pigs on the head as they come out of holes in the ground.

Seven objects can be collected: tonic, rice ball, gas, knapsack, hyper bomb, sweet potato and 'I don't know'. Tonic allows you to throw further, rice balls make you go faster, and gas puts the other pigs to sleep. The knapsack allows you to carry more than one bomb and the hyper



● Psycho Pigs do it in sty-le. Or rather, not

bomb sets off every bomb on screen. A sweet potato is just bonus points and 'I don't know' makes you resistant to explosions.

SECOND OPINION

"Budget, yes. Full price, no." SC

GREEN SCREEN:

Some problems identifying porkers

A frantic oinky sort of a tune plays throughout, and the explosions are done well. The pig sprites are nicely drawn. Background graphics on the main part of the game – just a plain screen – are pathetic.

DROIDS

Mastertronic ● £1.99 cass
joystick/keys

The metallic stars of *Star Wars* the movie, the books and the cartoon series finally make it to the micro screen. R2-D2 and C-3PO have been captured by the Fromm gang and imprisoned deep within their base on the planet Auren. R2-D2 managed to open the electronic lock and it's now up to you to get the duo to the surface where rescue awaits.

SECOND OPINION

"I rather enjoyed this, though it's hardly Mastermind material – or perhaps that's why I liked it! Certainly R2 and 3PO are nicely drawn and smooth.

It's been a long wait for our metallic pals, but worth it." SC

GREEN SCREEN:

Colour matching is more difficult in the sub-game.

Across the bottom of the screen is a row of icons used to control the action of 3PO and R2. There are six: four control which way you move and the other two

allow you to throw crystals or log-on to a computer terminal. Above the icons is the horizontally scrolling playing area with large characters of R2 and 3PO.

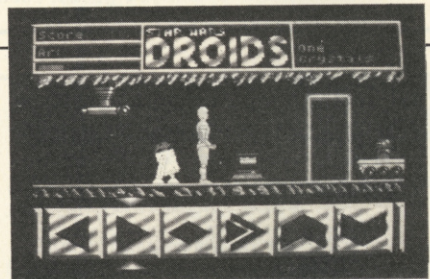
There are eight levels to the base and travel between levels is via lifts. Before you can use a lift you must get R2 to log-on and break the code. The code cracking stage is a sub-game in which the computer produces a series of sounds and lights. Duplicate the sequence and a longer, second sequence is your reward. Crack that and the lift is accessible to you. Computer terminals are also used to open doors that you come across on the levels. You're not alone in the base though, because there are plenty of hostile robots who deprive you of energy if you touch them – and running out of energy is fatal. They can be despatched by throwing a crystal at them.

R2-D2 and C-3PO are large, colourful smoothly moving sprites. The enemy robots are drawn well too, but the background graphics are plain. There's a jolly tune that plays on the title screen and the sound effects are good too.

This is not one of the most difficult or sophisticated games ever, but it may keep some younger players occupied for a while. It gets tedious after a few games because each level is very similar, and all you get is longer sequences of colours to match.

GBH

FIRST DAY TARGET:
5,000 points



● R2 gets ready to log-on to a computer

The Verdict

GRAPHICS58%

- Large, colourful sprites.
- Backgrounds could have been more detailed.

SONICS51%

- Great title tune.

GRAB FACTOR53%

- Exploration of the playing area is easy to begin with.
- Awkward controlling the robots with icons in hazardous situations.

STAYING POWER46%

- Eight levels to go through before you reach the surface.

AA RATING56%

- Sub-game is too easy to complete.
- A simple game that will provide entertainment for younger readers.

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SOLDERING ON

Hardware projects for your CPC

The story so far...

Last month we featured a CPC/CPC link. We continue with a couple of listings and a few ideas for future usage.

The link works by connecting two CPC's through the printer and joystick ports. The levels for these are inverted, so a row of transistors is used to translate correctly the data from one computer to another. (See AA35.)

Now read on...

Before I begin the programming side I'd better point out a few drawbacks to the design. For one thing it ties up both joystick ports on each machine and the printer ports. So business/games applications are limited.

Each communications channel (getting technical now) can only talk one way. This doesn't mean that data needs to be lost during transmission – but the software will have to be both methodical and careful to get around the inherent

limitations of the link.

A couple more problems: the data can only be of seven bits. Normally this is 0-127, but 0 is used to indicate no transmission, so that is unavailable for standard usage. Also the data is not buffered – the printer and joystick ports 'forget' what has been sent.

Here's the programs:

```

10 REM Transmitting program
20 REM Amstrad Action September 1988
30 a=33:z=0:y=z:x=z
40 REM in this case the data is ASCII
33
50 WHILE z <> a
60 PRINT #8,a;
70 z=JOY(0):x=JOY(1)
80 y=z AND 6:z=int(z/2):y=int(y/2):z=z OR y
  z=z OR y
90 z=z+x
100 WEND

```

This listing sends out character 33 – an exclamation mark – until it receives notice that it has been received. Lines 50-100 do the work: a similar fragment appears in the other listing.

Now it's your turn!

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```

10 REM Receiving program
20 Amstrad Action September 1988
30 z=0:y=z:x=z
40 REM clear the old data and receive more
50 WHILE (JOY(0)+JOY(1)) <> 0
60 WEND
70 z=JOY(0):x=JOY(1)
80 y=z AND 6:z=int(z/2):y=int(y/2):z=z OR y
90 z=z+x
100 PRINT #8,z;:PRINT ,chr$(z)

```

Operation of this listing is the opposite of the transmission program. It waits for a non-zero character; once received it's converted to its true form (lines 70-90) and then transmitted back to the source unit, indicating success. No check is made to ascertain that the data was not corrupted, but the kernel of transmission routines can be seen.

This isn't the sort of project that you simply build and use. The software has to do all the work, and that's the bit that you have to do – this article just tells you how the system operates. But here's a few ideas for your programs – and of course your efforts could get into *Type-Ins*. First, how about a two player game? Of course you won't be able to use joysticks, but it should be possible to get something like Battleships or Hangman.

Then there's the file swapping capability. Three inch disk availability makes this a bit of a waste, but remember all those 464 owners who don't have disk drives. You could take this idea to its extreme – rather than having two CPC's joined together you could have a ring network, with information leaping about from one to another up the line until it got to its destination. This would be slow in Basic, but a machine code routine would only have to work to the maximum joystick speed. Think of a kingdom style game with ten players... possibilities?

Oh, and a few extras for the interface wouldn't go amiss. As is, it's just about the cheapest design available. Lots of things could be added, such as pull up resistors to ensure cleaner transmission, opto-isolators to ensure that the machines are electrically insulated, integrated circuits for a more compact layout.

Next months *Soldering On* presents a project for a stereo amplifier to connect to your CPC.

Lessons learnt

This hardware project illustrates several points. The first of these is that data transmission is not the simple solder-two-leads-together-and-it-works that the ignorant believe it to be. Those transistors are vital components to invert the signals. A standard printer 'bit on' signal is 5V, whereas a joystick 'bit on' signal is 0V (what one sees as on, the other sees as off).

Take a look at the receiving listing. Noticed all those arithmetic statements? These mask off the bits from the two joystick ports and add them together. Now these follow an unconventional pattern as follows:

D3	D2	NU	D1	NU	D0
Fire2	Fire1	RightLeft	Down	Up	

● Data usage for joystick zero

NU	NU	NU	D6	D5	D4
Fire2	Fire1	RightLeft	Down	Up	

● Data usage for joystick one

NU=Not used
Dn=Corresponding Data bit

So the arrangement of transmitting/receiving pins need not be logical or straightforward, so long as it works.

Finally, notice how a data value of zero is used to indicate when no data is being sent. It sounds obvious, but the concepts of a mark (data) and space (no data) are critical when understanding any communication setup.

One man band

A million hopefuls every day pick up a user's guide and say, 'I'm gonna start a software company'. But what with one thing and another... Here's a roundup of some that made it.

TOOLKIT

G. Middleton ● £14.95 ● disk only

There are an awful lot of toolkits about, generally libraries of RSX's to add a bit more clout to Basic. This one offers many of the standard extra commands, and does so at a very cheap price. It contains:

- Some sprite routines. Generally these consist of a few clever printing routines that XOR the sprite with the background. In this instance though the routines actually perform true sprite operations, cutting out a section of memory and forcing a sprite on top of it.
- A routine to use split screen modes. Many commercial games use this feature to print one layer of the screen in one mode and another in a different one. Such routines have appeared before in AA, but these RSX's supplied on a disk make the operation much simpler.
- Some conventional routines – screen dumps, fill routines and so on. A 464 owner can find commands here to use *Type-Ins* for the 664/6128. And that fill command is rather special, in that two versions are available: one is lightning quick for filling simple shapes, the other takes its time doing larger, more complex areas. And you can design a fill pattern to use, rather than a solid colour.
- Similarly disk commands are beefed up and given more power. Indeed so much so that you could write a disk editor with it in simple Basic.

Your initial reaction may, like mine, be a stifled yawn and a, 'So what?' But this disk is a whole lot better than most of the competition.

AIRPORT 88/SIMPLE WORDS

Young Software Products ● £6.99 ● disk only

Two programs supplied on the same disk. The first, *Airport 88*, is a management game. Choose which airline you join, and then try to stay in the business as best you can, by specifying the destination of a flight and allocating which plane does the journey. A game aimed at the 9-and-above age range that has taken on an additional authenticity in the light of this summer's tourist problems at our major airports.

The second product, *Simple Words*, is a word-processor suitable for the novice. It is good, but it raises worries when it can be crashed simply by pressing the CLR key. The program is nowhere near as good as *Pendown* by Logotron, but bundled with the game it makes fair value. (Price valid until October.)

BRUSHART

Young Software Products ● £5.99 ● disk only

A cheap art package that only seems to work in Mode 0, and possessing some very crudely done features. The streetwise user can buy *Cherry Paint* for a few pounds more, and get some heavy-weight artistic power. But even though it lacks the photogenic

looks of the *OCP Art Studio*, it can actually do an awful lot – spraycans, rubber banding, fills etc. Young Software Products have other programs in their catalogue, obtainable on request (enclose SAE).

TAX

Adrain Pegg ● Free ● disk only

Don't be misled: *Tax* compiles an expense list for the self-employed Equity member., though users with knowledge of Basic should be able to adapt the program to their own needs.

Operation is simple: enter the tax year for the run, and your expenses under different headings – travel, clothing, food, fees etc. The computer makes a record, and prints a number for you to write on the back of the receipt. You can save and load the data at any time for convenience.

At the end of the year – say 1988-89 – you take a printout from the computer and the receipts down to your accountant. This means it's less of a fuss for him, so in theory you can pay him less for keeping your finances straight.

Unless you keep expense accounts it all seems rather trivial – until you try doing the same thing by hand. Send a blank disk with an SAE to Adrain Pegg: he'll help to get your expenses straight.

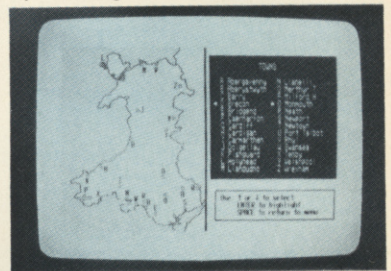
WALES

Lyn and Stephen Fisk ● Free ● 6128 disk only

A novel PD program, *Wales* is really a tourist's guide to that lovely country. It presents an attractive map of the place and lists entries for castles, towns, mountains, national parks and rivers.

These can be displayed singly, and require the minimum of keypresses to get working. The information is useful, and the product should be compulsory viewing for all authors of educational software, who could themselves learn a thing or two about what is possible with care and foresight.

And a major attraction, of course, is that it's free: simply send a blank disk and an SAE to the Fisks at the address below.



Contacts

- Adrian Pegg, 37 Osborne Rd, Palmers Green, London N13 5PT
- Young Software Products, 5 Harlyn Drive, Pinner, Middx HA5 2DFG
- G. Middleton, 18 Newlands Park Rd, Scarborough, N. Yorks YO12 6PX
- Lyn & Stephen Fisk, 56 Merthyr Mawr Rd, Bridgend, Mid-Glamorgan CF31 3NR

TYPE-INS

Pages packed with powerful programs

3D Characters

Now here's a program to help spice up jaded presentation. Use the RSX commands that this program sets up to produce characters with a colour edge, giving them depth. And it comes to you, oh loyal readers, from **Daren Vernon**, who lives in Harrow. To use it, store the string you want to print in a variable, such as **a\$**. And include the two different colours when you invoke the command:

```
|3D,@a$,1,2
```

Also, use the following variation for double height characters:

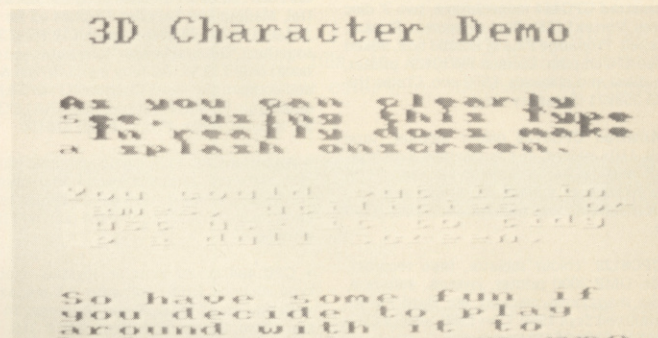
```
|3D.DH,@a$,1,2
```

```
1 ' 3D CHARACTERS
2 ' by Daren K. Vernon
3 ' Amstrad Action September 1988
7 '
8 ' *** Poke in machine code ***
9 '
10 RESTORE
20 addr=&A000
30 FOR x=1 TO 29
40 FOR y=1 TO 16
50 READ byte$:byte=VAL("&"+byte$)
60 POKE addr,byte:chk=chk+byte
70 addr=addr+1
80 NEXT
90 READ chksum$
100 chksum=VAL("&"+chksum$)
110 IF chk<>chksum THEN PRINT"DATA Error in line";190+(x
    *10):END
120 chksum=0:chk=0:NEXT:CALL &A000
127 '
128 ' *** Instructions / 3D char. demo ***
129 '
130 MODE 1:CALL &BC02:a$="To use the commands, type : "
140 b$="|3D,@a$,c1,c2 or |3D.DH,@a$,c1,c2"
150 c$="where a$ is the text to print, c1 is the"
160 d$="colour of the text and c2 is the colour":e$="of the
    background"
```

Here, have some money!

Send us your listings and not only do you stand a very good chance of getting in print in your favourite magazine, you could also earn yourself **£100**. Every *Type-In* we publish is paid for, and **£10** is the absolute minimum. So what are you waiting for? Send your tape or disk – and a printout if you can – to **Type-Ins, Amstrad Action, Future Publishing Ltd, 4 Queen St, Bath, BA1 1EJ**. And here's a few tips you may find useful:

- Send only your own original unpublished work;
- Use lower-case, not capitals, for variable names;
- REM statements make the program easier to understand;
- Don't use letters that look like numbers as variable names (O and 0, for instance, or l and 1);
- Avoid lengthy multi-statements. Short lines aid debugging;
- And ensure your name and address are on every piece of paper, cassette and disk you send.
- If you'd like to reach an even larger audience, declare that you are putting your contribution into the Public Domain.
Oh, and one final thing. Good luck!



● 3D words for 3D Type-Ins

```
170 |3D,@a$,1,3:PRINT:PRINT:|3D.DH,@b$,1,3:PRINT:PRINT:PRINT
180 |3D,@c$,1,3:PRINT" ";CHR$(8)::|3D,@d$,1,3:PRINT:|3D,@e$
    ,1,3
190 DELETE 7-
197 '
198 ' *** DATA for machine code ***
199 '
200 DATA 01,0A,A0,21,C9,A1,CD,D1,BC,C9,12,A0,C3,1A,A0,C3,84B
210 DATA DB,A0,33,C4,33,44,2E,44,C8,00,FE,03,C2,86,A1,DD,7EA
220 DATA 7E,04,6F,DD,7E,05,67,22,B6,A1,DD,7E,00,32,B5,A1,714
230 DATA DD,7E,02,32,B4,A1,2A,B6,A1,7E,4F,23,56,23,5E,63,68F
240 DATA 6A,79,FE,00,C8,7E,C5,D5,E5,CD,53,A0,E1,D1,C1,23,9FC
250 DATA 0D,18,EE,C5,32,B2,A1,CD,11,BC,FE,02,28,76,32,B3,77A
260 DATA A1,21,00,00,01,00,00,11,00,00,CD,78,BB,E5,D1,26,4B0
270 DATA 00,6A,29,29,29,29,01,B3,A1,0A,FE,00,CA,C8,A0,01,59E
280 DATA 0E,00,ED,42,22,AE,A1,26,00,6B,29,29,29,29,E5,C1,589
290 DATA 21,9D,01,ED,42,22,B0,A1,ED,5B,AE,A1,2A,B0,A1,CD,840
300 DATA C0,BB,11,B5,A1,1A,CD,DE,BB,3A,B2,A1,CD,FC,BB,11,984
310 DATA B4,A1,1A,CD,90,BB,3E,01,CD,9F,BB,3A,B2,A1,CD,5D,8A4
320 DATA BB,3E,00,CD,9F,BB,C1,C9,29,01,1A,00,ED,42,22,AE,6ED
330 DATA A1,C3,87,A0,11,B2,A1,1A,C3,5A,BB,FE,03,C2,86,A1,8CB
340 DATA DD,7E,04,6F,DD,7E,05,67,22,B6,A1,DD,7E,00,32,B5,750
350 DATA A1,DD,7E,02,32,B4,A1,2A,B6,A1,7E,4F,23,56,23,5E,6CD
360 DATA 63,6A,79,FE,00,C8,7E,C5,E5,CD,12,A1,E1,C1,23,0D,886
370 DATA 18,F0,CD,A5,BB,D4,06,B9,32,C8,A1,E5,11,FE,00,21,878
380 DATA B8,A1,CD,AB,BB,E1,7E,32,B9,A1,32,B8,A1,23,7E,32,8D5
390 DATA BB,A1,32,BA,A1,23,7E,32,BD,A1,32,BC,A1,23,7E,32,77C
400 DATA BF,A1,32,BE,A1,23,7E,32,C1,A1,32,C0,A1,23,7E,32,78C
410 DATA C3,A1,32,C2,A1,23,7E,32,C5,A1,32,C4,A1,23,7E,32,79C
420 DATA C7,A1,32,C6,A1,3E,FE,CD,53,A0,3E,08,CD,5A,BB,3E,863
430 DATA 0A,CD,5A,BB,3E,FF,CD,53,A0,3E,0B,CD,5A,BB,11,C8,7ED
440 DATA A1,1A,CD,0C,B9,C9,21,95,A1,7E,FE,FF,C8,E5,CD,5A,9BC
450 DATA BB,E1,23,18,F4,45,72,72,6F,72,20,69,6E,20,70,61,6BD
460 DATA 72,61,6D,65,74,65,72,73,2E,2E,2E,07,FF,62,00,583
470 DATA CD,00,45,01,03,01,76,01,FE,FE,62,62,68,68,78,78,60E
480 DATA 68,68,68,68,68,68,68,68,68,68,00,00,00,00,00,00,410
```

Disk Sector Editor

The final, definitive machine code disk utility from **Niall Brady** from Sligo. Yes, I know we've printed similar programs before – but we still get requests for them.

This program allows you to search for programs to unerase files, to search for high scores, and generally investigate disks. A help page is included – just type **CTRL-H**. And, as always, be sure that you have a back-up copy of your subject disk before exploring and altering it!

```

1 ' Disc Sector Editor ( not another one !! )
2 ' by Niall Brady
3 ' Amstrad Action September 1988
10 DATA CD,3D,93,CD,1A,94,CD,88,93,CD,40,94,CD,1A,94,CD,8E9
20 DATA 93,92,CD,E6,92,3A,2E,96,FE,01,CA,CA,90,2A,26,96,871
30 DATA CD,81,BB,CD,75,BB,CD,06,BB,CD,84,BB,FE,01,CA,07,970
40 DATA 92,FE,03,CA,9E,91,FE,07,CA,BA,91,FE,08,CA,A9,91,9B0
50 DATA FE,10,CA,E1,90,FE,12,CA,07,91,FE,13,CA,F5,90,FE,A19
60 DATA 14,CA,C5,91,FE,17,CA,D0,91,FE,F0,CA,15,91,FE,F1,AC1
70 DATA CA,2D,91,FE,F2,CA,45,91,FE,F3,CA,60,91,FE,F8,CA,B84
80 DATA 84,91,FE,F9,CA,7A,91,FE,FA,CA,8E,91,FE,FB,CA,94,C19
90 DATA 91,FE,FC,CA,F1,91,FE,30,38,8B,FE,47,30,87,CD,BD,A4E
100 DATA 93,CD,B8,93,47,CD,06,BB,FE,47,30,F9,FE,30,38,F5,949
110 DATA CD,BD,93,80,2A,2C,96,77,23,E5,F5,CD,78,BB,7C,FE,977
120 DATA 33,D4,04,94,E5,CD,0A,94,E1,F1,E5,CD,5D,BB,E1,24,990
130 DATA 22,26,96,E1,22,2C,96,C3,15,90,AF,32,2E,96,3E,06,5F4
140 DATA 32,27,96,3A,26,96,FE,14,30,07,3C,32,26,96,C3,15,530
150 DATA 90,21,05,06,22,26,96,3A,25,96,FE,01,CA,0C,90,CD,5C1
160 DATA 87,92,C3,0F,90,3E,07,CD,5A,BB,21,00,88,11,00,8A,5E6
170 DATA 01,00,02,ED,B0,18,D7,21,00,8A,11,00,88,01,00,02,3D6
180 DATA ED,B0,C3,0C,90,CD,78,BB,7D,FE,05,28,C1,2D,22,26,7DA
190 DATA 96,11,F0,FF,2A,2C,96,19,22,2C,96,18,B1,CD,78,BB,748
200 DATA 7D,FE,14,28,A9,2C,22,26,96,11,10,00,2A,2C,96,19,490
210 DATA 22,2C,96,18,99,CD,78,BB,7C,FE,07,38,91,25,25,25,64E
220 DATA 22,26,96,11,FF,FF,2A,2C,96,19,22,2C,96,C3,15,90,63E
230 DATA CD,78,BB,7C,FE,33,30,F5,24,24,24,22,26,96,11,01,62E
240 DATA 00,2A,2C,96,19,22,2C,96,18,E3,3A,24,96,FE,00,28,4FE

```

Encode/Decode

For those interested in the mechanics of encryption (the *Type-In* in AA33 was a machine code RSX, you see) we present this intriguing program from **Matthew Davey** who is an inhabitant of Kambah, Australia. It's far easier to follow.

To use it, provide the listing with the name of an Ascii file. Admittedly the program is fairly slow, to speed it up remove the last statement in lines 90 and 130.

```

1 ' Encode/Decode
2 ' By Matthew Davey
3 ' Amstrad Action September 1988
10 MODE 2:CAT:INPUT"NAME":NAME$
20 INPUT"0) code or 1) decode":CHOICE
30 IF CHOICE<0 OR CHOICE>1 THEN GOTO 20
40 CODEPOS=0:CODEKEY$
   ="QWERTY":REM CODEKEY$ CAN BE ANYTHING
   OF ANY LENGTH
50 OPENIN NAME$:OPENOUT NAME$
60 WHILE NOT EOF
70 LINE INPUT#9,A$:PRINT "READ--->":A$
80 FOR T=1 TO LEN(A$):B$=MID$(A$,T,1)
90 V=ASC(B$)
100 CODEPOS=CODEPOS+1:IF CODEPOS>LEN(CODEKEY$) THEN
   CODEPOS=1
110 IF CHOICE THEN GOSUB 180 ELSE GOSUB 200
120 C$=C$+CHR$(V):NEXT
130 PRINT#9,C$:PRINT "WRITE-->":C$
140 C$=""
150 WEND
160 CLOSEIN:CLOSEOUT
170 PRINT"OK!":WHILE INKEY$="" :WEND:RUN
180 IF V>32 AND V-(ASC(MID$(CODEKEY$,CODEPOS,1))-32)>32 THEN
   V=V-(ASC(MID$(CODEKEY$,CODEPOS,1))-32)
190 RETURN
200 IF V>32 AND V+(ASC(MID$(CODEKEY$,CODEPOS,1))-32)>32 THEN
   V=V+(ASC(MID$(CODEKEY$,CODEPOS,1))-32)
210 RETURN

```

Variables List

For your appreciation, **Michael Gledhill** from Tavistock has produced a program which lists variables used in Basic programs. So what? Well, this version works on all three CPC's. It adds a new RSX command, |VAR, so it is very easy to use. Should make a welcome addition to many a programmer's utilities box.

```

1 ' List Variables
2 ' By Michael Gledhill
3 ' Amstrad Action September 1988
5 CLS:LOCATE 1,2:PEN 1:PRINT " Welcome back, chummy
!!!
   This BASIC proggy does the poking for the
   machine code
   proggy that'll list the BASIC variables."
6 PRINT:PEN 3:PRINT " INTERESTING FACTS:
   When someone types RUN, all BASIC          variables
   are
   reset, BUT ARE NOT          ERASED FROM THE MEMO
   RY..."
7 PRINT "   When someone types in a load of
   rubbish
   (ie fdjddd),the computer          thinks that fdjddd
   is a
   variable."
8 PRINT
10 FOR N%=&A000 TO &A0CA:READ A$
20 POKE N%,VAL("&"+A$):NEXT:C%=40
25 CALL &A000
26 PRINT "Use |VAR to list the variables."
30 DATA 21,09,a0,01,0d,a0,c3,d1,bc,00
31 DATA 00,00,00,12,a0,c3,46,a0,56,41
32 DATA d2,00,52,65,61,6c,00,49,6e,74
33 DATA 65,67,65,72,00,53,74,72,69,6e
34 DATA 67,00,0d,0a,20,20,56,61,72,69
35 DATA 61,62,6c,65,73,3a,0a,00,11,2a
36 DATA a0,1a,b7,c8,cd,5a,bb,13,18,f7
37 DATA cd,3a,a0,21,70,01,5e,23,56,2b
38 DATA 7a,b3,28,03,19,18,f5,23,23,23
39 DATA 23,7e,b7,c8,47,cb,bf,cd,5a,bb
40 DATA 23,cb,78,28,f2,4e,06,05,3e,2e
41 DATA cd,5a,bb,10,fb,79,fe,01,20,0c
42 DATA 11,1b,a0,cd,3d,a0,11,05,00,19
43 DATA 18,2a,fe,04,20,0c,11,16,a0,cd
44 DATA 3d,a0,11,08,00,19,18,1a,fe,02
45 DATA 20,0c,11,23,a0,cd,3d,a0,11,06
46 DATA 00,19,18,0a,3e,11,cd,5a,bb,3e
47 DATA 0b,cd,5a,bb,e5,cd,78,bb,7d,fe
48 DATA 19,cc,18,bb,26,0d,cd,75,bb,3e
49 DATA 0a,cd,5a,bb,e1,2b,7e,23,b7,ca
50 DATA 5b,a0,c9

```

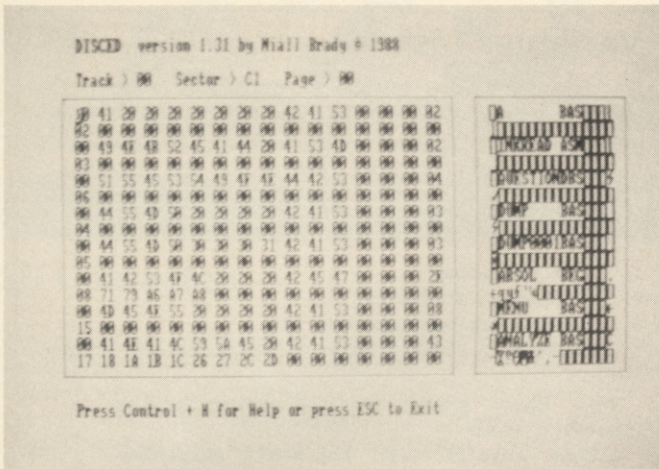
Type-Ins update

Some people - they know who they are - are having trouble with the **disk compactor** program from AA32. The program works - I retyped it to make sure - but it dislikes commercial protected disks. So only use it: a) if you're sure there are no typos and b) not on your fave game. In AA34 we published a program from **J Chan** called

Magazine Editor. A couple of mistakes crept into it (*steps have been taken - ed.*). Insert the following line for a conclusion to the game, and remove the gratuitous decimal point from the `re=nn` statement in line 220:

```
95 END
```

Finally, an apology to **Geraint Jones** whose **Desert Attack** appeared in AA35. I thought that his name was Gavin.



● Sector C1 Track 0, I presume

```

250 DATA DC,3D,18,04,3A,24,96,3C,32,24,96,C3,09,90,3A,23,50A
260 DATA 96,3D,18,04,3A,23,96,3C,32,23,96,C3,09,90,CD,47,579
270 DATA 93,11,00,80,CD,9B,BC,18,09,CD,47,93,21,03,95,CD,696
280 DATA 7F,93,CD,06,BB,CD,3D,93,18,A3,26,1C,CD,CB,93,32,797
290 DATA 23,96,C3,09,90,26,0E,CD,CB,93,32,24,96,C3,09,90,6BC
300 DATA CD,39,94,21,E8,95,CD,7F,93,CD,06,BB,FE,59,20,08,824
310 DATA 3E,85,32,28,96,CD,40,94,CD,20,94,CD,3D,93,C3,0C,741
320 DATA 90,CD,47,93,21,02,96,CD,7F,93,CD,06,BB,FE,59,20,7D4
330 DATA B4,CD,3D,93,C3,00,BB,CD,78,BB,E5,CD,00,BB,E1,E5,A02
340 DATA 24,24,22,26,96,7C,FE,36,30,37,CD,0A,94,CD,81,BB,6B1
350 DATA CD,06,BB,CD,84,BB,FE,FC,28,53,FE,7E,30,EF,FE,20,9C8
360 DATA 38,EB,CD,5A,BB,2A,2C,96,77,23,22,2C,96,E1,F5,CD,812
370 DATA 75,BB,F1,CD,9F,93,2A,26,96,24,E5,CD,75,BB,E1,18,905
380 DATA BE,D1,26,06,2C,7D,FE,15,30,05,22,26,96,18,EB,3A,5C7
390 DATA 25,96,FE,01,28,0E,CD,87,92,CD,E6,92,21,04,34,22,696
400 DATA 26,96,18,D6,CD,1A,94,CD,88,93,C3,0C,90,E1,22,26,795
410 DATA 96,CD,88,93,C3,5D,91,21,00,89,22,2C,96,3E,01,32,62E
420 DATA 25,96,C9,11,1B,00,21,56,01,CD,C0,BB,21,00,00,E5,576
430 DATA 11,90,01,CD,F9,BB,21,F2,FE,D1,D5,CD,F9,BB,E1,E5,B21
440 DATA 11,70,FE,CD,F9,BB,21,0E,01,D1,D5,CD,F9,BB,11,C2,92A
450 DATA 01,21,56,01,CD,C0,BB,E1,E5,11,9A,00,CD,F9,BB,21,7D4
460 DATA F2,FE,D1,D5,CD,F9,BB,E1,E5,11,66,FF,CD,F9,BB,21,BF5
470 DATA 0E,01,D1,C3,F9,BB,21,01,06,CD,75,BB,21,7F,94,CD,77D
480 DATA 7F,93,21,17,06,CD,75,BB,21,D3,94,CD,7F,93,21,03,6D8
490 DATA 0E,CD,75,BB,3A,24,96,CD,9F,93,21,03,1C,CD,75,BB,73B

```

```

500 DATA 3A,23,96,CD,9F,93,21,03,28,CD,75,BB,3A,25,96,CD,6FD
510 DATA 9F,93,ED,5B,2C,96,06,10,2E,05,E5,C5,CD,38,93,CD,794
520 DATA 4C,93,C1,E1,2C,10,F3,C9,26,06,C3,75,BB,3E,02,CD,7A5
530 DATA 0E,BC,3E,C0,C3,08,BC,3E,40,C3,08,BC,D5,06,10,CD,70C
540 DATA 70,93,21,1D,96,CD,7F,93,D1,06,10,1A,13,FE,20,38,620
550 DATA 06,CD,5A,BB,10,F5,C9,D5,C5,CD,5D,BB,C1,D1,18,F4,9D3
560 DATA 1A,13,C5,CD,9F,93,3E,20,CD,5A,BB,C1,10,F2,C9,7E,83B
570 DATA B7,C8,23,CD,5A,BB,18,F7,0E,1A,0C,79,FE,48,C8,CD,81B
580 DATA 30,BB,47,D6,41,D6,1A,30,F1,79,CD,27,BB,18,EB,06,78B
590 DATA 02,4F,CD,B8,93,E6,0F,FE,0A,30,04,C6,30,18,02,C6,670
600 DATA 37,CD,5A,BB,79,10,EE,C9,0F,0F,0F,0F,C9,CD,5A,BB,740
610 DATA D6,30,FE,0A,D4,C8,93,C9,D6,07,C9,2E,03,CD,75,BB,8DA
620 DATA CD,81,BB,21,F2,96,06,02,CD,06,BB,FE,47,30,F9,FE,7F1
630 DATA 30,38,F5,CD,5A,BB,FE,41,38,02,D6,37,77,23,10,EB,757
640 DATA 2B,AF,ED,6F,ED,6F,47,2B,AF,ED,6F,ED,6F,CD,B8,93,983
650 DATA 80,C3,84,BB,3E,01,32,2E,96,C9,06,02,0E,39,7C,B8,603
660 DATA 61,CA,75,BB,04,04,04,0C,18,F5,21,05,06,22,26,96,48A
670 DATA 21,00,88,22,2C,96,AF,32,25,96,3C,32,66,BE,3E,8A,52D
680 DATA 32,28,96,3E,FF,32,78,BE,C9,AF,32,78,BE,C3,47,93,812
690 DATA 21,05,06,22,26,96,AF,32,25,96,21,28,96,CD,D4,BC,5E2
700 DATA 22,29,96,79,32,2B,96,CD,1B,BB,FE,FC,C8,21,00,88,75B
710 DATA 22,2C,96,3A,24,96,57,1E,00,3A,23,96,4F,DE,29,96,52D
720 DATA 30,05,79,32,23,96,C9,3E,10,81,32,23,96,18,D8,44,550
730 DATA 49,53,43,45,44,20,20,76,65,72,73,69,6F,6E,20,31,4EF
740 DATA 2E,33,31,20,62,79,20,4E,69,61,6C,6C,20,42,72,61,4D2
750 DATA 64,79,20,A4,20,31,39,38,38,0D,0A,0A,20,20,20,33C
760 DATA 20,54,72,61,63,6B,20,3E,20,09,09,20,20,20,53,65,3BD
770 DATA 63,74,6F,72,20,3E,20,09,09,20,20,20,50,61,67,65,425
780 DATA 20,3E,00,50,72,65,73,73,20,43,6F,6E,74,72,6F,6C,56C
790 DATA 20,2B,20,48,20,66,6F,72,20,48,65,6C,70,20,6F,72,4C4
800 DATA 20,70,72,65,73,73,20,45,53,43,20,74,6F,20,45,78,528
810 DATA 69,74,00,02,50,72,65,73,73,20,5B,43,4F,4E,54,52,4ED
820 DATA 4F,4C,5D,20,2B,20,5B,6B,65,79,5D,0D,0A,0A,43,20,3E8
830 DATA 2D,20,43,61,74,20,44,69,73,63,0D,0A,50,20,2D,20,3DC
840 DATA 50,61,67,65,20,46,6C,69,70,0D,0A,54,20,2D,52,452
850 DATA 65,61,64,20,54,72,61,63,6B,0D,0A,F0,20,2D,20,4E,501
860 DATA 65,78,74,20,54,72,61,63,6B,0D,0A,F3,20,2D,20,4E,52B
870 DATA 65,78,74,20,53,65,63,74,6F,72,0D,0A,F1,20,2D,20,556
880 DATA 42,61,63,6B,20,54,72,61,63,6B,0D,0A,F2,20,2D,20,4FC
890 DATA 42,61,63,6B,20,53,65,63,74,6F,72,0D,0A,47,20,2D,4AC
900 DATA 20,47,6F,74,6F,20,53,65,63,74,6F,72,0D,0A,41,20,4C1
910 DATA 2D,20,41,73,63,69,69,20,49,6E,70,75,74,0D,0A,57,4D4
920 DATA 20,2D,20,57,72,69,74,65,20,53,65,63,74,6F,72,0D,515
930 DATA 0A,53,20,2D,20,53,74,6F,72,65,20,53,65,63,74,6F,4F5
940 DATA 72,0D,0A,52,20,2D,20,52,65,63,6F,76,65,72,20,53,491

```

Circles

John Dyson, who lives in Penistone, has written a program to work out some arithmetic to do with circles – surely you remember those lessons where PI figured prominently?

This program does all the tough work for you – just type in the radius and so forth and then sit back and let your Amstrad do the rest.

```

1 REM Circles
2 REM By John Dyson
3 REM Amstrad Action September 1988
10 REM MENU
20 PAPER 15:BORDER 22:PEN 2:CLS
30 LOCATE 10,1:PRINT "CIRCLES"
40 LOCATE 10,5:PRINT "1) AREA OF A CIRCLE"
50 LOCATE 10,7:PRINT "2) PERIMETER "
60 LOCATE 10,9:PRINT "3) AREA OF PART OF A CIRCLE"
70 LOCATE 10,11:PRINT "PLEASE TYPE IN A NUMBER"
80 INPUT N::IF N=1 THEN GOTO 120 ELSE 90
90 :IF N=2 THEN GOTO 190 ELSE 100
100 IF N=3 THEN GOTO 260 ELSE 80
110 REM MAIN PROGRAM
120 CLS
130 PRINT "PLEASE INPUT THE RADIUS OF YOUR CIRCLE(IN

```

```

CENTIMETERS"
140 INPUT R
150 A=PI*R*R
160 PRINT "THE AREA OF YOUR CIRCLE IS ";A;" CM'S
    SQUARED"
170 CALL &BB18
180 GOTO 10
190 CLS
200 :PRINT "INPUT THE RADIUS OF YOUR CIRCLE":
210 INPUT R
220 P=PI*R*2
230 PRINT "THE PERIMETER OF YOUR CIRCLE IS ";P;" CM'S"
240 CALL &BB18
250 GOTO 10
260 CLS
261 PRINT "PLEASE INPUT, AS A DECIMAL THE FRACTION OF THE
    CIRCLE YOU WISH TO FIND THE AREA OF"
270 INPUT F
280 PRINT "NOW PLEASE INPUT THE RADIUS OF YOUR CIRCLE"
290 INPUT R
300 A=F*PI*R*R
310 PRINT "YOUR CIRCLE HAS AN AREA OF ";A;" CM'S
    SQUARED"
311 CALL &BB18
320 GOTO 10

```

Advanced Header Reader

We usually don't do repeats (whaddya think we are, ITV?), but this program (submitted by **Edward J Reid** of Drumchapple) is a step up on the last tape header reader that got into *Type-Ins*. To use it, simply run it and then play a program tape into your CPC - which will then display such data as load address, length, and execute address of the file in question.

```

1 ' ADVANCED TAPE HEADER READER
2 ' BY EDWARD JOHN REID
3 ' AMSTRAD ACTION SEPTEMBER 1988
10 GOSUB 410
20 CLS
30 PRINT "Insert tape then press play then any key"
40 CALL &BB06
50 CALL &8000
60 bl.num=PEEK(16400):la.blo=PEEK(16401)
70 fi.typ=PEEK(16402):fi.blo=PEEK(16407)
80 bl.len=PEEK(16403)+256*PEEK(16404)
90 st.add=PEEK(16405)+256*PEEK(16406)
100 le.add=PEEK(16408)+256*PEEK(16409)
110 ex.add=PEEK(16410)+256*PEEK(16411)
120 IF fi.blo=&FF THEN fi.blo$="YES" ELSE fi.blo$="NO"
130 IF la.blo=&FF THEN la.blo$="YES" ELSE la.blo$="NO"
140 IF fi.typ=0 THEN fi.typ$="UNPROTECTED BASIC"
150 IF fi.typ=1 THEN fi.typ$="PROTECTED BASIC"

```

```

160 IF fi.typ=2 THEN fi.typ$="UNPROTECTED BINARY"
170 IF fi.typ=3 THEN fi.typ$="PROTECTED BINARY"
180 IF fi.typ=4 THEN fi.typ$="UNPROTECTED ASCII"
190 IF fi.typ=5 THEN fi.typ$="PROTECTED ASCII"
200 IF fi.typ>6 THEN fi.typ$="FUNNY TAPE FORMAT"
210 FOR loop=16384 TO 16399:byte=PEEK(loop)
220 IF byte=0 THEN loop=16400:GOTO 240
230 name$=name$+CHR$(byte)
240 NEXT loop
250 MODE 1
260 LOCATE 9,1:PRINT "Header Reader Mk1.9"
270 LOCATE 9,2:PRINT "By Edward John Reid":PRINT
280 PRINT "FILE NAME      : ";name$:PRINT
290 PRINT "FIRST BLOCK     : ";fi.blo$:PRINT
300 PRINT "LAST BLOCK      : ";la.blo$:PRINT
310 PRINT "BLOCK NUMBER    : ";bl.num:PRINT
320 PRINT "FILE TYPE NO    : ";fi.typ:PRINT
330 PRINT "FILE TYPE      : ";fi.typ$:PRINT
340 PRINT "START ADDRESS  : &";HEX$(st.add,4):PRINT
350 PRINT "LENGHT        : &";HEX$(le.add,4):PRINT
360 PRINT "EXUC ADDRESS  : &";HEX$(ex.add,4):PRINT
370 PRINT "BLOCK LENGHT  : &";HEX$(bl.len,4):PRINT
380 LOCATE 8,25:PRINT "PRESS ANY KEY TO CONTINUE"
390 WHILE INKEY$="" :WEND
400 MODE 1:GOTO 20
410 READ a$:IF a$="END" THEN RETURN
420 POKE &8000+i,VAL("&"a$)
430 i=i+1:GOTO 410
440 DATA 3e,2c,11,40,00,21,00,40,cd,a1,bc,c9,END

```

```

950 DATA 65,63,74,6F,72,0D,0A,00,07,18,2A,2A,20,57,72,69,3F9
960 DATA 74,65,20,64,69,73,63,20,28,59,2F,4E,29,20,2A,2A,457
970 DATA 18,00,07,18,2A,2A,20,45,78,69,74,20,44,49,53,43,388
980 DATA 45,44,20,28,59,2F,4E,29,20,2A,2A,18,00,09,09,09,277
990 DATA 09,09,00,C1,00,00,00,00,00,00,00,00,00,00,00,0D3
1000 n=16:a=&9000:l=10:WHILE l<1000:GOSUB 1010:WEND:GOTO 1050
1010 cs=0:FOR x=1 TO n:READ v$:v=VAL("&"v$):POKE a,v
1020 cs=cs+v:a=a+1:NEXT:READ c$:c=VAL("&"c$)
1030 IF c<>cs THEN PRINT"Data error in line ",l:END
1040 l=l+10:RETURN
1050 INK 1,26:CALL &9000
1060 MODE 2:PRINT"Type call &9000 to run DISCED

```

Treasure Hunt

Here a rare *Type-In*, an excellent game. But let the author tell you about it for himself.

```

1 'Treasure Hunt
2 'By Benedict Garret
3 'Amstrad Action September 1988
10 ' Variables, inks, graphics.
20 MODE 0:sc=0:lev=1:scr=0
30 INK 0,11:BORDER 11
40 INK 1,24:INK 2,6:INK 3,0:INK 4,15,3
50 RANDOMIZE TIME:SYMBOL AFTER 250
60 SYMBOL 250,255,171,213,171,213,171,213,255
70 SYMBOL 251,8,8,8,28,28,62,62,127
80 SYMBOL 252,60,126,219,255,129,195,126,195
90 SYMBOL 253,0,0,60,126,219,255,126,195
100 ' Machine code ( Thanks Rpm ).
110 FOR t=&BF00 TO &BF06
120 READ a$
130 POKE t,VAL("&"a$)
140 NEXT
150 DATA cd,60,bb,32,07,bf,c9
160 ' Game preparation
170 CLS
180 LOCATE 1,1:PEN 3:PRINT"TREASURE HUNT By Ben"

```

Screen Grabber

A very useful little program from **Paul Rooney** who lives in Normanton. Simply run it, and load another program as normal. By pressing control and the spacebar the computer will save whatever is on the screen. A word to tape users though - make sure the record and play buttons are pressed before you try to grab the picture, because the tape messages are disabled.

And it doesn't work on every game. But you might be surprised by what it can copy.

```

1 'Screen Grabber
2 'Paul Rooney
3 'Amstrad Action September 1988
10 FOR T=&AFD9 TO &B01E:READ A$: POKE
T,VAL("&"A$):NEXT
20 CALL &B000
30 DATA 06,0A,21,F6,AF,11,00,90
40 DATA cd,8c,bc,21,00,c0,11,00
50 DATA 40,01,00,c0,3e,02,cd,98
60 DATA bc,cd,8f,bc,c9,53,43,52
70 DATA 45,45,4E,2E,42,49,4E,01
80 DATA ff,81,11,0c,b0,21,27,b0
90 DATA c3,e0,bc,3e,2f,cd,1e,bb
100 DATA c8,79,fe,80,c0,3E,01,CD
110 DATA 6B,BC, 21,D9,AF,e9

```

```

190 LOCATE 1,2:PRINT STRING$(20,"=")
200 LOCATE 5,12:PRINT"Q to Quit"
210 PEN 1
220 LOCATE 2,4:PRINT"*** USE JOYSTICK ***"
230 LOCATE 2,14:PRINT"L to change level."
240 LOCATE 1,24:PRINT"< Any key to start >"
250 PEN 2
260 LOCATE 3,6:PRINT CHR$(240);"...move up."

```

Personal Spending

K.R. Street's accounts package works on all disk machines. Just follow these few simple steps:

- First make sure that your keyboard doesn't have **CAPS LOCK** on. Next run the program and enter the start month.
- Now go down the list entering your expenditure - dates, description, amount and account (just who spent it), and press return. Enter the word 'end' to force a save.
- Remember to make sure the write protect is off!

```

10 REM PERSONAL SPENDING
20 REM By K R Street
30 REM Amstrad Action September 1988
40 MODE 1:CLS
50 BORDER 1:PAPER 0:PEN 2
60 LOCATE 16,5:PRINT"ACCOUNTS":LOCATE
16,6:PRINT"=====":
  LOCATE 17,6:PRINT"=====
70 PEN 2:LOCATE 13,11:PRINT"E":PEN 3:LOCATE 14,11:PRINT
  "nter new data"
80 PEN 2:LOCATE 13,15:PRINT"N":PEN 3:LOCATE 14,15:PRINT
  "ew month"
90 PEN 2:LOCATE 13,19:PRINT"R":PEN 3:LOCATE 14,19:PRINT
  "efer old month"
100 menu$=INKEY$:IF menu$=" "GOTO 100
110 IF menu$="e" THEN GOTO 500
120 IF menu$="n" GOTO 750
130 IF menu$="r" THEN GOTO 170
140 GOTO 100
150 CLS
160 REM ***** REFER OLD WEEK *****
170 CLS:LOCATE 26,14:PRINT"=====
180 LOCATE 10,13:PEN 2:INPUT "ENTER MONTH NO: ",file$:
  GOSUB 910
190 LOCATE 29,1:PRINT "REFER OLD MONTH"
200 OPENIN file$
210 LET z=0:LET t=0
220 IF EOF=-1 THEN CLS:LOCATE 34,9:PRINT "NO MORE DATA":
  LOCATE 32,13:PRINT "PRESS M FOR MENU":GOTO 330
230 INPUT #9,a$,b$,c,d$,e$:PRINT #1,a$:PRINT
#2,UPPER$(b$):
  PRINT #3,"£":c:PRINT #4,UPPER$(d$):PRINT
#5,UPPER$(e$)
240 LET t=t+c
250 LET z=z+1:IF z=14 GOTO 330
260 IF EOF=-1 GOTO 270 ELSE 230
270 PRINT #3,"-----":PRINT #3,"£":t
280 PEN 3:LOCATE 6,24:PRINT"N:Next sheet"
290 PEN 3:LOCATE 26,24:PRINT"P:Print file"
300 PEN 3:LOCATE 45,24:PRINT"M:Menu"
310 PEN 3:LOCATE 57,24:PRINT "E:Enter new data"
320 CLOSEIN
330 f$=INKEY$:IF f$=" " THEN GOTO 330
340 IF f$="n" GOTO 380
350 IF f$="p" GOTO 410
360 IF f$="m" GOTO 40
370 IF f$="e" THEN CLOSEIN:CLS:CLS #1:CLS #2:CLS #3:CLS #4:
  CLS #5:GOSUB 910:GOTO 530
380 CLS #1:CLS #2:CLS #3:CLS #4:CLS #5
390 GOTO 220
400 REM ***** PRINT
FILE*****
410 CLOSEIN:OPENIN file$
420 PRINT #8,"DATE","CHEQUE No / DESCRIPTION"," COST",
  "PAID TO"," A/K"
430 PRINT #8,"-----
--
-----"
440 INPUT #9,a$,b$,c,d$,e$
450 WIDTH 255
460 PRINT
#8,a$:TAB(14);UPPER$(b$);TAB(40);c:TAB(53);UPPER$(
  d$);TAB(78);UPPER$(e$)
470 IF EOF=0 GOTO 440 ELSE CLOSEIN:GOTO 480
480 PRINT #8,TAB(35);"-----"
490 PRINT #8,TAB(35);"TOTAL";t:GOTO 330
500 REM ***** ENTER NEW DATA *****
510 CLS:LOCATE 26,14:PRINT"=====
520 LOCATE 10,13:PEN 2:INPUT "ENTER MONTH NO: ",file$:
  GOSUB 910
530 LOCATE 30,1:PRINT "ENTER NEW DATA"
540 CLS #1:CLS #2:CLS #3:CLS #4:CLS #5
550 OPENIN file$
560 OPENOUT "temp"
570 INPUT #9,a$,b$,c,d$,e$
580 WRITE #9,a$,b$,c,d$,e$
590 IF EOF=-1 GOTO 600 ELSE 570
600 CLOSEIN
610 INPUT #1,"",a$:IF a$="end" THEN GOTO 660 ELSE 620
620 INPUT #2,"",b$:INPUT #3,"£",c
630 INPUT #4,"",d$:INPUT #5,"",e$
640 WRITE #9,a$,b$,c,d$,e$
650 GOTO 610
660 CLOSEOUT
670 OPENIN "temp"
680 OPENOUT file$
690 INPUT #9,a$,b$,c,d$,e$
700 WRITE #9,a$,b$,c,d$,e$
710 IF EOF=-1 GOTO 720 ELSE 690
720 CLOSEOUT:CLOSEIN
730 GOSUB 910:GOTO 190
740 REM ***** NEW MONTH
*****
750 CLS:LOCATE 13,4:PRINT"START NEW MONTH"
760 LOCATE 13,5:PRINT"=====
770 LOCATE 18,9:PRINT"MENU"
780 LOCATE 18,10:PRINT"=====
790 LOCATE 27,16:PRINT"=====
800 LOCATE 8,15:PEN 2:INPUT "ENTER NEW MONTH NO:",file$
810 GOSUB 910:LOCATE 32,1:PRINT "NEW MONTH"
820 OPENOUT file$
830 INPUT #1,"",a$:IF a$="end" THEN GOTO 880 ELSE 840
840 INPUT #2,"",b$:INPUT #3,"£",c
850 INPUT #4,"",d$:INPUT #5,"",e$
860 WRITE #9,a$,b$,c,d$,e$
870 GOTO 830
880 CLOSEOUT
890 CLS #1:CLS #2:CLS #3:CLS #4:CLS #5
900 GOTO 200
910 REM ***** DISPLAY SHEET *****
920 CLS:MODE 2:PEN 1:PAPER 0:BORDER 1
930 MOVE 2,340:DRAW 610,0:DRAW 0,-295:DRAW -
  610,0:DRAW
  0,295
940 MOVE 2,315:DRAW 610,0:MOVE 85,340:DRAW 0,-295
950 MOVE 320,340:DRAW 0,-295:MOVE 410,340:DRAW 0,-295
960 MOVE 580,340:DRAW 0,-295:WINDOW #1,2,10,7,22
970 PAPER #1,0:CLS #1:WINDOW #2,13,38,7,22
980 PAPER #2,0:CLS #2:WINDOW #3,42,51,7,22
990 PAPER #3,0:CLS #3:WINDOW #4,53,70,7,22
1000 PAPER #4,0:CLS #4:WINDOW #5,74,76,7,22
1010 PAPER #5,0:CLS #5
1020 LOCATE 30,3:PRINT"MONTH NO:":LOCATE 39,3:PRINT file$:
  LOCATE 2,5:PRINT"DATE":LOCATE 13,5:PRINT"CHEQUE No
  / DISCRPTION"
1030 LOCATE 42,5:PRINT"COST":LOCATE 53,5:PRINT"PAID TO":
  LOCATE 74,5:PRINT"A/K":RETURN

```

Personal Spending

K.R. Street's accounts package works on all disk machines. Just follow these few simple steps:

- First make sure that your keyboard doesn't have **CAPS LOCK** on. Next run the program and enter the start month.
- Now go down the list entering your expenditure - for which the dates, description, amount and account (just who spent it), and press return. Enter the word 'end' to force a save.
- Remember to make sure that the write protect is off!

```

10 REM PERSONAL SPENDING
20 REM By K R Street
30 REM Amstrad Action September 1988
40 MODE 1:CLS
50 BORDER 1:PAPER 0:PEN 2
60 LOCATE 16,5:PRINT"ACCOUNTS":LOCATE
16,6:PRINT"=====":
  LOCATE 17,6:PRINT"=====
70 PEN 2:LOCATE 13,11:PRINT"E":PEN 3:LOCATE 14,11:PRINT
  "nter new data"
80 PEN 2:LOCATE 13,15:PRINT"N":PEN 3:LOCATE 14,15:PRINT
  "ew month"
90 PEN 2:LOCATE 13,19:PRINT"R":PEN 3:LOCATE 14,19:PRINT
  "efer old month"
100 menu$=INKEY$:IF menu$=" "GOTO 100
110 IF menu$="e" THEN GOTO 500
120 IF menu$="n" GOTO 750
130 IF menu$="x" THEN GOTO 170
140 GOTO 100
150 CLS
160 REM ***** REFER OLD WEEK *****
170 CLS:LOCATE 26,14:PRINT"=====
180 LOCATE 10,13:PEN 2:INPUT "ENTER MONTH NO: ",file$:
  GOSUB 910
190 LOCATE 29,1:PRINT "REFER OLD MONTH"
200 OPENIN file$
210 LET z=0:LET t=0
220 IF EOF=-1 THEN CLS:LOCATE 34,9:PRINT "NO MORE DATA":
  LOCATE 32,13:PRINT "PRESS M FOR MENU":GOTO 330
230 INPUT #9,a$,b$,c,d$,e$:PRINT #1,a$:PRINT
#2,UPPER$(b$):
  PRINT #3,"£";c:PRINT #4,UPPER$(d$):PRINT
#5,UPPER$(e$)
240 LET t=t+c
250 LET z=z+1:IF z=14 GOTO 330
260 IF EOF=-1 GOTO 270 ELSE 230
270 PRINT #3,"-----":PRINT #3,"£";t
280 PEN 3:LOCATE 6,24:PRINT"N:Next sheet"
290 PEN 3:LOCATE 26,24:PRINT"P:Print file"
300 PEN 3:LOCATE 45,24:PRINT"M:Menu"
310 PEN 3:LOCATE 57,24:PRINT "E:Enter new data"
320 CLOSEIN
330 f$=INKEY$:IF f$="" THEN GOTO 330
340 IF f$="n" GOTO 380
350 IF f$="p" GOTO 410
360 IF f$="m" GOTO 40
370 IF f$="e" THEN CLOSEIN:CLS:CLS #1:CLS #2:CLS #3:CLS #4:
  CLS #5:GOSUB 910:GOTO 530
380 CLS #1:CLS #2:CLS #3:CLS #4:CLS #5
390 GOTO 220
400 REM ***** PRINT
FILE*****
410 CLOSEIN:OPENIN file$
420 PRINT #8,"DATE","CHEQUE No / DESCRIPTION"," COST",
  "PAID TO"," A/K"
430 PRINT #8,"-----"
--
-----
440 INPUT #9,a$,b$,c,d$,e$
450 WIDTH 255
460 PRINT
#8,a$;TAB(14);UPPER$(b$);TAB(40);c;TAB(53);UPPER$(
d$);TAB(78);UPPER$(e$)
470 IF EOF=0 GOTO 440 ELSE CLOSEIN:GOTO 480

480 PRINT #8,TAB(35);"-----"
490 PRINT #8,TAB(35);"TOTAL";t:GOTO 330
500 REM ***** ENTER NEW DATA *****
510 CLS:LOCATE 26,14:PRINT"=====
520 LOCATE 10,13:PEN 2:INPUT "ENTER MONTH NO: ",file$:
  GOSUB 910
530 LOCATE 30,1:PRINT "ENTER NEW DATA"
540 CLS #1:CLS #2:CLS #3:CLS #4:CLS #5
550 OPENIN file$
560 OPENOUT "temp"
570 INPUT #9,a$,b$,c,d$,e$
580 WRITE #9,a$,b$,c,d$,e$
590 IF EOF=-1 GOTO 600 ELSE 570
600 CLOSEIN
610 INPUT #1,"",a$:IF a$="end" THEN GOTO 660 ELSE 620
620 INPUT #2,"",b$:INPUT #3,"£",c
630 INPUT #4,"",d$:INPUT #5,"",e$
640 WRITE #9,a$,b$,c,d$,e$
650 GOTO 610
660 CLOSEOUT
670 OPENIN "temp"
680 OPENOUT file$
690 INPUT #9,a$,b$,c,d$,e$
700 WRITE #9,a$,b$,c,d$,e$
710 IF EOF=-1 GOTO 720 ELSE 690
720 CLOSEOUT:CLOSEIN
730 GOSUB 910:GOTO 190
740 REM ***** NEW MONTH
*****
750 CLS:LOCATE 13,4:PRINT"START NEW MONTH"
760 LOCATE 13,5:PRINT"=====
770 LOCATE 18,9:PRINT"MENU"
780 LOCATE 18,10:PRINT"====
790 LOCATE 27,16:PRINT"=====
800 LOCATE 8,15:PEN 2:INPUT "ENTER NEW MONTH NO:",file$
810 GOSUB 910:LOCATE 32,1:PRINT "NEW MONTH"
820 OPENOUT file$
830 INPUT #1,"",a$:IF a$="end" THEN GOTO 880 ELSE 840
840 INPUT #2,"",b$:INPUT #3,"£",c
850 INPUT #4,"",d$:INPUT #5,"",e$
860 WRITE #9,a$,b$,c,d$,e$
870 GOTO 830
880 CLOSEOUT
890 CLS #1:CLS #2:CLS #3:CLS #4:CLS #5
900 GOTO 200
910 REM ***** DISPLAY SHEET *****
920 CLS:MODE 2:PEN 1:PAPER 0:BORDER 1
930 MOVE 2,340:DRAWR 610,0:DRAWR 0,-295:DRAWR -
610,0:DRAWR
0,295
940 MOVE 2,315:DRAWR 610,0:MOVE 85,340:DRAWR 0,-295
950 MOVE 320,340:DRAWR 0,-295:MOVE 410,340:DRAWR 0,-295
960 MOVE 580,340:DRAWR 0,-295:WINDOW #1,2,10,7,22
970 PAPER #1,0:CLS #1:WINDOW #2,13,38,7,22
980 PAPER #2,0:CLS #2:WINDOW #3,42,51,7,22
990 PAPER #3,0:CLS #3:WINDOW #4,53,70,7,22
1000 PAPER #4,0:CLS #4:WINDOW #5,74,76,7,22
1010 PAPER #5,0:CLS #5
1020 LOCATE 30,3:PRINT"MONTH NO:":LOCATE 39,3:PRINT file$:
  LOCATE 2,5:PRINT"DATE":LOCATE 13,5:PRINT"CHEQUE No
/ DISCRPTION"
1030 LOCATE 42,5:PRINT"COST":LOCATE 53,5:PRINT"PAID TO":
  LOCATE 74,5:PRINT"A/K":RETURN

```

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THE PILGRIM

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Return to Doom

Topologika ● £12.95 ● disk only

'We wouldn't claim', begins the press release from Topologika concerning *Return to Doom*, 'that the release of a new adventure game from the pen of Peter Killworth is earth-shattering news...'. The Pilg certainly can't contradict them on that point, but at a time when we are besieged by hi-tech adventures from Magnetic Scrolls and Level 9, playing *RTD* was far more enjoyable than I expected. If you have an urge to go back in time and play a real old-fashioned text adventure, this game should satisfy it.

To start with, long-lived Pilgs may remember my taking Mr Killworth to task for leaving out the EXAMINE command in his adventure *Countdown to Doom* and sticking to a hopelessly outdated parser. Mr K wrote in to the column (see AA27) stoutly defending his position and in this latest game he has stuck by his guns... so there's still no EXAMINE, and still a very ancient system.

Dr Jekyll and Mr Hyde

- A Gothic Nightmare

The Essential Myth ● £12.95 ● Disk only

This latest game from The Essential Myth should be available in the next couple of weeks. The Pilg has seen a Spectrum version which, sadly, failed to load, but we'll review it on the CPC next month. Messrs Hodgson and friends, founders of this long-established small mail-order software house, have certainly hit on a good idea for a game...

The program is in three parts, called Dichotomies, Duality, and Denouement. It's a text-and-graphics adventure produced using the PAW and the company defend the high price of the package by saying that: 'Although we primarily used a utility to write the game, we feel that the pricing structure decided for the program is justified. The game took 6 months to write and test, and due to the limitations of PAW quite a lot of the game had to be programmed outside of the utility'.

The boys have certainly packed in a few useful features. The game features MEMSAVE (i.e. to RAM), as well as disk and tape load/save options. You can address other characters using the SAY TO name 'MESSAGE' format as well as ASK name ABOUT and TALK TO name ABOUT constructs. Interestingly, when you are asked a direct question by a character, the prompt and cursor change to an open and closed quotes to save typing for your reply.

Multiple commands are also possible, together with use of pronouns. Finally, you get the useful OOPS command.

It's also worth mentioning that Essential Myth are on the look-out for programs suitable for publication. They stress that they will accept GACed games only under exceptional circumstances, preferring PAWed adventures or those written using your own system. Originality is, of course, essential. Their address is:

The Essential Myth, 54 Church Street, Tewkesbury, Glos, GL20 5RZ

Watch out for the review next month and discover whether that £12.95 is really justified!

The plot is pretty straightforward. The planet Doom is playing host to an unwilling party of politicians who have crash landed on its surface and been kidnapped by some runaway robots. Defying Newtonian physics, you pop over to the planet in the time it takes to load up the game and attempt to rescue the survivors.

RTD is disk only and does a fair bit of disk accessing during play. The text-only display flags the name of your current location and your score at the top of the screen, and below prints out descriptions in either VERBOSE or NORMAL mode. This is something of an improvement on earlier Killworth games, but unfortunately it misses the mark. In *RTD*, VERBOSE prints a lengthy description every time, and NORMAL does so only on your first visit to a location. What's lacking is a BRIEF command, which *always* prints brief descriptions - the whole point being that when you have played the game several times you want to be able to move through it faster to get to the right point. And believe me, you'll be RESTARTING this game fairly often.

Helping hand

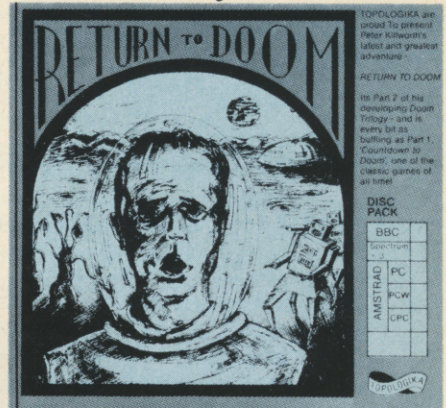
Other obvious improvements include the provision of on-line help. The cassette inlay comes with a list of 88 numbered hints, and typing HELP during play prompts you for a number. Enter the number and you'll receive a series of hints concerning the relevant problem, culminating (if you want it) in the final solution. Whatever its other drawbacks, *RTD* can now claim to have the best on-line help facility of any game I've seen.

You can also string together multiple commands using AND, THEN, or simply commas. Again, this can save time when you know what you're doing. Saving to disk is fairly quick, but there is no RAMSAVE and no ability to catalogue your saved filenames while playing - both features it would be nice to see included.

It's debatable whether the excellent on-line help is really such a good thing, however, and that brings to me the game itself. If ever there was a program that relied on puzzling, this is it. From the very first screen you are confronted with a host of puzzles that prevent you from moving more than a couple of locations in any direction. If you're not chomped to death, squeezed to death, torn to death, or spiked to death, you're extremely lucky.

The puzzles are bad enough at the beginning, but after you've progressed a while they become positively devilish. It's at this point that the on-line help begins to exert a very unhealthy influence and unless you have a will cast from titanium you'll find yourself resorting to it more often than is good for you. If you can't resist, you might as well throw the game away - because puzzling is what it's all about. The lure of the adventure is definitely of the 'I wonder how I can do that' variety, and not of the 'Wow! Here I am in another world' type. Thought, not fantasy, is the name of the game.

Unfortunately, some of the frustration is not entirely enjoyable. To start with, the parser really is rather primitive and can actually mislead the player on occasions. There are certain puzzles which you can solve intuitively, but then be misled by the parser into



thinking you have got the wrong approach. To open a door, for example, you naturally try to KNOCK ON DOOR, but the program won't accept this and definitely gives the impression that this is the input of a misguided adventurer. It's a bit annoying to discover (after resorting to the on-line help, of course) that the required input is simply KNOCK. That's what I was doing! This happens on a number of different occasions...

There is an enormous diversity of locations, puzzles, and dangers in this game. Frequent SAVES will be necessary and it will take a while to solve (without the help). It also introduces a small measure of interaction with a character not unlike the Dagget in *Worm in Paradise*. Despite the primitive nature of the programming and presentation, it's a very enjoyable game that should

challenge dedicated puzzlers anywhere. Unfortunately, for a game full of tricky problems, the biggest problem is the price.

ATMOSPHERE	65%	INTERACTION	58%
CHALLENGE	85%	OVERALL	70%

Next month....

The new-look Pilg column continues, with heaps more tips, letters, reviews, and news of adventuring. We'll also be quizzing the software houses to discover what's on the menu for the next few months for Arnold adventurers.

Rigel's Revenge not so deadly

Nigel Brooks, one of the creators of *Rigel's Revenge*, has telephoned us to help clear up problems encountered by those who have bugged copies of the game.

Apparently Mastertronic have (and have had for some time) debugged versions of the adventure. Unfortunately, these versions are not distinguishable from the outside from the ones with the bugs! If you have a bugged version, Nigel suggests that the only solution is to send your copy to Mastertronic for a replacement. Their address should be on the packaging for the game.

Lancelot launch

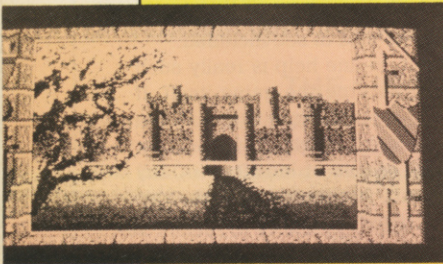
Level 9's long-awaited adventure based on the Arthurian legends is to be launched in early September and should be available as you read this. It costs £14.95, is published via Mandarin (who did *Time and Magic*) and is available for both CPC and PCW machines. All versions include a background story and a parchment map of Arthurian England.

This game is vital for Level 9's continuing reputation as a major-league adventure house. Despite their innovations in programming, particularly where characters are concerned, the plots of their recent games - *Knight Orc* and *Gnome Ranger* - have been slightly below par for the course.

Lancelot is important because it could show Level 9 going back to what they do best - myth-making. Their old Middle Earth titles established a strong reputation for the company, and deservedly so. Now they have a vastly improved system. All they need is a game that is worthy of it.

The game comes in three separate parts, each a mini-adventure in its own right. The company claim that there are over 60,000 words of text, plus high quality graphics, and a sneak preview at screenshots on the 16-bit versions certainly seems to confirm the latter.

"The legends of King Arthur and his Knights of the Round Table are known to all", says Pete Austin, "but it is a sad fact that most modern interpretations seem to owe nothing to the original tales". Let's hope they put all that right.



● Lancelot in 16 bit - but how will the conversion look?

Contact The Pilg

The Pilg is always delighted to hear from readers, and although he can't answer personally he always considers publishing letters of interest to adventurers on these pages. To have your say on any aspect of, or related to, adventuring, write to:

The Pilgrim, Amstrad Action, 4 Queen Street, Bath

Ingrid's back - but..!

As well as launching *Lancelot* through Mandarin, Level 9 are keeping their hand in by releasing a sequel to *Gnome Ranger* themselves.

Called *Gnome II: Ingrid's Back*, the game features the infuriating Ingrid Bottomlow as she horrifies the inhabitants of her home town of Little Moaning. She seeks fame and fortune by attempting to put a stop to the development plans of Jasper Quickbuck, lord of Ridley's Manor, which threaten 'this quiet corner of the gnome belt'.

Level 9 have often introduced political themes into their games - such as the totalitarian state in *Worm in Paradise* - but they tend to be rather hesitant about it. Perhaps the Austins should produce the first *really* political adventure and introduce a few Bennites instead of all these gnomes.

Meanwhile, 464 owners can gnash their teeth. The game is on disk only for the CPC's. Shame on you, Level 9!



● Ingrid's back (geddit?)

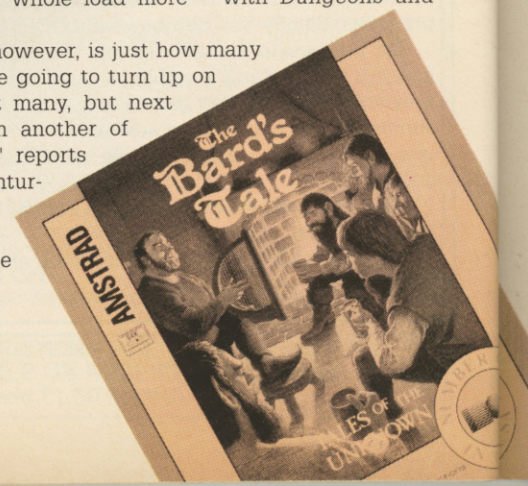
Role playing to pass us by?

It was great to get *The Bard's Tale*, wasn't it?

What isn't so great is that we may not be getting many more fantasy RPG's on the Amstrads. Since *BT* the 16-bit market has been basking in the sun with its copies of *Wasteland* (a new RPG from the BT team), *BT 2* and *3*, *Questron II*, *Might and Magic*, and a whole load more - with *Dungeons and Dragons* to come!

The question, however, is just how many of these games are going to turn up on the Amstrad? Not many, but next month we publish another of our 'state of play' reports for Arnold adventurers, so you can catch up on what to expect in the next 12 months.

Don't miss it!



The lords and ladies of adventure

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David Liddell, 91 Orbiston Drive, Bellshill, ML4 2LX

Star Wreck, Lurking Horror, Pawn, Khobyashi Naru, Gems of Stradus, Forest at Worlds End, Jewels of Babylon, Message from Andromeda, Heroes of Karn, Aftershock, Warlord, Red Moon, Snowball, Dungeon Adventure, Adventure Quest, Hobbit, Necris Dome, Souls of Darkon, Lords of Time, Theseus, Robin of Sherlock, Buggy, Mordens Quest, Questprobe III, Very Big Cave Adventure, Boggit, Dodgy Geezers, Redhawk, Sorcerer, Hitchhikers Guide, Nythyhel,

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Pilgrim post

Just space for a letter from Joan Pancott, which naturally warmed the cockles of the Pilgy's heart, plus a couple of other brief missives from dearly beloved readers...

Well Done Pilgy

Congratulations on bringing back the old style Adventure Column with clues, readers' letters, and the Lords and Ladies. Not only have I enjoyed reading it, but it will mean an end to the complaints that I have had to listen to over the last few months when we have had or or two of the above mentioned, but not all three. The complaints have come from people ringing me for adventure help and some of them think that because I offer help through AA, I am an employee and in some way responsible for the content of the column. I have put them straight on that point, but I would like all of your readers to know that if my name does not appear on

the *Lords and Ladies* it is because I have not sent in my list, not because I have stopped giving help.

My very best wishes to all at AA and fellow adventurers here and overseas.

Joan Pancott, Weymouth.

It's always difficult to fit EVERYTHING into four pages! What we've tried to do is give readers some variety - with the programming, market survey, previews, and so on. From now on we will be giving you a little bit of everything - I hope you approve!

Grrrr!

I am writing to complain about 6128 only games (e.g. *Corruption, Jinxter*). I think it is unfair to us 464 and 664 owners who can't get these games!

Is it not possible for companies to make a revised edition for all us poor pilgys?

Michael Dickinson, Atherton

It's certainly a problem, Michael. The trouble is that

adventure software is slowly changing - disk-based games are becoming more common, and programmers are putting more into their games in the way of text, graphics, and icons. All this requires more memory - it's not just the disk operating system of the 6128 that programmers are making use of, but also the extra RAM. The Pilg continues to do his best to persuade companies to release 464 (and 6128 versions) of their games, but it's an uphill task.

I'll Help!

In the August issue you replied to a letter from Mr Neary complaining about the lack of reviews of home-grown and mail-order adventures. You stated in your reply that unfortunately you did not have

the time to review these products.

I would therefore like to offer my services, should you be interested...

William Bailey, Hatfield

Thanks for the offer, William. With the growing absence of major league games for Amstrad adventurers, the role of smaller companies is obviously growing in importance. And due to other developments I am no longer as busy as I was.

This means a return to the old-style Pilgrim column, and a better deal for all (including me).

If ever I need help, I'll call - but in the meantime, please could smaller companies continue to keep me updated on their operations?

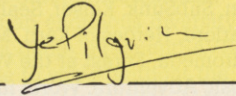
Adventure program

Everyone who wrote in for a copy of the adventure listing should now have received their programs. So next month we can get back to printing routines for you to add into your games. Don't miss it!

Clue sniffing with the Pilgrim

This is the only true clue pot for people Note well these names:

in sticky situations. Accept no imitations.
None genuine without this signature...



William J Bailey, Worcester
Jason Ruffel, Bexley Heath
Andre Nieuwenhuize, New Zealand

These Honorary Pilgs have earned everlasting gratitude for sending in their tips for this month's *Clue Pot*. You too can help fellow adventurers out of their misery, as well as having the satisfaction of seeing your name in print and published around the world...

KNIGHT ORC CLUE CAULDRON!

A bumper load of tips for this Level 9 teaser from Andre Nieuwenhuize, New Zealand. Never have so many owed so much to someone from so far away!

To get the **troll's wallet**.
Go to bridge, cast eye, fireball
Eye, "wait 2, open bolt"
Fireball, "wait 1, open bolt"
Open door, N, Get wallet

...and don't forget to answer **NO** to the troll's question.

To get the **silver ring**, get the eye and the fireball to help pull up the slimy rope on the troll toll bridge.

Put the ring in the hot fire to learn the **EXORCISE** spell.

To learn the **FLY** spell, find driftwood lump, cast exorcise at lump, examine lump.

Cast fly at statue, examine statue, to learn the **SHIELD** spell.

STATIONFALL

The form to open the iris door to the village can be found in the dustbin on level 7. To authorise it, use the stamp found under the station commander's bed. The form is too crumpled to go in the slot, so take it to the laundry on level 3...

In Shady Dan's rocket is a machine that gives you a higher rank if you place your ID Card in it. Turn it on and press No 7. This gives the card the rank of commander and lets you open the security doors.

The gun found in the armoury can be used to destroy welders, but it has limited shots.

To learn the **SWORD** spell, go to the dead end by the smelly kitchen and cast jump west.

Cast shield at me will allow you to enter the castle and cast fly at me to fly above the acid pool. Cast sword and press button with broadsword to open the door.

Examine the dagger found in the prison cell to get the **TELEPORT** spell.

To open the booby-trapped door you must be wearing the rusty armour and the ball and chain.

To get the **reprogrammer**.

Load **HORDES OF THE MOUNTAIN KING**.
Get yourself killed.
Whilst sitting in the cloud, open door.
Now remove visor.
The metal door will be open, so go east.

Once you have the reprogrammer, you can recruit the dragon,

troll, and mouse.

Enter the tomb with the garlic, then wait for someone to come.

Cast the cold spell at the fire and examine the grate.

Enter the bedroom, close the door, and try to get the mouse. If he escapes, fill up his escape hole by putting something in it. When the mouse has nowhere to go, drop the floursack.

SPELLBREAKER

Look in the zipper.

To get the cube in the hermit's hut, cashly the hut so the cube is no longer needed and the hermit lets you take it.

The blue carpet can be bought for 500 zorkmids or the opal if you bargain.

Cashly the moldy book so you can read and copy the spell.

Write different names on the cubes so you can tell them apart.

Cast the knives spell at the overhanging ropes.

Cast the slow spell at the mouse. The dragon hates mice!

Find anthill, cast eye spell and command the eye to kill the ants, then start killing them yourself until you can take the disk.

Give the rat pie to Grok to get the map.

Find the apple tree, command the eye to wait 1 and catch the apple, then type 'shake tree'.

To clean the plaque, cast eye, command eye to wait 1 and wipe plaque, then wipe plaque yourself.

SCARY TALES

To find a coin, dig a hole in the garden using a spade.

Plant the beans in the garden, then fill a bucket with water from the well on the hill and water the sprout.

To kill the giant, tie his shoelaces together.

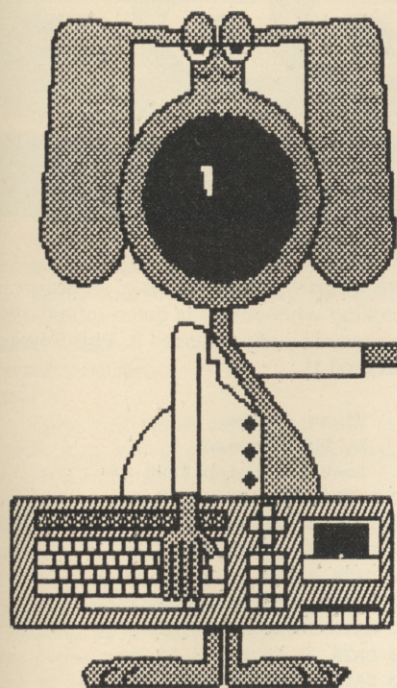
To release the old granny, give her a currant cake. When she offers you a gift, give her the golden egg.

To get past the forcefield you need a talisman, go to the seven dwarves cottage, examine the covers and move covers.

Wear a wig and padded brassiere in the tower(!)

Do not wander around the garden.

NB If you have a 6128 Amstrad, you can save your position on disk by typing **SAVE** then **D**.



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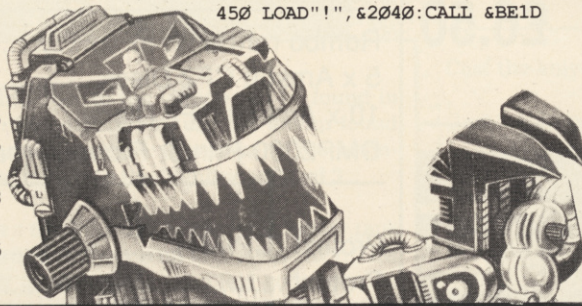
CHEAT MODE

The best tips, pokes and plays to make life easier

Zoids

Mike Wong of Sale pokes Martech's game to give you invulnerability and a choice of which Zoid to start the game in. (Method 1)

```
1 ' Zoids - tape
2 ' by Mike Wong
3 ' Amstrad Action Sept 88
10 DATA 3e,00,32,5a
20 DATA 2d,af,67,6f
30 DATA 32,de,4f,22
40 DATA df,4f,32,a4
50 DATA 4a,22,a5,4a
60 DATA 32,ee,62,32
70 DATA 83,50,c3,03
80 DATA 2d
90 DATA 21,40,20,11
100 DATA 40,00,01,37
110 DATA 02,ed,b0,21
120 DATA 74,02,36,0f
130 DATA 23,36,85,21
140 DATA 40,00,e5,21
150 DATA 00,bb,e5,21
160 DATA 37,02,e5,**
170 DATA 21,07,b8,e5
180 DATA 21,bb,02,e5
190 DATA f1,21,ea,b1
200 DATA 11,d9,b1,f3
210 DATA c9,*
220 DATA 21,1f,b1,e5
```



```
230 DATA 21,bb,02,e5
240 DATA f1,21,e5,b7
250 DATA 11,d4,b7,f3
260 DATA c9,*
270 MEMORY &2000:n=&BE00
280 READ a$
290 IF a$="**" THEN 340
300 IF a$="*" THEN 360
310 a=VAL("&"+a$)
320 c=c+a:POKE n,a
330 n=n+1:GOTO 280
340 IF PEEK(&AC01)=&C9 THEN 280
350 RESTORE 220:GOTO 280
360 PRINT"1 - Spiderzoid"
370 PRINT"2 - Scorpozoid"
380 PRINT"3 - Trooperzoid"
390 PRINT"4 - Tank"
400 PRINT"5 - Great Gorgon"
410 PRINT"6 - Mighty Zoidzilla"
420 INPUT"Choose zoid (1-6)";n
430 n=n-1:POKE &BE01,n
440 LOAD"":CALL &3A6A
450 LOAD"!",&2040:CALL &BE1D
```

Vixen

The whip-wielding heroine of Martech's scrolling whip-em-up is given infinite lives courtesy of - you guessed it, Phil Howard. (Method 1)

```
1 ' Vixen - tape
2 ' by Phil Howard
3 ' Amstrad Action Sept 88
10 DATA 00,2a,0f,bc,22,1d
20 DATA bd,21,0e,bc,36,c3
30 DATA 23,36,15,23,36,be
40 DATA c3,12,32,3e,00,cd
50 DATA 1c,bd,3a,00,be,3c
60 DATA 32,00,be,fe,02,c0
70 DATA 21,2b,be,22,55,34
80 DATA c9,dd,21,5b,aa,11
90 DATA 00,01,cd,ea,a9,21
100 DATA 3e,be,22,20,ab,c3
110 DATA 85,aa,3e,a7,32,14
120 DATA 35,c3,b0,33
130 MEMORY &3000:y=0
140 FOR x=&BE00 TO &BE45
150 READ a$:a=VAL("&"+a$)
160 POKE x,a:y=y+a:NEXT
170 IF y<&1A1E THEN 200
180 LOAD""
190 CALL &BE00
200 PRINT"Data error"
```

POKE METHODS ON TAPE

Here's how to input most *Cheat Mode* tape pokes - the instructions for each poke tell you which of the two to use. 664 and 6128 owners: first type 1 tape.

METHOD 1

Rewind the game tape to the beginning, type in the poke listing and then type RUN and press the Enter key. (Don't use the key marked CTRL or Control, or the poke won't work.) Press the Play key on the cassette deck, then any key on the main keyboard - spacebar does nicely. The tape should now play through as normal.

METHOD 2

Skip the first bit of the game program. To do this, rewind the game tape to the beginning; type in the listing; now type CAT and press Enter. Start the tape by pressing Play and then any key. Soon you'll see the message: 'Found something Block 1'. It doesn't matter what the something is, and it varies from game to game. If the *Cheat Mode* instructions just tell you to skip the first block, stop the tape here.

If the instructions tell you to skip things, stop the tape when the "Found" message comes up for the last thing you're trying to skip.

Once you've stopped the tape, press Escape, type RUN and press Enter. Now press Play on the tapedeck and any key on the keyboard to start the tape.



Phil Howard has some pokes for the infamous *Go-Loaders*. If you already have the Lock-key program (from AA33 and 34) you don't need to type in the following program: if you haven't then type in the LOCK program and save it to tape or disk using SAVE "LOCK".

Next type in the poke that you want (e.g. BEDLAM) and save that to tape or disk using SAVE "BEDLAM", A.

Reset your computer and do the following:

```
LOAD "LOCK"
MERGE "BEDLAM"
RUN
```

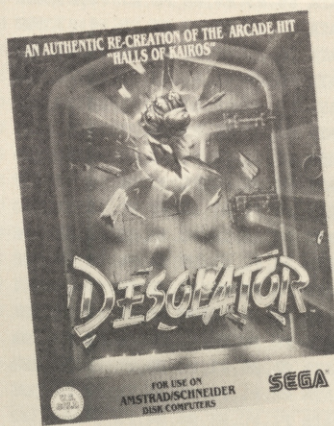
Place the game cassette in the tape deck and press play. The poke takes about 3.5 minutes to run.

```
10 '**** LOCK ****
20 '
30 Y=0:RESTORE 100
40 FOR x=&4200 TO &4386
50 READ a$:a=VAL("&" + a$)
60 y=y+a:POKE x,a:NEXT
70 IF y=37465 THEN 590
80 PRINT "ERROR IN LOCK":END
90 '
100 DATA FE,00,20,03,C3,3B,43,FE
110 DATA 01,20,07,DD,36,0F,F6,0E
```

GO-Loaders - Part 3

```
120 DATA 10,C9,FE,02,20,07,DD,36
130 DATA 0C,F9,0E,0D,C9,FE,03,20
140 DATA 0F,DD,36,1E,E9,DD,7E,0C
150 DATA D6,10,DD,77,0C,0E,1F,C9
160 DATA FE,04,20,07,DD,36,11,F6
170 DATA 0E,12,C9,FE,05,20,07,DD
180 DATA 36,10,F6,0E,11,C9,FE,06
190 DATA 20,07,DD,36,0D,F8,0E,0E
200 DATA C9,FE,07,20,07,DD,36,1B
210 DATA EE,0E,1C,C9,FE,08,20,07
220 DATA DD,36,0E,F7,0E,0F,C9,FE
230 DATA 09,20,07,DD,36,23,C0,0E
240 DATA 24,C9,FE,0A,20,13,DD,E5
250 DATA E1,11,06,00,19,7C,D6,10
260 DATA DD,75,15,DD,77,16,0E,17
270 DATA C9,FE,0B,20,13,DD,E5,E1
280 DATA 11,06,00,19,7C,D6,10,DD
290 DATA 75,14,DD,77,15,0E,16,C9
300 DATA FE,0C,20,13,DD,E5,E1,11
310 DATA 07,00,19,7C,D6,10,DD,75
320 DATA 10,DD,77,11,0E,12,C9,FE
330 DATA 0D,20,0F,DD,7E,03,D6,10
340 DATA DD,77,03,DD,36,1A,E9,0E
350 DATA 1B,C9,DD,36,1D,20,DD,36
360 DATA 1E,EB,0E,1F,C9,F3,21,39
370 DATA 7D,11,39,5D,00,01,00,0D
380 DATA ED,B0,21,36,6D,11,37,6D
390 DATA 01,00,10,36,00,ED,B0,36
```

```
400 DATA C3,23,36,34,23,36,43,21
410 DATA D5,42,11,39,6D,01,0D,00
420 DATA ED,B0,21,40,6D,36,EB,21
430 DATA 50,7D,11,50,6D,01,15,00
440 DATA ED,B0,21,FF,40,DD,21,58
450 DATA 7D,23,E5,7E,CD,00,42,DD
460 DATA E5,E1,5D,7C,D6,10,57,06
470 DATA 00,DD,09,ED,B0,ED,73,00
480 DATA 40,C3,39,6D,ED,7B,00,40
490 DATA E1,18,DE,E1,ED,4B,02,40
500 DATA D9,C3,89,BE,22,D7,42,7C
510 DATA D6,10,67,22,FB,42,22,32
520 DATA 43,E5,7C,D6,10,67,22,DA
530 DATA 42,E1,2B,2B,2B,22,E3,42
540 DATA 23,22,E6,42,11,09,00,19
550 DATA 22,03,43,11,10,00,19,22
560 DATA 0B,43,11,00,10,19,22,08
570 DATA 43,11,08,00,19,22,17,43
580 DATA F3,D9,ED,43,02,40,C9
590 '
600 '**** KEY ****
610 '
620 y=0:x=&4100:RESTORE 740
630 WHILE a$<>"00"
640 READ a$:y=y+VAL("&" + a$)
650 POKE x,VAL("&" + LEFT$(a$,1))
660 POKE x+1,VAL("&" + RIGHT$(a$,1))
670 x=x+2:WEND
680 '
690 '-----
```



Desolator

Phil Howard again, this time with infinite lives for the game of child freeing. (Method 1)

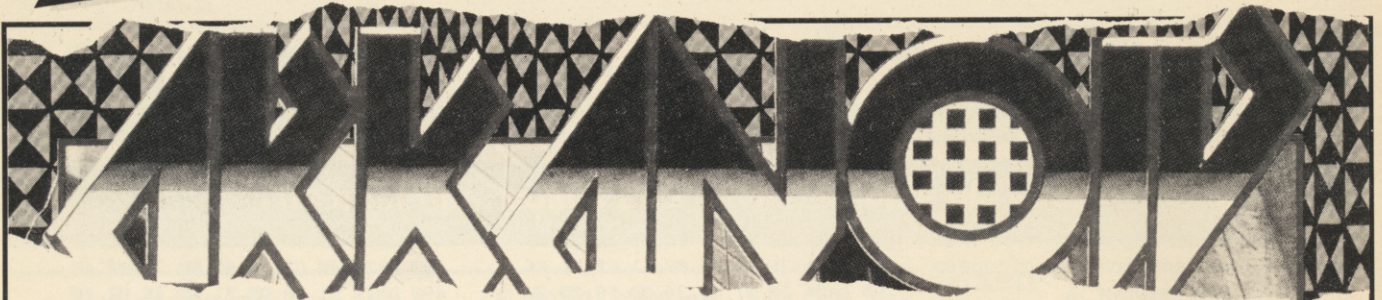
```
1 ' Desolator - tape
2 ' by Phil Howard
3 ' Amstrad Action Sept 88
710 IF y=5003 THEN 810
720 PRINT "Error in key":END
730 '
740 DATA 14,92,1b,51,b7,b1,a5,8c
750 DATA 41,46,51,a5,73,61,12,a9
760 DATA 49,12,b1,be,5e,da,42,cb
770 DATA c5,18,54,61,42,da,42,cb
780 DATA 25,44,15,5a,51,b8,63,71
790 DATA 4a,34,be,6d,14,41,65,11
800 DATA 40,00
810 '
```

```
820 '**** CHEAT ****
830 '
840 y=0:RESTORE 910
850 FOR x=&BE80 TO &BE9A
860 READ a$:a=VAL("&" + a$)
870 POKE x,a:y=y+a:NEXT
880 IF y<>3462 THEN 960
890 PRINT "Error in cheat":END
900 '
910 DATA 21,ab,94,cd,44,43,c3,d5
920 DATA 42,21,92,be,22,5b,9e,c3
930 DATA d4,9c,cd,03,b9,3e,a7,32
940 DATA ca,06,c9
950 '
960 MEMORY &1FFF
970 LOAD "DESOLATOR"
980 PRINT "Don't Panic.. This takes forever"
990 CALL &BE80
```

Bedlam

Phil's also hacked into the shoot-em-up to give you infinite lives. (Method 1)

```
1 ' Bedlam - tape
2 ' by Phil Howard
3 ' Amstrad Action Sept 88
710 IF y=4454 THEN 810
720 PRINT "Error in key":END
730 '
740 DATA 15,11,51,43,4d,b2,64,34
750 DATA 74,ad,45,ab,a6,14,25,da
760 DATA 11,15,e1,14,95,c6,73,64
770 DATA 51,29,4a,14,45,15,2c,8a
780 DATA b8,e4,18,19,42,71,1a,61
790 DATA 21,56,4b,16,56,1b,17,bc
800 DATA 1a,e5,00
810 '
820 '**** CHEAT ****
830 '
840 y=0:RESTORE 910
850 FOR x=&BE80 TO &BE9A
860 READ a$:a=VAL("&" + a$)
870 POKE x,a:y=y+a:NEXT
880 IF y<>3556 THEN 960
890 PRINT "Error in cheat":END
900 '
910 DATA 21,93,94,cd,44,43,c3,d5
920 DATA 42,21,92,be,22,87,9e,c3
930 DATA cc,9c,cd,b8,9e,3e,a7,32
940 DATA 6d,1b,c9
950 '
960 MEMORY &1FFF
970 LOAD "BEDLAM"
980 PRINT "Don't Panic.. This takes forever"
```



Niall Brady has also come up with 10 new screens for Imagine's breakout clone. After you complete the ten screens the final one is loaded. (Method 1)

```

1 ' Arkanoid - tape
2 ' By Niall Brady
3 ' Amstrad Action Sept 88
10 DATA 21, 3A, C0, 11, 7F, 35, 01, 50, 231
20 DATA 03, ED, B0, 21, 26, C0, 11, 5D, 315
30 DATA 3F, 01, 14, 00, ED, B0, 3E, 0A, 239
40 DATA 32, B7, 02, 00, 00, 00, 00, 00, 0EB
50 DATA 00, 00, 00, C3, E5, 45, B4, 36, 2D7
60 DATA 7F, 35, E2, 35, 4D, 36, 7C, 37, 301
70 DATA 29, 37, 9D, 38, 66, 38, F2, 37, 2FC
80 DATA DA, 37, F3, 08, FC, 0C, FA, FB, 509
90 DATA 0B, 03, F1, F3, F8, 03, 08, FC, 3F1
100 DATA 0B, FA, 03, FB, 09, 02, F1, F3, 3F2
110 DATA F8, F8, 03, 02, 08, FC, 0A, FA, 3FD
120 DATA 03, 02, FB, 07, 04, F1, F3, F8, 3E7
130 DATA F8, F8, 03, 02, 04, 08, FC, 09, 306
140 DATA FA, 03, 02, 04, FB, 05, 00, F1, 2F4
150 DATA F3, F8, F8, F8, F8, 03, 02, 04, 4DC
160 DATA 00, 08, FC, 08, FA, 03, 02, 04, 20F
170 DATA 00, FB, 03, 07, F1, F3, F8, F8, 4D9
180 DATA F8, F8, F8, 03, 02, 04, 00, 07, 2F8
190 DATA 08, FC, 07, 08, 03, 02, 04, 00, 11C
200 DATA 07, FC, 08, 07, FF, FC, 04, FA, 40B
210 DATA 08, 08, FA, FA, 08, 08, FC, 06, 316
220 DATA FA, 08, 04, 04, 04, 08, 04, 04, 11E
230 DATA 04, FC, 04, FA, 08, FC, 09, 04, 30F
240 DATA FA, FA, 06, FC, 0A, 04, 04, FA, 402
250 DATA 04, 06, FC, 0A, 04, FA, 04, 04, 216
260 DATA 06, FC, 09, 04, FA, FA, 04, 04, 30B
270 DATA 06, FC, 07, 04, FA, FC, 05, 08, 310
280 DATA 06, FC, 05, 04, 08, 08, FC, 06, 21D
290 DATA 07, 06, FC, 04, 04, 07, 07, FA, 219
300 DATA FA, FA, 04, 04, 06, 06, FC, 04, 308
310 DATA 04, FC, 06, FA, 06, FC, 05, 04, 30B
320 DATA FC, 08, FA, FC, 04, 04, FC, 0A, 408
330 DATA FA, 04, 04, FC, 0C, FA, 04, FF, 407
340 DATA FC, 04, FA, 04, FC, 03, FA, 06, 3FD
350 DATA F3, 04, FC, 05, FA, 04, FA, FA, 4EA
360 DATA 08, FC, 05, FA, 04, FC, 06, FA, 403
370 DATA 00, 00, FC, 06, FA, 06, FA, 04, 300
380 DATA FA, FA, 00, 00, 00, FA, FA, 06, 3EE
390 DATA FC, 07, FA, FC, 04, 00, FC, 09, 402
400 DATA FA, FC, 04, 00, FC, 09, 08, FC, 403
410 DATA 04, 00, FC, 0B, 07, 00, 00, FC, 20E
420 DATA 09, FA, FC, 03, 00, FC, 04, FA, 3FC
430 DATA 04, FA, 06, FA, FA, FA, 00, 00, 3F2
440 DATA FC, 03, FA, 06, FC, 05, FA, 04, 3FE
450 DATA FA, 00, FC, 07, FA, 04, FC, 04, 3FB
460 DATA FA, 08, FC, 12, FA, 04, FF, FC, 509
470 DATA 04, FA, FC, 05, 04, FC, 06, FA, 3FF
480 DATA FC, 09, 04, FA, FA, 04, FC, 04, 401
490 DATA 04, 00, FC, 04, 04, 00, FC, 06, 20A
500 DATA 04, 00, 00, 04, 04, 04, 00, 010
510 DATA FC, 05, 04, 00, 04, 00, 04, 04, 111
520 DATA 00, 04, 00, FC, 04, 04, 00, 04, 10C

```

```

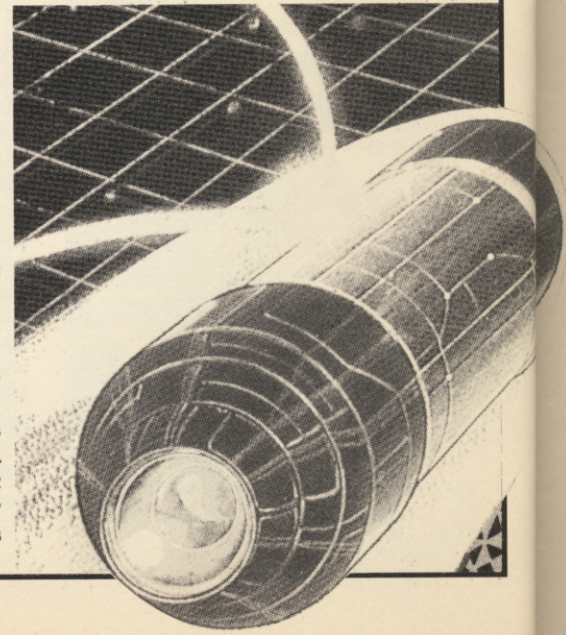
530 DATA 04, 00, 04, 00, 04, 04, 00, FC, 10C
540 DATA 04, 04, 00, 04, 00, 00, 04, 00, 010
550 DATA 04, 00, 00, FC, 04, 04, 00, 00, 108
560 DATA 04, 00, 04, 00, 00, 04, 00, FC, 108
570 DATA 04, 04, 00, 04, 04, 00, 04, 00, 014
580 DATA 04, 04, 00, FC, 04, 04, 00, FC, 208
590 DATA 04, 04, 00, FC, 07, 04, 00, FC, 20B
600 DATA 04, 04, 00, FC, 1F, 04, FA, FA, 31B
610 DATA FC, 09, 04, FF, FC, 0D, 08, FA, 413
620 DATA FA, FA, FA, FA, FA, FA, FA, FA, 7D0
630 DATA FA, FA, FA, FA, FA, FA, FA, FA, 7D0
640 DATA FA, FA, FA, F1, F9, F8, FB, 05, 6D0
650 DATA 07, 09, 09, 09, 09, 09, 09, 09, 046
660 DATA 09, 09, F1, F9, FB, 07, FA, FB, 4F3
670 DATA 05, 07, F2, F8, FB, 05, 05, F8, 3F3
680 DATA FB, 05, 05, F2, F8, FB, 05, 09, 3F8
690 DATA F8, FB, 05, 09, F2, F8, FB, 05, 4EB
700 DATA 05, F8, FB, 05, 05, F2, F8, FB, 4E7
710 DATA 05, 07, F8, FB, 05, 07, FF, FC, 406
720 DATA 0D, 04, FC, 0D, 05, FA, F9, 87, 399
730 DATA 06, FE, F6, FA, 87, 86, 05, FE, 504
740 DATA F6, 87, 86, 85, 04, FE, F6, 07, 487
750 DATA 86, 85, 84, FE, F9, 07, 86, 85, 498
760 DATA 84, 83, FE, F9, 86, 85, 84, 83, 510
770 DATA 02, FE, F9, 06, 85, 84, 83, 82, 40D
780 DATA FE, F9, 85, 84, 83, 82, 01, FE, 504
790 DATA F9, 05, 84, 83, 82, 81, FE, F9, 4FF
800 DATA 84, 83, 82, 81, 00, FE, F6, 83, 481
810 DATA 82, 81, 00, FE, F6, 03, 82, 81, 3FD
820 DATA 80, FE, F6, FA, 02, 81, 80, FE, 56F
830 DATA F6, F9, 01, 80, FF, FC, 1A, 08, 48D
840 DATA FC, 1A, 14, FC, 1A, 00, FC, 1A, 356
850 DATA 14, FC, 06, 08, FA, FC, 0C, 08, 328
860 DATA FA, FC, 06, 08, FF, FB, 0D, 06, 411
870 DATA F1, 06, FB, 0C, 06, F1, 06, 06, 301
880 DATA FB, 0B, 06, F1, 06, 06, 06, FB, 30A
890 DATA 0A, 06, F1, FC, 04, 06, FB, 09, 30B
900 DATA 06, F1, FC, 05, 06, FB, 08, 04, 305
910 DATA F1, FC, 05, 06, 04, FB, 07, 04, 302
920 DATA F1, FC, 05, 06, 04, 04, FB, 06, 301
930 DATA 04, F1, FC, 05, 06, 04, 04, 208
940 DATA FB, 05, 04, F1, FC, 05, 06, FC, 3F8
950 DATA 04, 04, FB, 04, 08, F1, FC, 05, 301
960 DATA 06, FC, 04, 04, 08, FB, 03, 08, 218
970 DATA F1, FC, 05, 06, FC, 04, 04, 08, 304
980 DATA 08, FB, 02, 08, F1, FC, 05, 06, 305
990 DATA FC, 04, 04, FC, 04, 08, FB, 0C, 313
1000 DATA FA, 08, 08, FC, 09, 09, 08, 08, 228
1010 DATA FF, FC, 41, 07, FB, 04, 04, F1, 437
1020 DATA FC, 06, 07, FB, 06, 07, FB, 04, 310
1030 DATA 04, F1, FC, 0C, 07, FB, 07, 07, 30D
1040 DATA FB, 04, 04, F1, FB, 05, 07, FB, 3F6
1050 DATA 05, 04, F1, 07, FB, 05, 07, FB, 303
1060 DATA 04, FA, FC, 05, 09, 04, FC, 05, 30D
1070 DATA 09, FC, 1B, 04, FC, 0D, 08, FF, 334
1080 DATA F6, FA, 05, 02, 00, 02, 00, 02, 1FB
1090 DATA 05, FE, F6, 05, 02, 00, 02, 08, 20A
1100 DATA 02, 00, 02, 05, FE, F6, FA, 05, 2FC
1110 DATA 02, 00, 02, 00, 02, 02, 05, FE, F6, 1FF
1120 DATA F9, 05, 02, 00, 02, 05, FE, F6, 2FB

```

```

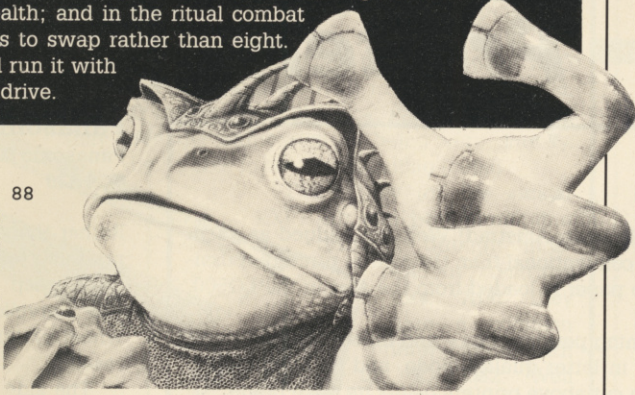
1130 DATA F6, 05, 02, 05, FE, FC, 01, FA, 3FD
1140 DATA 05, FF, 00, 00, 00, 00, 00, 104
1150 OPENOUT "NCB":MEMORY &2000:CLOSE-
OUT:MODE 0
1160 n=8:a=&C000:l=10
1170 WHILE l<1150:GOSUB 1420:WEND
1180 ' LOADER
1190 DATA 3E, 40, 32, 03, 0B3
1200 DATA BF, 21, 4D, BF, 1EC
1210 DATA 36, 00, 23, 36, 08F
1220 DATA C0, C3, 00, BF, 242
1230 DATA 21, E2, 39, 36, 172
1240 DATA C3, 23, 36, 26, 142
1250 DATA 23, 36, BE, 21, 138
1260 DATA 40, 00, E5, 21, 146
1270 DATA 00, BB, E5, C3, 263
1280 DATA B7, 39, E5, 21, 1F6
1290 DATA 91, 01, 36, E4, 1AC
1300 DATA 23, 36, 5B, 23, 0D7
1310 DATA 36, D1, E1, F1, 2D9
1320 DATA F3, C9, FF, FF, 38A
1330 n=4:a=&BE00:l=1190
1340 WHILE l<1330:GOSUB 1420:WEND
1350 '
1360 LOAD"!ARKANOID"
1370 POKE &3AA7, &C9
1380 POKE &3A82, &0
1390 POKE &3A83, &0
1400 POKE &3A84, &0
1410 CALL &BE10
1420 '
1430 cs=0:FOR x=1 TO n:READ
v$:v=VAL("&"+v$):POKE a, v
1440 cs=cs+v:a=a+1:NEXT:READ c$
:c=VAL("&"+c$)
1450 IF c<>cs THEN PRINT"Data error in
line ", l:END
1460 l=1+10:RETURN
1470 RETURN

```



Ranarama

Niall Brady of Sligo makes Hewson's game of monster bashing much easier by giving you infinite health; and in the ritual combat you only have two letters to swap rather than eight. Just type in the poke and run it with the *Ranarama* disk in the drive.



```

1 ' Ranarama - disk
2 ' By Niall Brady
3 ' Amstrad Action Sept 88
10 DATA 01,1D,01,21,040
20 DATA 0F,50,11,00,070
30 DATA 50,06,FF,1A,16F
40 DATA AE,77,23,13,15B
50 DATA 10,F9,3A,07,14A
60 DATA 40,3D,32,07,0B6
70 DATA 40,32,07,50,0C9
80 DATA 06,50,ED,43,186
90 DATA 01,40,06,00,047
100 DATA ED,43,01,50,181
110 DATA A7,20,D8,3E,1DD
120 DATA BF,21,2C,50,15C
130 DATA 77,2B,AF,77,1C8
140 DATA 21,1F,50,11,0A1
150 DATA 5E,40,01,00,09F
160 DATA 02,ED,B0,3E,1DD
170 DATA 01,01,7E,FA,17A
180 DATA ED,79,3E,01,1A5
190 DATA CD,0E,BC,06,19D
200 DATA FF,76,10,FD,282
210 DATA F3,21,5C,40,1B0
220 DATA 11,1D,00,01,02F
230 DATA 00,01,ED,B0,19E
240 DATA C3,1D,00,3E,11E
250 DATA 79,20,4E,42,129
260 DATA 20,28,43,29,0B4
270 MEMORY &2000
280 a=&3FFD:l=10
290 WHILE l<270:
    GOSUB 550:WEND
300 LOAD"DISC", &4FB8
310 a=&BF00:l=330
320 WHILE l<370:
    GOSUB 550:WEND
330 DATA 21,52,99,3E,14A
340 DATA C0,77,3E,63,1D8
350 DATA 23,77,C3,00,15D
360 DATA 99,00,00,00,099
370 a=&BE80:l=390
380 WHILE l<540:
    GOSUB 550:WEND
390 DATA 21,8E,BE,11,17E
400 DATA 00,BF,01,40,100
410 DATA 00,ED,B0,C3,260
420 DATA 00,BF,01,7E,13E
430 DATA FA,AF,ED,79,30F
440 DATA 01,89,7F,ED,1F6
450 DATA 49,21,00,00,06A
460 DATA 11,00,00,01,012
470 DATA 00,02,ED,B0,19F
480 DATA 01,8D,7F,ED,1FA
490 DATA 49,21,91,79,174
500 DATA AF,77,23,77,1C0
510 DATA 23,77,21,65,120
520 DATA 65,77,C3,B5,254
530 DATA 5A,00,00,00,05A
540 CALL &3FFD
550 cs=0:FOR x=1 TO 4
560 READ v$
570 v=VAL("&"+v$):POKE a,v
580 cs=cs+v:a=a+1:NEXT
590 READ c$:c=VAL("&"+c$)
600 IF c<>cs THEN PRINT"Data
    error in line ",l:END
620 l=l+10:RETURN
    
```

Shanghai Karate

Mike Wong has also sent in a poke for the martial arts game. It allows you to choose the number of lives for player 1 and 2. In the single player game the computer is player 2 so you can progress more easily. (Method 1)

```

1 ' Shanghai Karate - tape
2 ' by Mike Wong
3 ' Amstrad Action Sept 88
10 MEMORY &1FFF
20 PRINT"How many lives for:"
30 INPUT" player 1";x
40 INPUT" player 2";y
50 LOAD""
60 CALL &7500
70 CALL &77E0
80 LOAD"! "
90 LOAD"! "
100 POKE &417F,&8F
110 POKE &41CC,&B3
120 POKE &422C,&F9
130 FOR n=&BE00 TO &BE23
140 READ a$:a=VAL("&"+a$)
150 POKE n,a:c=c+a:NEXT
160 IF c<>2676 THEN 290
170 POKE &BE0F,x
180 POKE &BE14,y
190 CALL &4005
200 DATA 3e,c3,21,0e
210 DATA be,32,7e,ae
220 DATA 22,7f,ae,c3
230 DATA 00,ac,3e,00
240 DATA 32,fd,06,3e
250 DATA 00,32,a6,07
260 DATA 21,01,07,36
270 DATA 00,23,36,00
280 DATA 23,36,00,c9
290 PRINT"Error"
    
```

Win an ENTIRE ISSUE'S RAVES!

To win an entire issue's Rave software - and that includes the *Mastergame* - all you have to do is produce an excellent map, poke or set of playing tips.

The best solution each month wins a copy of every Rave and the *Mastergame* of that issue. The number of games varies of course, but in a good issue it can be half a dozen. We also give runner-up prizes every month of a Rave or the *Mastergame*.

This month's winner of the Raves and the *Mastergame* is Niall Brady for his *Arkanoid* and *Ranarama* pokes. The runners up who receive either a Rave or the *Mastergame* are Phil Howard and Mike Wong. Really Phil, you ought to move over and give someone else a chance (mind you, it's all good stuff!).

RASTERSCAN

Julian Page of Shrewsbury has sent in this poke for a variety of things in Mastertronic's Rave game. (Method 1)

```

1 ' Rasterscan - Tape
2 ' By Julian Page
3 ' Amstrad Action Sept 1988
9 ' Don't remove!
10 DATA 21,00,40,3E
20 DATA 16,E5,E5,F5
30 DATA CD,A1,BC,F1
40 DATA D1,E1,E5,CD
50 DATA A1,BC,21,25
60 DATA BF,22,24,40
70 DATA C9,42,52,41
80 DATA 58,58,5B,48
90 DATA 41,43,4B,45
100 DATA 52,21,19,BF
110 DATA 11,F7,0B,01
120 DATA 0C,00,ED,B0
130 DATA ED,62,AF
139 ' Infinite power
140 DATA 32,DF,48
149 ' Locks auto-open
150 DATA 22,D5,3E
159 ' No nasty music
160 DATA 32,FD,14
170 DATA 22,FE,14
179 ' No music bug
180 DATA 22,07,15
190 DATA 32,09,15
199 ' Invulnerability
200 DATA 21,62,15
210 DATA 22,F6,0C
219 ' Don't remove!
220 DATA C3,FD,03,JPS
230 X=&BF00:MODE 1
240 READ A$
250 IF A$="JPS" THEN 280
260 POKE X,VAL("&"+A$)
270 X=X+1:GOTO 240
280 FOR X=&BF00 TO &BF32
290 C=C+PEEK(X):NEXT X
300 IF C<>&16E6 THEN 320
310 CALL &BF00
320 PRINT"DATA ERROR"
    
```

AA Buyers Guide

Printers

Amstrad LQ3500

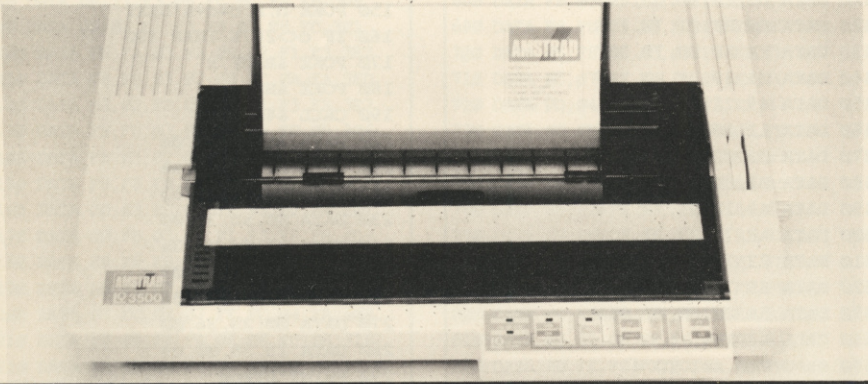
Amstrad ■ £401.35 rrp ■ AA31

Yes, the cheapest 24-pin printer available is an Amstrad! Well, it's badged as such. The truth is, though, it looks much more conventional than their other printers: possibly to woo the business community. The paper is loaded from the rear in the LQ500, making loading more time consuming.

At this price you might expect a stunning performance – and indeed it's really not bad at all. It can manage about 30 cps in letter quality mode, and 62 cps in draft. Hardly world shaking, but the quality is a cut above printers below its price range.

Recently there was a nasty scene caused by Epson, saying that Amstrad couldn't use the letters LQ in a printer name. Amstrad shrugged it off in the end, but the name looked shaky for a while.

In the final analysis, this doesn't look particularly attractive. Print quality is excellent, and plenty of different type-styles are built into the printer. But the speed is nothing to write home about. Also, it looks a little tacky, and you're left with the impression that it might fall to bits.



Star LC10

Star Micronics ■ £263.35/£297.85 rrp
■ AA32

Two prices have been indicated because two models of this 9 pin printer are available. The first is for the standard dot matrix printer, which is a good, no nonsense machine. Fonts can be selected by button push, rather than typing in a fiddly control code.

One slightly unusual feature is that the centronics port is on the side, taking up more space, rather than the back of the machine.

Also common to both models is a plastic paper feeder. Now personally I found it a bit of a bind, because it increases the height of the printer. Try putting the printer on the floor.

The second price is for the colour model. It may seem expensive, but believe it or not that is relatively inexpensive for a colour printer. It uses a multi-colour ribbon to produce the different colours and mixes.

Unfortunately there isn't any software yet to take advantage of the colours. But it seems that a colour screen dump routine is bound to appear sooner or later.

Epson EX800

Epson ■ £458.85 ■ AA29

This is one of Epson's mid-priced printers. As usual, it can be upgraded in a hundred and one ways, like cut sheet feeds, serial ports and longer life ribbons. It's also fairly quiet and can maintain a respectable printing speed. Sans Serif/Roman NLO fonts are incorporated.

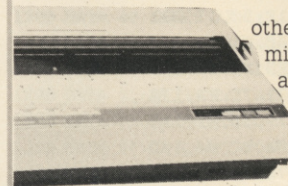
It has the benefit of having a control panel to select fonts with. However these fonts suffer from being the same with just different spacing to differentiate between them. As with every Epson you are paying for the name, rather than the printer.

Panasonic KXP3131U

Panasonic ■ £335.25 (discontinued)
■ AA29

Rather than yawning over the dot matrix printers talked about elsewhere, you could gasp at the typewriter quality of this marvellous scribe. It uses the daisy-wheel system to give its ultimate quality results.

The side effect of this happy situation are that it can't print bit graphics (no trendy screen dumps), and it doesn't have many fonts. If you want different fonts, just plug in a different Diablo-compatible one and off you go.



Just one other thing – bear in mind that it is not a quiet machine, and a noise suppression box is a good idea.

Amstrad DMP/2160

Amstrad ■ £159.95 ■ AA6

What's with this Amstrad policy of introducing a '160' version of a printer? What happens is that Amstrad first of all produce a printer with the normal '000' classification – in this case the DMP/2000. Then they improve the performance (generally they quote a slightly higher draft speed) and produce a better printer at the same price so that they can gradually phase out the old machine.

One of the good points of the 2160 is that you load the paper through the front. This means two things: first the printer needs to be raised above the paper, and second that loading continuous stationery is a sight easier than on other printers.

On the minus side is the poor NLO mode. At around £5 or so the ribbons are a touch expensive too. All in all the DMP2160 is the lowest priced printer,

The EEC strikes back

Recently the EEC announced a new levy on printers that come from Japan. That's one of the reasons why the Epsons are so expensive compared to the other machines. The reason why the EEC decided on such a damaging tactic was the accusation that certain companies in Japan were swamping the European market with underpriced units.

It could be argued that such a move will help to create a fairer market. Quite frankly I don't want a fairer market, I want a cheaper printer. If the Japanese can sell printers at such a low price, I'll buy them. And what is a European printer anyway? Of those reviewed, only Panasonics are actually assembled in the community.

Panasonic KXP1081

Panasonic ■ £245 rrp ■ AA29

To start with, this is a similar product to the DMP2000/2160, in that it has 9 pins, a 10 inch carriage and is compatible with Epson control codes.

The good features about it are that it has a thorough A4 manual, a good NLQ mode (better than the DMP) and a switch to select condensed, draft and NLQ modes. Also, like most Panasonic printers they give the impression of being very chunky, being able to take mishandling (oops).

Often they (or the similar KXP1080) can be bought at a discount through independent distributors. And they share a common printer ribbon with the KXP1082. Well worth keeping an eye out for.



Epson LQ500

Epson ■ £803 rrp ■ AA29

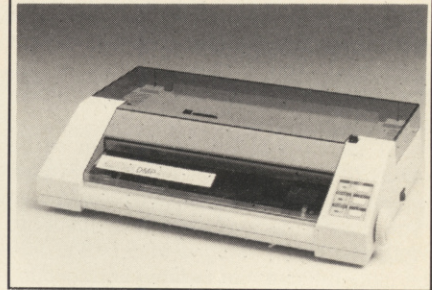
As usual with Epson this is very well put together, with features galore – and a price to match. It handles both the up-market Sans Serif/Roman styles of NLQ, for instance. And you can get a colour-printing upgrade kit.

And it's a 24 pin printer, offering excellent quality printing. The idea is that it's good enough to compete with a typewriter. A control panel is built in to select the many different fonts available. These styles are not different, however. All the printer does is have the same style and cram different widths of text, according to the selection. Not an amazing printer, considering the price.

Amstrad DMP3160

Amstrad ■ £228.85 ■ AA29

Yes, for all those anaemic PC compatibles, Amstrad has brought out a pale printer. It really is almost exactly the same in its operation as the DMP2160, except that maybe it's a bit faster. Plus, more importantly, it can accept all the IBM printing codes as well as Epson's. The NLQ shares the same sensible front loading system. It's a good buy for the price.



Amstrad DMP4000

Amstrad ■ £401.35 ■ AA20

For those who want a real text crunching machine, this could be what you're looking for. It's a sort of halfway house for Amstrad between DMP2000/3000 home use and LQ business use.

For a start, it's a wide carriage printer. So if you want to print a very wide spreadsheet or word-processor, this can handle it quite well. More importantly though, it can really fly across the paper, getting up to about 200 cps. In NLQ this comes down to about 50 cps.

Fonts available are nothing special, consisting of the standard 9 pin Pica, Elite, condensed etc. But at least they are different fonts, rather than adjusting the spacing for the same characters.

This machine makes an interesting counter point to the LQ500. It's highest quality setting is nowhere as good as that 24 pin printer, but it can print much faster. Finally, it looks a bit more robust than the LQ500.

Contacts

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Brentwood, Essex CM14 4EF

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Lowestoft, Suffolk NR23 9NA

Frontier Software ☎ 0423 67140

PO Box 113, Harrogate, N Yorkshire
HG2 0BE

Goldmark Systems ☎ 07072 71529

51 Comet Rd, Hatfield, Hertfordshire
AL10 0SY

Panasonic ☎ 0753 73181

300 Bath Rd, Slough SL9 6JB

Epson Uk Limited ☎ 01 902 8892

Dorland House, 388 High Rd, Wembley,
Middlesex HA9 6UH

KDS Electronics ☎ 04853 2076

15 Hill St, Huntstanton, Norfolk
PE36 5BS

Seven Stars Publishing ☎ 06284 3445

34 Squirrel Rise, Marlow, Bucks
SL7 3PN

Star Micronics ☎ 01 840 1800

Craven House, 40 Uxbridge Rd, Ealing
London, W5 2BS

Epson LX800

Epson ■ £320.85 ■ AA29

Speed of printing is in keeping with the price – i.e. *extremely* fast for a 9 pin. There's a control panel for style selection, and needless to say it's Epson compatible.

Really, there's not much I can say for or against the printer, because it follows such a standard design. Well, except that reverse winding sheets through the printer takes a little more care than usual, otherwise it jams. Good, but priced a bit high.

Glossary

- **LQ** – Letter Quality: the printed text output is up to the highest standard.
- **NLQ** – Near Letter Quality: the printed text is *almost* up to the highest standard. (Depends purely on the manufacturer's outlook: there's no given formula for it.)
- **9 pin/24 pin** – Most printers still have 9 pins, which means they take time to print out and the results are dotted. 24 pin printers generally run faster and print much healthier looking characters.
- **cps** – Characters Per Second. The number of characters the printer can print in one second. Generally lower than the maker claims, because the figures take no account of such things as carriage returns or linefeeds.
- **cut sheet/continuous stationery** – Cut sheets are single sheets of paper: continuous is joined at top and bottom to other sheets.

8 Bit Printer Port

KDS Electronics ■ £19.95 ■ AA32

Now, if there's one thing that you really do not like is people saying the CPC isn't a good machine. One thing it lacks, though, is an eight bit printer port. Instead it has a seven bit printer port. This isn't a serious handicap, but if you've splashed cash on a trendy IBM or 24 pin printer, you'll want that extra bit, believe me: it enables you to send printer codes above 127.

Over the years many people have produced add-ons and software to boost the CPC's printing capacity, but this particular one is probably the best. You can leave it connected, and it doesn't mind at all. Saves wear and tear on the edge connectors.

In use, it requires a program to be entered first – no problem for disk owners, a pain for tape owners. You could just type it into the loader on your favourite word-processor. Using it under CPM is a bit more difficult, but nothing outrageous.

This really does help to get more out of your printer – especially so with *Qualitas Plus* (see below), which can squeeze some excellent effects out of it.

Printmaster

Siren ■ £12.99 disk only ■ AA19

An all singing and dancing printing utility. Yes, with this you can dump screens to your printer in a bewildering amount of sizes, design fonts for use by the printer, and print out documents with these fonts (with a maximum size of 300 lines).

And this last feature is even better than *Qualitas*: you can print in a variety of sizes. A software based printer buffer – it steals memory from your Amstrad – is also available. The only black spot to an otherwise excellent product is that you can't pre-load it into a word-processor – it's strictly a standalone program.

Image Scanner

Dart Electronics ■ tape/disk £79.95 ■ AA22

Now here's something different. This is a device that you attach to your printer's head. (Only fits a DMP2XXX or DMP3000.) After that you put a picture into your printer, and let the program supplied perform its task. Which is, to read pictures directly into the Amstrad.

It's pretty simple to use. Unfortunately the pictures produced are crude two tone black and white: no grey scaling is implemented. This means that pictures have a certain 'newspaper' quality about them. But having said that, it's an awful lot of fun playing about with images on your Amstrad. You can edit, save and print them out with an on board art editor. And other art programs (not to mention *Stop Press*) can really exploit this ability...

Digitizers have been around for quite a while now – and they're as popular as ever. This one has the advantage of not needing a video camera. (If you own a DMP2160, please tell Dart when you order. Otherwise the device won't work.)

8K Printer Buffer

Goldmark Systems ■ £5.50 ■ AA19

If you already own a DMP2160, you may want to know about this piece of kit. It lets you increase the size of your printer buffer by 6K, which means that the printer can get on with its job without tying down your Amstrad. All it consists of is a few RAM chips and a list of instructions on how to fit them.

Now for many owners this will mean using a soldering iron. If you're not happy, though, take the printer and upgrade kit down to your local electrical repair shop – they'll probably do it in under ten minutes. It's a simple, cheap and useful add-on no DMP2160 owner should be without.

Qualitas Plus

Seven Stars Software ■ £12.95 tape, £14.95 disk ■ AA32

Very useful piece of software this. It is a bit like a turbo charger for your CPC, helping it to produce printed output way outside its design limits.

First, you need to configure it to your particular word-processor/printer combination. After this it asks you which fonts you want to load. These fonts are external to the program, and there's several to choose from – Clarion, Elite, Mercury, Piazza and Pica. These can be edited with an editor, and more fonts are available from Seven Stars.

Now when you print, you can get micro-spaced text in the font of your choosing – or indeed, designing. And it really does look very, very good. On the minus side, however, it takes about 15% longer to print.

Microstuffer

Frontier Software ■ £49.95 ■ AA23

This was a very popular product. It was a 64K printer buffer, a device to temporarily record information going to the buffer. Very useful, and quite cheap at the price of £49.95. Regrettably, they are now out of production. But fear not. The Supra Corporation of Oregon (that's in the USA, Europerson) are busy designing a new *MicroStuffer*. This will be quite similar to the old one, but is to have an upgrade facility, enabling you to install new memory chips. Andrew Bennet of Frontier has said that it should be available sometime 'in October or November'. The price, (and name) has yet to be decided.

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Normal shop price £9.99 cass, £14.99 disk

- The Capcom coin-op conversion made fierce!
- Destroy the Doomsday weapon or be destroyed!
- Five levels, each with its own soundtrack
- Five multi-loads - this is a big game
- Take out the worlds worst ever dictator



DREAM WARRIOR

Normal shop price £9.99 cass, £14.99 disk

- Set in a dream where you must never wake up
- Go round collecting the sleeping pills to stay in the game
- Kill the monster at the end of your nightmare and you've won!



ROAD BLASTERS

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- Faster than *Outrun!*
- Take it to the limit in your custom road warrior car

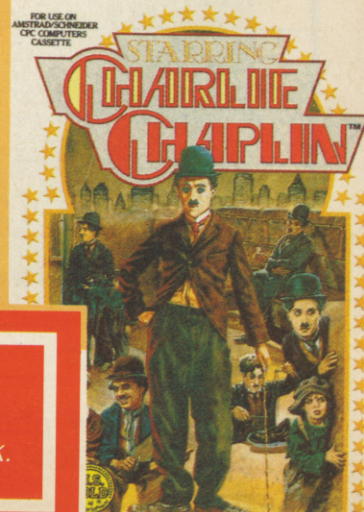


- Just blast everything else on the road and in the sky!
- Loads of sections!
- Loads of helicopters and death merchants out to get you if you can't play!

CHARLIE CHAPLIN

Normal shop price £9.99 cass, £14.99 disk

- A super game for everyone from 7 upwards
- Direct a movie and control the Stars!
- Select a script, shoot a scene, then edit it
- Show it to an audience and listen to them clap!



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PROGRAMS FREE WHEN YOU SUBSCRIBE!
Or buy them separately for just £6.95 cass, £11.95 disk.

SOFTWARE CODES LIST

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with BIONIC COMMANDO cass* ...	£16.50	A340
with BIONIC COMMANDO disk...	£16.50	A341
with ROAD BLASTERS cass* ...	£16.50	A342
with ROAD BLASTERS disk...	£16.50	A343
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with CHARLIE CHAPLIN disk...	£16.50	A345
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*Cass options include ENLIGHTENMENT on tape as free extra		
SOFTWARE ON ITS OWN		
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BIONIC COMMANDO DISK	£11.95	A349
WIZARD WARS CASS	£6.95	A350
WIZARD WARS DISK	£11.95	A351
CHARLIE CHAPLIN CASS	£6.95	A352
CHARLIE CHAPLIN DISK	£11.95	A353
DREAM WARRIORCASS	£6.95	A354
DREAM WARRIOR DISK	£11.95	A355
TARGET RENEGADE CASS	£6.95	A356
TARGET RENEGADE DISK	£11.95	A357
AT LAST PLUS CPM DISK	£29.95	AA353

Firebird's ENLIGHTENMENT
(Druid II) - just £3.95 (RRP £8.95)

Just £3.95 - only through Amstrad Action!

ENLIGHTENMENT, the game which subscribers get free of charge when they choose a tape rather than a disk game, is now available to all **Amstrad Action** readers for just **£3.95**. It's a Firebird game which was released in April of this year with the full title of *Enlightenment Druid II*. Complete with 22 page manual/initiation booklet, *Druid II* follows the quest for magical powers in the context of an icon-driven adventure which won praise from both adventurers and those more used to arcade action.

Definitely a long-term project which will challenge your wisdom!
Order Code AA352



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Imagine's TARGET RENEGADE

£6.95 (RRP £8.95)
£11.95 disk (RRP £14.95)

Yes! The August AA Mas-tergame comes into the Special Offers section. Basically a Taito coin-op conversion, *Target Renegade* is set in the world of the vigilante where there is only one man who can challenge the rule of evil - and there's a price on his head! An all-action arcade classic which will set your CPC alight.



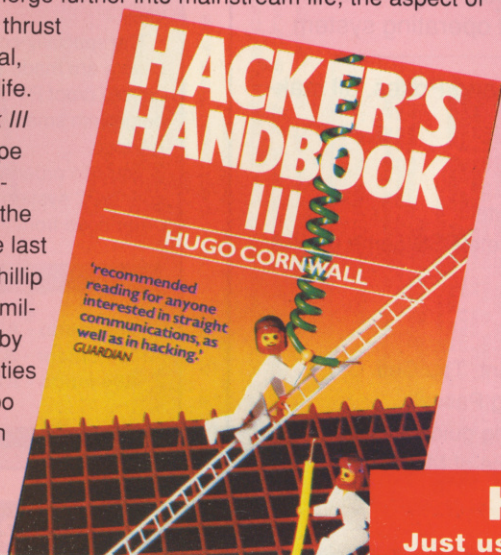
Go for it - if you dare!
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HACKERS HANDBOOK III by Hugo Cornwall £6.95 • Century Hutchinson

Here it is! The Know-All book about hacking - the art of exploring other people's computer systems - that will shock you with its frankness. When *The Hackers Handbook* first appeared in 1985 it caused a storm of interest and went straight into the best-seller lists because it revealed so much about the way computer systems across the world operate. This updated edition shows that as computers emerge further into mainstream life, the aspect of computer security has been thrust into the foreground of political, legal, military and business life.

Hackers Handbook III looks at modems, Prestel-type information systems and networks. It discusses some of the most famous incidents of the last ten years, from the Prince Phillip mailbox hack of 1984 to the millions of pounds that are lost by the banks and building societies annually. All together, a fabbo read which will get your brain twitching frantically!

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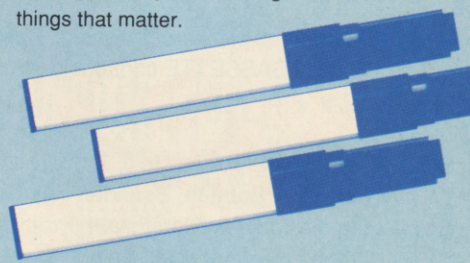


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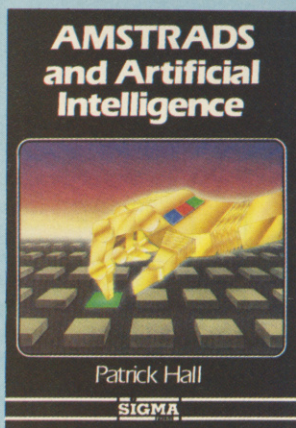
A VERY SPECIAL OFFER!

Amstrads and Artificial Intelligence by Patrick Hall Just £1.95 (RRP £8.95!)

Published by Sigma Press, this book looks in detail at one of the most talked-about topics of our generation - artificial intelligence. Is it really possible to build a computer program that comes anywhere near the capabilities of the human brain?

Amstrads and Artificial Intelligence isn't a philosophy book though - it's a book that discusses the requirements of AI AND offers several program listings that allow you to start tackling the issues at the practical level. Didn't think you could get AI on your CPC? Well think again - then buy this book. Topics include expert systems, computer vision, robots and learning, game playing and knowledge representation. All this for just £1.95 - saving SEVEN POUNDS on the original price! An excellent book for anyone who owns a CPC and wants to take it further than ever before.

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ATLAST PLUS CP/M database program for the CPC6128 for just £29.95 (RRP £39.95)

"Superb value for money and hard to pick holes in" we called the first version of *AtLast*. Now, with the release of *AtLast Plus* by Rational Solutions, you have the chance of buying one of the best (and probably *the* best for the 6128) databases for £29 - £10 less than the full retail price!

AtLast Plus runs under CP/M, and features include up to 32,000 records, ten files per database, 20 fields per record, 99 elements per field and up to 79 characters per element. User-definable report and screen layouts, full on-screen control of data entry, impressive indexing/sorting facilities and automatic data re-organisation are all included in this latest version. As well as this, unused data space is not saved to disk marking out *AtLast Plus* as an essential database for serious 6128 owners.

The package includes disk and full 120 page manual - altogether one of the most suitable programs for organising club-type membership lists, and unbeatable value for money - only through *Amstrad Action*.

Order Code AA353

BACK ISSUES

Expand your Amstrad Action collection!

If you're one of the thousands of readers who've joined Amstrad Action only recently, you'll want to catch up on some of the good things you've missed. Here's how to do it. We have limited numbers of the back issues listed below, which we're selling at cover price with post and packing free.

Issues 8 and 16 may be of particular interest, as both include free cassettes packed with good software. Two series also went down very well. Andrew Wilton's programming course in Basic for absolute beginners ran from issues 8-17, while a series of articles on the CP/M operating system ran from 10-17.

All issues contain numerous game reviews, Type-Ins and Pokes, all making up the best in Amstrad action past and present.

ISSUES 1-6 SOLD OUT!

ISSUE 7 • £1.00 • Educational software reviewed. Tips on Elite.

ISSUE 8 • £1.50 • COVER CASSETTE containing the complete PSS game (an AA Rave) The Covenant.

ISSUE 9 SOLD OUT

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ISSUE 11 • £1.00 • Pokes for Batman, Bounder, The Covenant, Tau Ceti.

ISSUE 12 • £1.00 • Big disc drives, Starstrike II, Programming Pascal.

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ISSUE 14 • £1.00 • Art Studio review, maps of Dan Dare, Price of Magik.

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ISSUE 21 • £1.25 • Type-ins special including Card Trick program.

ISSUE 22 • £1.25 • Head Over Heels Poke + 5-page playing guide.

ISSUE 23 • £1.25 • Launch of Word-Processing series. Utility Type-ins.

ISSUE 24 • £1.25 • Reviews of Tas Sign, Pocket Protext, Exolon.

ISSUE 25 • £1.25 • Create your own Trivia quiz program. RODOS reviewed.

ISSUE 26 • £1.25 • Special on Midi music interface.

ISSUE 27 • £1.25 • Midi and Teletext. Build an RS232. Red L.E.D.

ISSUE 28 • £1.25 • Special Christmas tape! Learning Basic and assembly language.

ISSUE 29 • £1.25 • Six top printers reviewed. Spreadsheets.

ISSUE 30 • £1.25 • Discovering databases. How to upgrade a 464 to a 6128.

ISSUE 31 • £1.25 • CP/M software section starts. Basic programming reaches part five.

ISSUE 32 • £1.25 • Educational software survey. CP/M on ROM feature. Word processing.

ISSUE 33 • £1.25 • Loads of hardware projects! - joystick, splitter, I/O port etc. Comms round-up.

ISSUE 34 • £1.25 • CPC's for small business. Simulation software from space shuttles to bikes reviewed.

ISSUE 35 • £1.25 • The joy of hacking scrutinised! Do sequels work? A buyers guide to computer books.



AA DUST COVERS

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Let's face it, computers don't like dust. Over a period of time it can make them very ill indeed: disk drives and cassette decks in particular can suffer serious, sometimes fatal damage.

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The specially-commissioned Amstrad Action covers are made from high-quality, water (and coffee) proof PVC. They're coloured a gentle beige with smart blue trimming and matching AA logo.

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THE THING!

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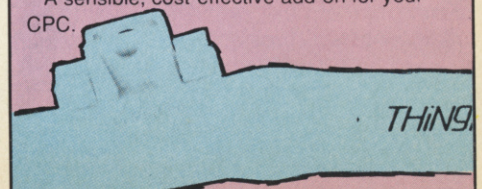
What's white, dangles paper next to your computer screen, and costs two pounds less than in the shops? Yes, a Thing! bought through Amstrad Action.

This remarkable computer accessory - an idea so simple it's ingenious - could dramatically ease your hours at the keyboard. It's basically a cleverly-shaped piece of plastic that attaches via Velcro to the top of your micro. But with a Thing! on your CPC you can have documents, letters or program listings clipped right next to the screen in perfect reading position.

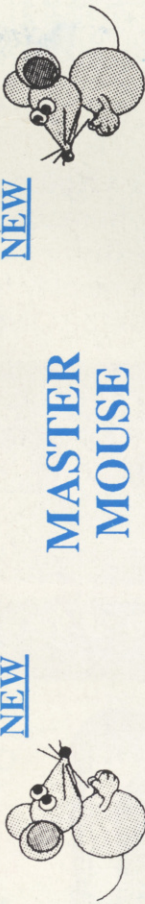
Any task involving copying off paper is thereby made much easier and faster. In fact, the coloured clip supplied is sturdy enough to support an issue of Amstrad Action open, say, at the Type-ins section.

The Thing! comes in two versions, one for positioning to the left of the screen, the other to the right - the Velcro attachment allows easy readjustment or temporary removal.

A sensible, cost-effective add-on for your CPC.

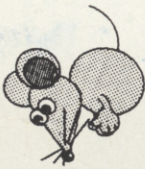


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NEW *** HACKIT *** NEW

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- * Full screen display, no messing in small windows
- * Allows memory to be saved to disc
- * Display used and unused areas of memory
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- * Interface totally invisible to ALL software
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- * On screen help and prompts etc.
- * Search for infinite lives pokes, high score tables etc.

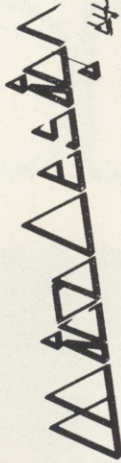
On a standard 6128/664/464 Hackit will preserve memory from £40 to £A67F.

On a 464/664+64K, all memory will remain intact.

PLEASE NOTE:- Hackit is not an automatic program copier, a reasonable knowledge of Z80 machine code is needed to achieve best results.

HACKIT is available now priced only £29.99

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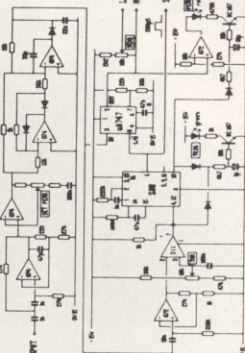


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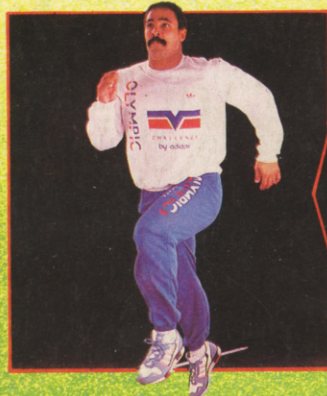


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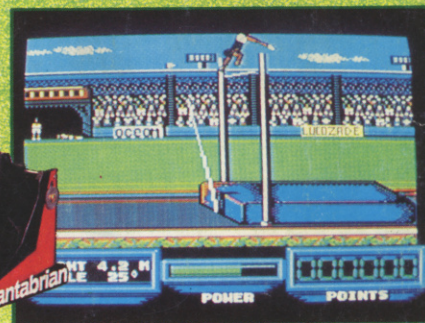
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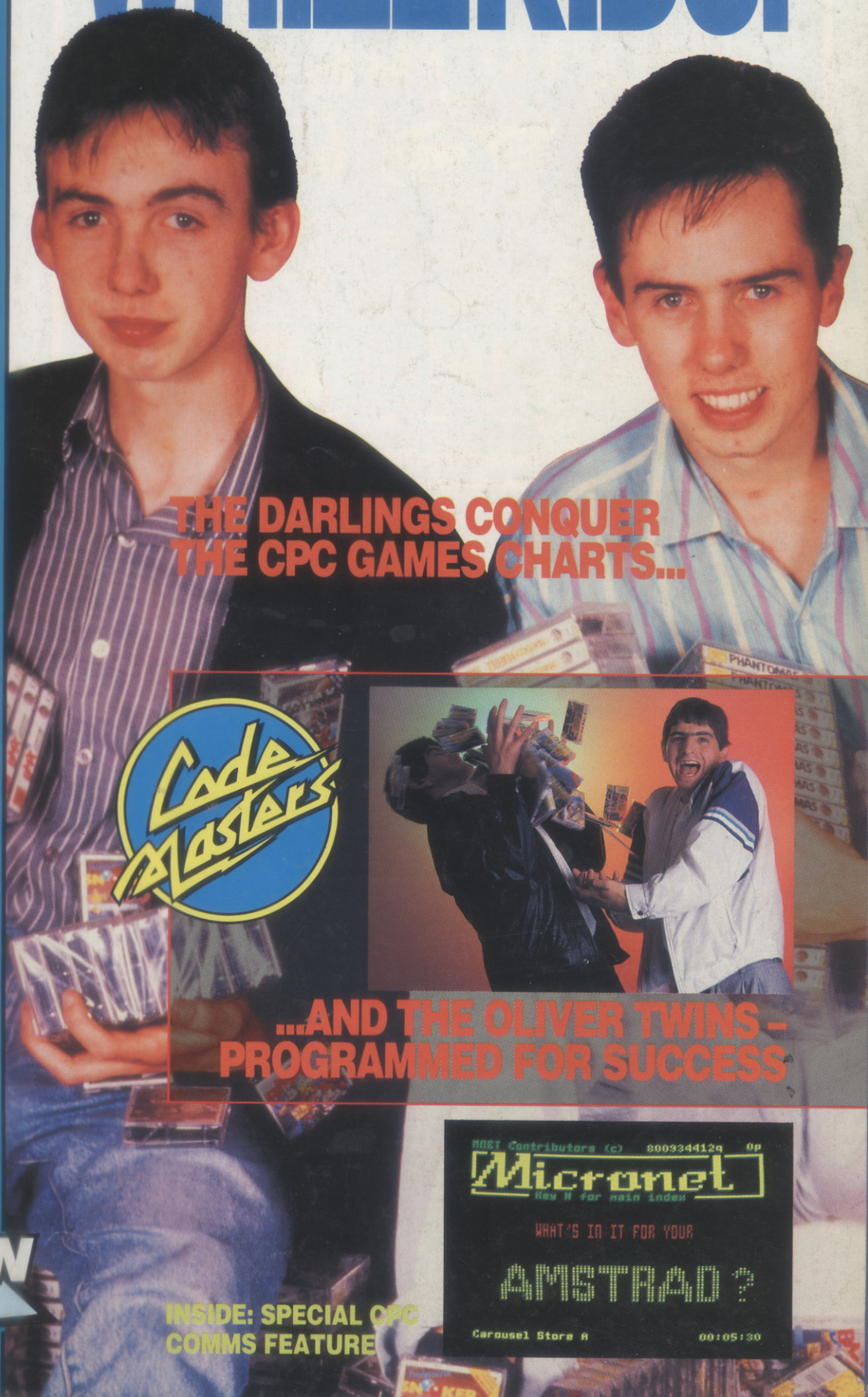
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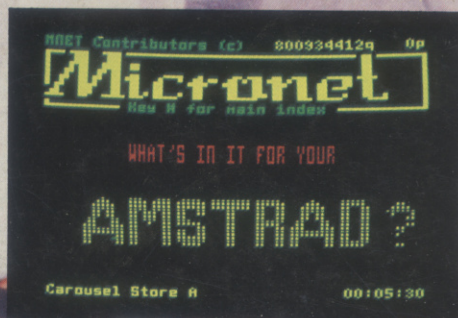
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