

BULGING FROM COVER TO COVER WITH ESSENTIAL C64 INFO

10 pages of
bonus info

COMMODORE

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FORMAT

ISSUE 45 • £3.95 • JUNE 1994

CHECK THIS OUT

A HIGH-PACKED TAPE FEATURING...

REPTON 3

CLASSIC SF BLAST

SPEECH

YOU'LL BELIEVE YOUR COMPUTER CAN TALK

MAYHEM MEGA REMIX

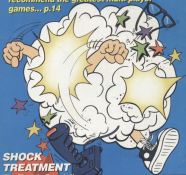
MORE EXTENSIVE MIXING

6510+ ASSEMBLER

ADVANCED PROGRAMMING TOOLS

HUMAN CONFLICT

Face some real competition - we recommend the greatest multi-player games... p. 14



SHOCK TREATMENT

The Electric Boys tell us how they're going to set sparks flying in the C64 scene.

If you're in the computer world you will want these handy reference tools. Get them now before they're gone forever. The cover is yours for only £3.95. The complete set is valued at £15.

Tape to disk SMART!
More on p. 7.

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CF crew SLOGGIN' IT OUT

Things got slightly out of hand this month. What started out as a friendly game of Street Fighter 2 (purely for research purposes for the multi-player feature, you understand) ended up as a major grudge match — you know how it goes. Just because someone beats you at the computer game, the loser takes the prize. “Well, it had been real life...” and things just devolved from there...

DAVE GOLDER, EDITOR AKA, THE BLACK BELT

Actually Dave's about as near to getting a black belt as Pato and Teller are to getting accepted into the Magic Circle. With hands as hard as fuzzy sponges and a look like an disappointed noble (the knees falling over) Dave's prowess at being the CF Supreme Champion are about as likely as Big Daddy appearing in a film that advert.

SIMON FORRESTER AKA, MOUNT FUJIYAMA

We actually had some pictures of Simon in full Sumo wrestler mode, with the setting re-created through the lens. Those strange things like hanging from the belt and more like strange showing that a working man's that full of cut-off-the-entire construction workers. But, unfortunately, these were banned from publication by the government worried about their effect on “young people”, so the edited, it could go out on TV at 11.30pm on a Saturday-night version will have to do instead.

OLLIE ALBERTON, ART EDITOR AKA, BACHING GOAT

In the blue corner we have the Kotonofu kid, light forty-eight champion of the crew. Not much of a fist when you consider both Pato and Dave are well into the heavyweight category and so Ollie won the title by default. He can believe his chances against his brother Pato, though. “I had the rubber duck and using that we trawl across the Subtocks.”

DOWN

WHAT ARE YOU WAITING FOR?

Another month, another packed issue of Commodore Format! How do we manage it? (Caveat: battery, blogging, all those other things people are really into.) And what a coffee we've got for you — it had what was you doing reading this but why aren't you ploughing your way through the spectacular graphics feature brought to you by those April 1997's...



recalling the multi-player game feature wondering why you haven't got events single table gold game set or microconsole? Or learning how to get the most out of your C64 with our steering gear headline. Cude unless! Or playing the brilliant games on the cutting edge capability coverage we gave away this month? Or us. Be off with you, you won't regret it. Dave

OTHER BITS & POWER PACK PAGES

Everything you may want to know about this month's coverage but didn't have time to ask because we've told you what you want to know already. On these very pages, in fact.

9 SHIPPETS

Approaching the news final Friday with a very large plate, we take the facts and, because fact into doubt won't go, we turn facts into news, or something like that.

10 MIGHTY BRAIN

The Supreme Intelligence decides to answer your queries and even lets a few of you opinions. He's about to giving well to his and age.

13 CAPTAIN STEW'S DATAFILE

Once more the mysterious Captain Stew emerges from the vortex bringing with him games news and conversely remarks.

18 PREVIEWS

Exclusive sneak peeks of a few games that are in the pipeline — can you stand the wait? ■ (20)M A 1997

■ DEFENSIVE ■ DEADLINE



26 SHOCK TREATMENT

Ever heard of the Electric Blue? No, they're not an Italian dress outfit who released a European version of Quake 3 (Panic! at the Disco) last summer. But hopefully this summer they will be releasing some quite significant stuff.



Because they've got three C64 games, they'll even profit on the Commodore.

currently in development. We ventured into deepest darkest Germany to find out who they are and what they're planning to unleash onto the C64 scene. It's great stuff.



Head of the Electric Blue

TENTS

14 HUMAN CONFLICT

Keep your sanity — it's much more fun blasting away at enemies you know than playing against some no-life computer that just keeps on doing the same predictable thing time and time again. And so that you write those grudges you've got with your mates in a bit more style than a simple duel the '90 we've rounded up the very best multi-player games the C64 has to offer — true classics like *Street Fighter 2*, *Chaschangers* and *Street Over Heat*. So get those psychics at the ready and prepare to do battle... against some real, live competition for a change.



30 PD FORMAT

If you want to see some of the most spectacular graphics you've ever likely to witness on a C64 then you need to get hold of some demos. Stevo takes a look at what's on offer in the PD scene.



31 MAKING 10TH DAN

So, how's Don still's getting along with his last 'on-up-to-and-at-last-on-up'?

33 MEAN MACHINE CODE

Because you demanded it 'The complete beginners' guide to programming in machine code. Seen you won't be playing the games, you'll be writing them. (well, we all have to have ambitions)

38 SECRET OF SUCCESS

Discover the way to get complete control over all these little in-game features in *Street Run-Up Construction Kit*. You know you want it.

31 TECHIE TIPS

Jason Flash proves once again what a really nice person he is by answering all your technical C64 questions. I know I couldn't do it for him or money.

34 BUY-A-RAMA

Bargain games and so much more, in the C64 second-hand superstore. Once it's out.

35 BACK ISSUES

They're getting out fast, so if you've got a hole in your collection, fill it now before it's too late.

36 BUT IS IT ART?

Discover how to create the stunning in-game graphics. These master pixel-painters, the Rowlands Boys, show you how.

50 NEXT MONTH

Pretty self-explanatory, really.



40 GAMEBUSTERS

For the gameplaying challenged this month we proudly present:

- Mighty maps and tips for *Cherilynd*
- The best level of *Noddy* done into open
- That one of a *Blamblam*/complete solution
- 500 deals with your specific games
- And much, much more (as they say).

Check out the stunning software we've crammed onto the Power Pack for you this month...



REPTON 3

It's got digging and diamonds, but it's not *Blamblam*. It stars a miner, but it's not *Blam*. It's got alien eggs that hatch into friendly monsters but it's not *Alamo*. It's *Repton 3* and it's brilliant.



SPEECH

The title says it all really, 'well, not so much as the program, actually. It's a speech synthesiser, you see.



MAYHEM MEGA MIX 2

Want to hear some of the best music you've ever likely to hear on the C64? Then all you've got to do is load up this demo.



6510+

Top-notch PD assembler

TECHIE TIPS

All this month's Techie Tips listings lovingly collected together for your pleasure.

POWERPACK PAGES



Everything you need to know about that thing that

was sellotaped to the front of this issue - except for how to get it off without ripping the cover. Simon Forrester is your guide.

What's in a name? Well, in the case of Speech it's a pretty darned good description of the program. It uses a code for any other name, except when you get Speech to say it, when it comes out something more along the lines of "Speech". Which all goes to prove, as I'm not really sure, actually, but when all's said and done, Speech is a speech synthesis program.

When you load it up, you'll get all the instructions you need. Great. Great. I'm all yours, then. Think about being out of a job. Actually, don't - it's depressing.

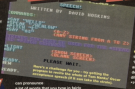
Let's take a look at these three Speech commands, then:

• **SAY** - This command makes your C64 say things. If you use the command "say 'hello'", your C64 will say, "Hello". For something vaguely similar to it, anyway. What more do you need to know? Actually, I think the command SAY pretty

much does it all up. This Speech program doesn't believe in cryptic coding. Next...
 • **SPEAK** - Ah. This is where I actually become useful. You people think you're so self-sufficient, but you'd be nothing without me. Nothing, but, I see while the SAY command

That's where the SPEAK command comes in handy. The SPEAK command bypasses the phoneme dictionary and only says exactly what is typed in on a screen. In other words you have

SPEECH



can pronounce a lot of words that you type in fairly correctly, it's not extremely intelligent and there are some things it gets all tangled because it's trying to pronounce them phonetically.

I'm going to have to explain all about phonemes at this point, aren't I? There are the small sections of speech that make up regular language, such as *ah*, *guh*, *guh*, *h*, *h*, *h*, *h*, *h*, *h*, *h*. Got the picture?

The SAY command takes what you typed in, breaks it down into phonemes and then says those phonemes in the correct order. Sometimes this works okay, sometimes it doesn't, because the program's phoneme dictionary is fairly limited and cannot work out when, say, when ought should be pronounced all in or ought or are as it ought.

45

COMMODORE
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REPTON 3

POWER
PACK

TECHIE TIPS

MUSIC
MAGAZINE
SPEECH

0010 + ASSEMBLER

to spell out the word phonetically - Simon would need to list every sounding like "Gyamm" to get a good result.

Other examples of differences would be in situations where the letters *W* are used - the SAY command comes up with "waver", but the SPEAK command offers "waite", whatever that is. The key here is experimentation - you might have to give a word a few tries before you get it sounding exactly how you want (especially if you come from Massachusetts).
 • **RETCN** - RECALL and, first. You use the command with a number from 1 to 30, to set the pitch of the words are spoken at. It you want a great demonstration of this, listen to the difference between speech after
 **RETCN 10 and **RETCN 1.

And that's it. If anyone comes up with a truly stunning and original use for this package, write in and let us know. But please, no complete ethnology of Moravian and Basille tribes - I don't think we could transfer that.

NO LOAD ZONE

If you're having a hard time finding the month's Power Pack then check the cut-out on its (left)

ring, stick in a non-coded card, and it will send it to DATA REPLY Department Service, 46th Ave. Suite 9000-1B, Bayside, New York 11361.

Tel: 212-639-7140

QUICKSTART INFO

"SAY" "Writes a message" - Say something
 "SPEAK" "Writes a message" - Phonemes
 "RETCN" "Changes pitch"

Other info helps the user at about 10 and printed using the phoneme system.

It's hard to say if it's one of the all-time classics that motivated the industry today. It's one of the original BoulderDash-style games. First programmed on the BBC Model B, the game's basic structure soon escaped from that old dinosaur and out onto other superior hardware like the C64. And so, we are proud to present from Superior Software, *Repton 3* - the patch is back.

Imagine it - you've very soon obtained into. Well, you're not so equipped other than a pickaxe (oh, being an incredibly strong, reptilian thing, that shouldn't cause too many problems).

The game takes place in a series of nine shafts, containing with ancient walls, huge boulders, equally massive diamonds and the eggs of quite a few incredibly dangerous creatures. Above all, though, there's dirt. Loads of dirt. More dirt than a copy of these fan. You spend your entire life digging through dirt. Digging. Dig. Digging. Let's do it...

And so, just in case to these things up before you give up completely and resign yourself to a life watching neighbours instead a terrifying alien arrive on the scene - an egg hatches to reveal a huge, green, flesh-eating globe intent on more than eating, 'it' and choking you to the head, head.

Okay - you've just landed it up. Can you see that monkey on the screen? That's you, that is. Well, for the course of the game it is, anyway. It's not getting personal. Can you see any boulders yet? They're the huge round bumpy red boulders on pieces of dirt, if you mine away that dirt simply walk through it, that

Back, it's a fact that does 'fall. Especially when they're always about there and you get a squish impression.

REPTON 3

FULL GAME



In the keys are all that one, than the boulders are probably large enough to crawl through anyway.

boulder will fall. Don't worry, though - you can hold a boulder up if you were standing directly beneath it when you mined away the dirt supporting it, but if it falls any distance onto you, your flattened corpse will probably be discovered in a few

years time by some poor, unappreciating passer-by.

You'll have found out by now that there are also a few lava walls about that are impervious to your digging skills - you'll just have to move around them. There's something else you might be interested in, though - diamonds. You'll be able to spot these easily, as they're huge, yellow and shimmering shapes.

Unlike boulders, they won't fall if they're unsupported. They won't fall you, either - they'll just make you rich.

These boulders are unstable things, you know. First,

they'll quite straight off straight off anything with a negatively curved surface, so look out below. You'll

soon quite a lot of time being crushed under massive bumpy loads of rock at first, until you get used to the speed that makes fall boulders. They're too fast to see). You can push walls along the surface, but you can't push a boulder along (only one at a time, folks).

A few more things - you'll find keys, which you can open using the keys that you'll also find littered around the place. If you come across eggs, don't worry - these are your friends (it's not as dull, as certain points in the game, you'll find little blue warty things. These are spirits that they trapped in the cages if they come into contact with them. If they come into contact with you, though, you're dead).

All this and so much more - you'll find teleporters, instant death skulls and a few other bits and pieces that I don't feel like telling you about, you can find out for yourselves (it more for that way).

I know what you're thinking - there's a level editor hanging off the back of this game, but I think it'd only if they're possible - Davey! Yes, there is. We'll be covering that in a later issue, along with tips on how to write your own challenging levels.

QUICKSTART INFO

UP	to
LEFT	left.
RIGHT	right.
SPACE	down.

Quick note: You need to be offered arrangements of rocks and the movement of your pen.

Tape to disk

If you're lucky enough to own a disk drive and want to use it as well as where it, then you can get hold of the month's Power Play on Disk. Simply cut out the coupon on the tape into card, write your name and full address on a piece of paper, pop 'em in an envelope with a cheque or postal order, made out to Miles Audio Video, for £1.95 (to cover Application costs) and send it to:

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6510+

Unlock the true programming power of your C64 with this excellent machine language assembler.

An assembler, for all those who haven't been following Dr. Phil's Cookbook, is a program that takes your assembly language instructions and turns them into a machine code program that your C64's processor (the chip on the motherboard, BASIC, essentially, is just a machine code program, you see, so BASIC programs have to be run by a program that's being run on the chip — the programs to do the job of this, in effect. This is also, programming in machine code means you're running one program directly, cutting out the middle man (BASIC), making that program faster and more powerful — if your machine can do it, you can make it do it in machine code.

Now think you don't need that? Every arcade game that's ever been given a good look has been written in machine code. BASIC just can't cut it. You still need to know how to use this program, though, don't you?

Right — the program you'll find on the disc will install a copy of 6510+ on the tape or disc of your choice. The package itself is way too complex to go into here, but anyone who's been coding for any amount of time will already know exactly how to use it.

What if you're a beginner? Well I can't explain how to program in machine code here

(there's a new feature starting on page 22 that does all that stuff), but I can explain how this assembler works, so you'll be able to use it with the various excellent technical features CP has.

Your listing is written in the form of a BASIC program using statements as opposed to normal BASIC commands, that 6510+ will take and assemble, in other words, when you take each line of the machine language thing you want to assemble and give it a line number in the normal BASIC way.

After the actual assembly instruction that's the bit that Jason will teach you over the next six months, you can place a comment which will add the a REM statement, though it will have to be preceded with a ' or a '.



ASSEMBLY DIRECTIVES

Not all commands have to be macrocoded, by the way — there are some directives that, instead of assembling into real instructions, give the assembler itself specific instructions (if you're new to assembly language most of most make most sense yet, but it will soon if you carry on reading the Mean Machine series).

ORG — This is used to place bytes directly into memory. The correct format for this command would be something like ORG 17, 26, 23, which would place the bytes 17, 26 and 23 consecutively. By the same token, you can give the command a text string and the assembler will place the ASCII values of each character into memory instead.

ORG — This is the same as ORG, but you can use it if you're used to that command instead.

SPACE — This one places a few bytes worth into memory. The command is SPACE would place the bytes 24 and 24 consecutively in memory.

END — This command is used to indicate the last line of source code.

END — You can also use END, as both commands are used to chain two source files together. If you used the "Goslow", the

assembler would switch to the new source file to continue assembly. Bear in mind that all chained files must end with an END directive. END — This is very similar to END, but allows you to insert a chunk of source code from elsewhere into your listing. This command doesn't so much switch files as paste another one in.

ASSEMBLE IT, THEN

When you've finished your program, you'll want to assemble it, soot you, the easy way to do this is with the ASSEMBLE command, that doesn't need any other parameters. It would be to start assembly from a particular line number, though, you can state that line number (ADDRESS 50) and 6510+ will happily oblige.

One point — 6510+ modifies a few other BASIC commands in order that it can work properly. While this is great and everything, it does mean that some normal BASIC programs may not work with the assembler in memory. To have been warned — about most of running normal BASIC programs with 6510+.

MAYHEM MEGAMIX

More colorful mayhem from the master mixers John and Steve Howlands. 28 bits and faster is some of the greatest games made in the history of history, all of 'em from Atari games, including Endurobot, Christmas 2 and Mayhem in Wonderland.

And it's all wrapped up in one of the best-looking option screens you've ever

seen to see. Just hit the function keys to select what game you want and then hit the enter corresponding to the time that you want to hear. To start and stop the music (plus a few other effects)



see the Mayhem cursor at the bottom of the screen, which is controlled by your joystick. There are back and enjoy.

6510+ IDIOT'S GUIDE

We're going to use a program from Mean Machine Code, the featured series that starts this month on page 15. The listing can be found under the heading "Beats on line" within the feature, and here's how to use it with 6510+.

- 1 Load 6510+.
- 2 Enter the following program in BASIC:
10 LDA #0
20 STA #0020
30 END
- 3 Type the command ASSEMBLE.
- 4 There is no .M file. Save, enter 10T

QUICKSTART INFO

- 11-17 Select game.
- 18-24 Select time.
- A/E More Mayhem.

Other info You select the various functions (right, left, stop) by moving Mayhem over the numbers at the bottom of the screen and pressing the 1 to 10 keys. It's got to be one of the best-looking control systems we've ever seen!

SNIPPETS

Summer's coming, the geese are getting thin, so's the news, but here's what we managed to find anyway...

SUPPORT YOUR C64

We've just received news of a brand spanking new format called simply Sixty Four. It plans to cover all kinds of C64-related bits and pieces, including programming courses for novices and experts, previews, reviews, and lots of other stuff.

For more information on this new brand of major media support, just write to LB Sabourin, 848 Station Road, Whitford, Cheshire, CRY 3DL.

The '64s will also be running a campaign for getting C64 software back in the shops. This is why with every copy, you'll receive a form to fill in and send to the software houses of your choice, hassling them to produce more software for your machine. Yes.

ON THE TRAIL

Following their brief appearance in last month's news pages, up and coming indie coffee Parallel Logic have just announced the release of *The Venus Trail*—a text adventure

SAVE THE TREE, MAN

Being in the business of making huge amounts of paper each month by printing magazines, we thought you might like to know that we take the whole thing very seriously indeed. Commodore Power is now printed on paper from



managed forests, meaning that for every tree we hack down to revive a PC collection of whatever, another tree is planted in its place, ready to grow old and get eventually hacked down again for another magazine in the future.

Also, it stops huge amounts of damage to the ozone layer, rare and interesting plants like and huge mud mountains in Canada, the magazine you're holding at the minute is printed on ECF paper. The ECF bit stands for Elemental Chlorine Free, as we don't bleach the paper with chlorine. The docs tell us it is that you can no longer claim your swimming pool with the mag since you've finished reading it, but we fear that the massively environmentally damaging chloramines are pretty good for that.

DEDICATED FOLLOWER OF FASHION

Are you tired of dull T-shirt designs? Do you want to wear your own interesting designs for a very low price? A company called Dotti Marketing may have the answer - fast-on your dolls. If you have a computer, a printer and we can, you can create designs that Jean-Paul Gaultier would love. Well, we couldn't really help all for Paul French, general-whatever name we couldn't really help all for.

The pack includes sheets of paper, T-shirt rights, it's special paper, though - when you print a design onto it, you can't see the design onto any piece of fabric (it helps if it's cotton-based, but polyester's a terrible enemy), and have your very own personalized colour matching T-shirt.

The packs will soon be available through most computer retail outlets, and will cover a wide range of printer types, from cheap, shared and new printers, right through to desktop printers. As you too would look like the people in this photo, send a name and balanced bill, and wait T-shirts denoting your interest in sports to demonstrate that you're bloody perfect. Dotti!



with a bit of a difference which is due for release any day now - what's the difference? A shoot-'em-up sub-level, that's what. Written on BRUCK, it's designed to attract action fans in the way of the last adventure game. Sounds pretty easy, but?

The team are also putting the finishing touches to *CR1 101*, a package that hopefully we couldn't bring you a review of this month. Fear not, though - next month will see the full review in these pages. (I know what you're thinking - £50 1000 has been around for a little while. This is YDS, the machine code version, you see, so it'll be faster, more powerful, and more beautiful.)

For more info, you can write to 40 Windon Avenue, Whitford, County Ayrshire, Northon Island, BT26 9EX, contacting either Dotti McEveder or Philip Boyce, and I'm sure they'll be happy to help you out (or the club's will).

YOUR CHANCE TO SHINE

If you're up to anything the world ought to know about, then why not write to Snippets at the address on the back page and it could be you we're poking fun at.



DEAR CF

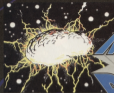
Do you ever wonder how often the magazine will send you a copy? I know you will, and I know you will be disappointed if you don't get a copy. I'm sorry to hear that, but I'm sure you'll be happy to hear that we're planning to send you a copy of the magazine every month. I'm sure you'll be happy to hear that we're planning to send you a copy of the magazine every month. I'm sure you'll be happy to hear that we're planning to send you a copy of the magazine every month.

DEAR COMPS EDUCATION TRUST
 BRISTOL, G1 3SD

If you're interested in finding out more about the magazine, please write to me at the address above. I'm sure you'll be happy to hear that we're planning to send you a copy of the magazine every month. I'm sure you'll be happy to hear that we're planning to send you a copy of the magazine every month.

SHAREWARE PLUS
 1000 Lakeside Drive, Suite 100, Northbrook, Illinois 60062

Do you like to share your software with your friends? If so, you should consider Shareware Plus. It's a free service that allows you to share your software with your friends. I'm sure you'll be happy to hear that we're planning to send you a copy of the magazine every month.



THE MIGHTY BRAIN

When the definitive history of the universe comes to be written, there will be a whole chapter devoted to the Mighty Brain (and you never know, his work as letters editor on might just make it in as a footnote).

THE AFFORDABLE CHOICE

Dear TMG,

I am a proud OGM owner but I also have a Megadvice. It won't surprise you to hear that I buy more OGM games so they are for cheaper.

Anyway, I have a few questions for you plus a couple of suggestions. Here goes:

1. You said you might get Head Over Heels for the coverpage. Please put it on as I was going to buy it anyway.
2. Does the Action Replay II make tape games load quicker and do they cheat for most games with its Cheatboard?
3. Why don't you make a special section of the magazine to do some in-depth reviews of old or classic games?

Friend, we saw the first one a while of a game feature.

4. You said you might do a feature called 'Dare of a Game', but you called it 'Competition' for not being original and exciting you. Guess who did a 'Dare Of A Game' feature about a year ago with Jon Walls? I bet you won't print this letter now that I've said that.
5. My Dad won't get past one of the 'Dare to Bleed'.
6. Why don't you ever change the Mighty Magazine?

7. I think Football Manager World Cup Edition should be low pressure while Real Digger should be high pressure.

8. If I give you the money will you get me 'Megadvice'?

David Kennedy, Woodbank

1. We can't make any promises about Head Over Heels yet, as how you're faced with a moral dilemma - do you buy it or not? Wouldn't it be odd if we knew all the answers? Ah, don't get me wrong that subject.

2. As for the Action Replay, we're sorry you can't get the only thing playing it one-speed. Is Yes. Just if you see the meaning of that as you fall - there are a lot of games it really can't follow up, but it does the best.

3. I'm sure we'll be a good idea.

4. I don't see how we can do that. We were the first with a Dare Of A Game feature about two and a half years ago with the Droid Guide to



Features & Comments

Features, always has been, and always will be the most original thing OGM mag.

5. A new function of games in the Earth Society of your is. I feel, to be completely useless at things like children find ridiculous stuff.
6. We do. It just needs a bit more originality.
7. I decide what goes where.
8. No. What do you think I can? A mail order catalogue? TMG

READER SURVEY REVEALS SHOCK RESULTS

Dear TMG,

I really enjoy reading your magazine and playing the games. The first issue I bought was OGM. The best game I think you have had on the Pioneer Pack is JFM, the block game.

I have sent you a graph of people who ask to play on my OGM when they have game consoles. So keep up the good work, guys.

Michael Williamson

These console owners, they're so frisky, aren't they? Especially on Saturdays. I've long suspected as much and now your graph proves it (I'm not being too punning, am I?)

TMG

MIGHTY
2 1 0 1 4 3



We were that in December to make this graph, will provide additional information available about the OGM, maybe.

READER'S TOP 10

1. Strife
 2. Tyrol
 3. Captain Blood
 4. First Samurai
 5. Space Dash
 6. Ghosts and Ghouls
 7. Ghosts and Goblins
 8. Slayer
 9. Salamamba
 10. 10.
- Ronan Cook, Birmingham

TRY, TRY AGAIN

Dear TMR,

This is the 1,000,000th time I have written to you. Yeah, yeah, yeah, all right, yeah, yeah, yeah, but please to stuff you up, yeah, yeah, yeah, all right, I repeat into 'yapping to get on TMR's page' syndrome. Anyways...

1 In CPM you had Arnold Brierley that the answer to the riddle in Brierley's Fall the 1984/85. It is, however, SWOOP as I love Brierley's Fall it just wanted to publish that out.

2 Please can you thank Brian for allowing me to write to Europe in CPM's Free Falls section of Brian Dyer's Day-A-Rama. I have written to him.

3 How many things can you think of to do with a large class, an LP of 101 Australian soap opera classes, a two-year old tube of foot cream and one vintage cassette player? I've checked up JB.

4 Do you watch Rm and Olingy?

5 Where do I write to join the Lisa fan club?

666 I enclosed a tape of a single released with a computer game for the Oregon 554. The original song coming on the same tape as Phoenix. I think it's great, average but good. From the standards of...
Graham Bungebyrd, St Albans

1 Only, the girl has, as they say, been there (proof) even with my 42 of which I've never been able to work out what that means. I was on holiday in the Costa del Sol for CPM and as an investor stayed in the Blue Hotel who only had an AC in the late 80s. But I'm not saying who.

2 Yeah it was and only finished by the way, let us if it looks to mortgage.

3 That depends on what kind of large club you mean. If you mean a large club like Liverpool FC then it's 2,000, but if you mean a large club so it's a top club, then it falls to a mere 1,000.

4 No, I once appeared in it, though.

5 Try PCP Plus, Palace Publishing, 35 Moorfield Street, Salford, Avon BS4 2BN.

666 Put it in a bag. Who is not going to put it in the Fridge Pack. TMR

BATTERED BLUE BOX

Dear Twisted Multitasker,

1 Why does Dave the Doctor (DWT) fit's completely valid.

2 Do slightly brains have intelligence?

3 Do you get fed up with letters asking you what the best's favourite games are?

4 Will the Blueboxes be selling any more games for the 1984?

5 What are the best's favourite games... games? But I feel you going there.

6 Is it just me or is it irrespective an understated, forgotten classic?

Quanta Clancy, Ludlow

1 It's some deep seated psychological problem.

2 Our home planet has within the equivalent of 50 years and 250 days in your terms. This makes travel for a fortnight, a bit but the relative other things you human needs could not comprehend.

3 No, we're not looking for it in any case. I'm assuming of our options, so we appreciate any opportunity write again.

WONDERFUL WORLD OF COMMODORE

Dear TMR,

Did you know that Commodore Remmy has sold 100 CPM's even though they are now 100 per cent reserved. Also the CPM isn't meant it is just the old being boy and software houses being money-minded.

Proof: Robert has

many new games being released from its main software house, Labyrinth. Gemmy has loads of games released every week from Merit and Twelve and CP World. Also, there is software coming from Australia and the USA, but the problem is getting hold of it here in the UK.

4 Unfortunately, it seems unlikely.

5 David... the stuff that makes Commodore go fast. One - laughing gas.

Small - failure.

TMR - Avon 7 (you haven't) Bounced? I get.

6 Here at CPM we don't understate it. We give a 100 per cent. But yes, it could do with a bit more recognition. TMR



Terminal 2000 - what's that about?

FAD GADGETS

Dear TMR,

I disagree with John Blandford, computers aren't a fad. They're here to stay and growing. It's the companies that don't think outside the box including do they are just simple computers (the plug in and go) and therefore aren't in the market. If companies start to have imagination in every form that computers will be a big part of it. Keyboards will be sold as peripherals for the sophisticated home computing (the dream of the 80s) will take a back seat. Forming a computer or an old computer magazine predicting the demise of home computing when the first computers appeared. It's a sad fact, but true.

The fact that most console games are conceptual conversions from other formats or rehashed 8-bit classics is irrelevant. The console club wouldn't know symmetry. But those of us that played the original computer games can sit back with a smug, knowing grin. It's a shame front-side will leave the benefits of home computing.

Now it's time for what I give off as a tangent for a moment, but is it just me, or is CPM reading

This is when I thought of a good idea. Why don't you write to them and say that I'm unhappy? Even if you don't like the idea you can still fit your pages up with gutter reviews. It's Marvellous Great! Yehaahh.

Unfortunately Commodore's position is a position where you're reporting business at the moment, but there is always on the table as far as considering those European software companies you mentioned just. And with CPM readers, who know — a UK distributor could well become interested. TMR

make the floor (or there these days)? The last thing, but don't let things go too far.

Cuegle of ideas: Jeff Winter. You said a Blueboxer a while ago, but how about a complete filling? Why? It could debut all the releases on all the magazines and what he's up to now (Compass 2000 on the Jaguar, but what else?). You could do Andrew Blandford and Benjamin too, but don't do the Blueboxes (no offense) — they're good, but they've been in CPM months to months but fit eggs here.

You could also come for CPM's come in Europe and the US. Do leave about backing about the other CPM game? Maybe readers could read in the future of the other games (like the status and attack) or the Museum (which by Jeff Winter from 1983 and Motor stands from 1985).

Anyways, congratulations, after 45 issues you've finally impaled that Franked Head. Blandford, Blandford.

I'm not convinced that home computing will take a back seat to consoles — it has never happened in any other planet. What will happen is that the few things will change. It will happen if you wanted to play computer games at home you had to buy a computer (unless you want for one of those pocket/miniature things), only a minority of people who bought them would actually use them as home computers. The alternative was that people have the 3000 of games only machines, but there will always be a subpopulation of people interested in real home computing. I also don't see you explain the main question in the PC issues magazine sector?

Should you should mention that the 1984, since the arrival of CPM, multi-CD-ROMs will still get the magazine news. The best occurred in the past, but, computer work in The Electronic Times, both, South and through others, improve! TMR

BONK THE GONK

Dear TMR,

I would like to see any news on the decline of the consoles, a situation denied by a certain Blueboxer's Guide in CPM. Notice how both you



and Gosh use the names SNE'S and Megafire. What happened to the MSB and the Master System? They didn't last long, did they? My brother got a NES for Christmas a couple of years ago and got several games with it. The games had good graphics and more colours than the MSB but they were all completed by February. I'd never seen it now. The last time I saw him use it was for five minutes last July. It just gathers dust.

Commodore, five years ago I was given a C64. It immediately replaced my ZX Spectrum and I have used it ever since, and will do for years to come. Why? It's the central hub of a computer. I was so attracted to it, that when my original C64 died I went out and bought a new one straight away.

Does fast filing — encode owners probably think it's a bunch of old togs attempting to keep the old days alive. We're trying to keep a real computer alive and besides I'm only 14. Best wishes, *Benjamin*.

PS For the record, Commodore never are not bankrupt. When I was 11 my C64 was 140 and is now approximately 100, making it an excellent purchase. Thank you.

While your argument that there is a cloud of fear (MSB's and Master System's are still very much alive and are still being sold in high class stores, the C64 is not... well that may be because you are spot on. History will show that the C64 was a far more advanced piece of equipment than those other rather scrappy little machines. And if the MSB's and the Megafire's do manage to outlive the C64, it proves nothing about the quality of any of the machines. We know which is the superior machine, and that's what counts. **END**

THE MIGHTY BAROMETER



BITS'N'PIECES

1 I am writing to ask if there is anywhere where I can get Commodore (and other) bits? I have been everywhere I know to find it, even where you released it, *Derek Williamson, Peterborough*.

I notice there is a shop on the Business of the page? Despite the fact that a shop of repair it needs to visit (for insurance tax reasons) it really is fit out of your way get a shop to order it for you direct from Progress. **END**

2 I am not happy about the should have on Spectrum features that you will work (the authors. What can I do?) *Anthony Preece, Swindon*

Miss **END**

3 Hi C64 Tommy Sanders asks, "Is there any chance of a software-writing, 32K, 64 game writing unit? This is just from your number and that would be 30 degrees to the right." *Col Johnson, Huddersfield*

That's what I like — several letters. Your need the most to learn dimensional writing. It's a real useful for working out the direction. **END**

4 Where can I find Tim Stanton? *Foxy Knowledge, New South Wales, Australia*

Does anyone in the BBC Video have contact details that the Duke (aka) lives in Australia, so I suggest you look in your local video shop. It was that Tim Stanton who was returning to **END**

5 Hi C64! There was a section on how to clean your C64. It showed a picture of how to clean up your face cosmetics. There wasn't a bit on it. Was it broken and *Almsham Kinnear, London*

No, it was intended in a special operation under expert guidance. But, that's the official version that Don's allowing me to put, anyway. I really had nothing to do with being used as high volume products. *Richard END*

6 Could you please tell the who markets 64000 applications? *Richard Edwards, Lincolnshire*

Try Software Plus, Fulham Road, Croydon, Surrey. *Patricia and Kingsley Cooper, Ipswich, 29 Elmton Road, Bradford Gt 224. END*

100 PER CENT

Dear old so Mighty Brake (ground, gravel, gravel, stone, stone, etc, etc, etc).

- 1 I have got to the biggest machine in Britain. Have you got as far as that?
- 2 How the biggest? Tell us your destiny if you know of course?
- 3 What is the steady number of Mountain? personally it's my favourite element and it comes close to us.
- 4 How you harvest at gun-point to do this job?
- 5 When I read the computer maintenance pages in C64 I noticed that you need some paper attached in some nodes. But my mate thinks that you cannot buy paper attached in the shops? Is this true?
- 6 How long has the C64 been running as a home computer? *Sam Swanson (14), Wiltshire*

- 1 What do you think?
- 2 Are you obtaining any papers?
- 3 NO. And the most right thinking without systems. I think it looks absolutely bad.
- 4 I fear so for some. In fact I fear nothing. Except... ah, but that would be telling. No, I am doing the job purely for research purposes.
- 5 It's certainly harder for you to be sold abroad. You certainly should be able to buy any sort of attached at your age. But placed the Booth 50 off

things for multipoint sports, which do the job fine, in give that a go. Though be careful, they'll

6 that over a decade now. It's about time someone turned it off. **END**

PS OF THE MONTH

Please print this letter out if you don't I'm going to buy a Megafire. *Ben Newman, Aston Keynes*

You too. **END**

WAS AMIGA?

That just about wraps it up for this month except to say to Richard Hodgson of Wood-Center Edge, sorry, you lost the bet. You can't say that about Lisa and expect us to print your letter.

But if any of the rest of you have something you'd like to share with the world, write to us, The Mighty Bits, here at Commodore Forum, Future Publishing, 30 Woodhead Street, East, Ayles Hall 2099. And remember, more people here in licensed houses in the UK than in telephone boxes, but that still doesn't make it right.

CAPTAIN STEM

Stardate: June 1994. This is the Captain's log. I have exited at this junction on the time highway once more to deliver CF readers the game news for which they hunger...

Greetings. Once again I emerge from the time vortex to introduce another jam-packed game edition featuring the very best of the past, present and future of the C64 games scene.

As you will see from the previous pages (18 and 22) the game explosion reported last issue continues to have aftereffects - yet more new games have been announced, and from the screenshots we've seen so far, the could be pretty impressive if they pop forward a few time eras. We also have an inter view with The Electric Boys, a new C64 dedicated company that has got some really big plans. And I mean big as in really, hungry big, not just big as



Deliveries to Greenland (page 18)

in "big savings of your local Texas store". And don't forget the second part of making 100 stars. Jan Frick's reaction to our produce (the greatest C64 best) 'are up your'. Discover how his ambitions are shaping up on page 24.

Though I am a lover by nature, even I recognise the primitive attraction of a really good multiplayer game. So don't miss out on our special Russian Certified round up. If you want to know which games offer the ultimate head-to-head experience,

WHERE WILL THEY BE?

Once you have navigated through the offering last column of time to bring you a "Where Are They Now?" feature with "introduction" - the title you will be going to be. This month's featured edition is a very good & favourite game, *Legend*. Story:

- After appearing in his first C64 game, *Crystal Kingdom 2000*, the small one took a short journey the Atlantic to try his luck as a comedy star ("Two bits, better" - go one half of the CF reader who "I am here" - "I say the other half).
- It was not a success. Like the other stars who couldn't make it to the bottom, Gary was dismissed by the comedy crowd. His simple design and primary colours, with not a hint of shading or anything else that might suggest he might be three dimensional, just didn't please those American graphics all in their faces right.
- After this he had to work a logging career by planting himself out as a lumber giant representing a virtual reality game. It was a failure.
- The tragedy was that after this self-oxidation, he couldn't even get the kind of job usually associated with eggs - Easter egg hunts, about his for right past that, that sort of thing.
- But finally, the big break came. Literally. In 2004 Gary's accumulated (virtually) work given a final total - combined with success.

PLAIN SPEAKING

Welcome to the Captain Stem guide to computer industry jargon - what they say and what they mean. This month we introduce the vital game reviews ready now:

- "You'll like it if you like this sort of game" - it's a high job.
- "Waggle better" - sports car.
- "Woofy" - it looks like the programmer is sporty on it, but God it's hot (see higher entry).
- "Deliver whole graphics" - high images of primary colour.
- "Visually stunning" - it's inside I'm going to mention how crap the graphics is.
- "Great two player mode" - the office ground is a ball for those days.
- "Overrated" - I don't write in *STREET*.
- "Additional gameplay" - Oh, the profs look cool but give it a go.
- "Futuristic arcade conversion" - who do I think I'm talking?

CROSSWORD FORMAT

Across

- 1 This monster starred in the all-time top scoring game in GP.
- 2 The film company that released at three star films.
- 3 USA basketball association.
- 4 Bruce's budget book.
- 10 Radio isn't a very careful character.
- 12 One before the Sun, Bling, Ben and Peter! Spoken from Commodore, which is a big enough clue to itself.
- 13 Speak [] Ship - one word completes both games.
- 14 A leading game that takes its name from the mass of males.

Down

- 1 You look at one of these every time you play a C64 game.
- 2 Slang for "Yes".
- 3 A vector graphics space game that's the crown of the crown.
- 4 People debate things in one.
- 7 Something and .
- 8 Present company of The 99 Squad.

- Once you get used to the question you can go onto the next one.
- 15 Short for specification.

Answers on page 10





KNOW YOUR ENEMY

Who says computer games are antisocial? Some of the best silicon action you can get is in two-player mode. Simon calls over a few mates, plugs in a second joystick and checks out what the C64 has to offer the social gamer...

Ever since the video game industry began, developers have worked tirelessly in order to make your computer game opponents smarter. Tossing with computer chess and playing on from there, programmers have dedicated massive amounts of time to creating algorithms to try to outthink the player. Of course, being human, the player has always been one step ahead—until someone creates true artificial intelligence, but that never to be substantiated prospect of a more program (unless you're David).

The reason you're so confident that you'll outsmart your CPU is especially clever, but because it's been given a whole library of strategies and moves, created by an

especially clever chess master. The problem is that it's too pretty much the same move every time it meets a certain situation, since you've walked out its system, you've got it locked, just like you learn how to beat an end-of-level boss in shoot-'em-up by learning its movements.

So once you've beaten the computer chess, that's it, no more challenge. Your computer can never learn and apply new strategies, but as it's not capable of independent thought, so, now you've proven your superiority of chess, where do you go from there?

The answer is simple—if your computer can't

learn, find someone who can and play chess with them instead. Chess isn't the only game in the world, though—if you're bored with shoot-'em-ups, wouldn't it be nice to be introduced to a particularly cunning enemy? If you would, there's only one way to do it—get someone else to play alongside you. And to, there were multi-player games.

TAKE YOUR TURN

There are two main types of multi-player games, sequential and simultaneous. If you've ever played the popular two-player Space Invaders-type game, you'll know what a sequential arrangement is—a you-in, grabbing as many points as you can until you die, at which point the second player takes the joystick and tries to top your score. These are all very well, but the ones you're up against are all *much* smarter! Simultaneous multi-player arrangements are where it's at—the players pick up their joysticks



and battle it out against each other directly. Your success not only relies on your own abilities, then, but on the other player's ability to stop you—or

TOP MULTI-PLAYER ACTION

Here's a look back at some of the games that have changed the face of multi-player games as we know them, plus a few that just deserved the show of action.

BLOODWYCH

Bloodwych joins a list that names as games after it, was known as Dungeon Master if you're accustomed to it. Two players come with in Bloodwych game before. This idea is similar to the original 3D Master Quest but with twists on, where

Bloodwych excels in with the addition to this style—instead of a basic, empty maze, you're facing hundreds of walking dead, collecting keys, opening doors, finding switches, finding secret walls, learning new spells, fighting, gaining



Bloodwych, also known as Dungeon Master

extra abilities and more weapons, leading with players to race and share and reach, much more.

The advantage of the two-player version here is obvious—the screen is split horizontally, each player controlling a party of four characters (moving through the game maze, as well as being able to use each other the player suddenly has the opportunity to go all out on their own thing, attack the other player, or go-peace. More than any other game, Bloodwych brought out the social in players—

turning around and plugging someone in Gauntlet is one thing, but spending quarter-of-an-hour backing them-down and setting up an ingenious ambush is quite another.

Rating: **★★★★**

GAUNTLET (1982)

Two-player Gauntlet is one of the all-time classic game playing experiences. The idea is very simple

two players, standing around in a room, shoot, attack or defend as you like the best, and say their say through several limited levels of fast graphics at the night. This watch the action from an overhead perspective, which gives you a better view of the maze you have to kill (and).

The two-player system seems slightly strange at first—unless Dungeon Master, both players actually use the same screen area/width. This, though, clearly maintaining your ability to run the best way from your position or split up

and explore other areas, knows you are in competition, making sure one player never gets out-hunted. Is this a good thing? Some would show you to about the other player, you know—if you can only run better as



your opponent get close to your "mushu"? Will he or she come up with a counter plan in time? Will it break the level first?

FRIEND OR FOE?

Competitive, isn't it? The less you know, however many of you have been through this, an environment, and more intensely at each other's throats toward the occasional student loser... (Saw, for all multi-player games are like this, though they don't all involve shouting obscenities at each other at a friend's loss while your computer character tips his hat, all at once... Can you/you/you?)

That's a fairly subtle, isn't it? — who gets the point? Take *Samurai*, one of the best multi-player games ever to hit the 4-8-bit. Do you take advantage of the fact that John's a blue fighter, off the table by flipping around him and saying your hands on the ground, or do you wait into battle and divide the spoils equally over the manhandling enemies that have been dealt with?

There have been some points for a long time now. If the programmer knew what he was doing to society when he gave the blue fighter the chance to shoot each other in the back, he'd have gone off and written *Clay*, instead.

Co-operative games are fairly like that — great interactions take gradually develop when you get the chance to bring you. Managing control of the top of the building, for example, the first minute waiting for their wing up. Sure, they'll get you back, but if the game develops into a chase, you're off having fun.

THE HUMAN TOUCH

Multi-player game attraction number two is, of course, the fact that your opponent is no longer featureless. A gladiator had guy doesn't come down to a fully grown man falling off his chair or surprise when you get in one through the door.

So, not literally, you understand, with a multi-player game, you see, you know your enemy.

It goes deeper than just having against a real, life-opponent, though — occasionally this always come through heavily in playing style. This can guarantee that if you, the player, have Steve (Steve is *Samurai*), you'd be fit in the back to more ready with than a weather man, better than you can say, "I do not know what I'll do, I'll show the better we fight up your *BOSS!*"

With different opponents come different tactics, levels of complexity, mastery of particular skills and about of different death screens. If you're kind of the best different playing styles that the best-guy algorithm can produce, why not start on the huge library of different opponent style we call the human mode?

A MATTER OF STYLE

There are many different types of multi-player games available at the moment — enough to suit the needs of even

the most picky gamer. In fact, there are very few game styles that haven't received the same treatment at some point or other. Through the hundreds of different game styles that have had a second player attached, a few spring to mind:

1 BEAT-'EM-UPS

This kind is pretty much without a two-player mode. From *International Karate*, through the original *Ku* and onwards, kicking, punching, 



generally making the had out of a mass-controlled competition is always a direct sight, most interesting than playing the computer. Even the most die-hard "winners" (*The Fighter* and *Street Fighter*) (European language going to mind) take on a strange fascination when you're playing a real person through a lot of this has to be pointing out to each other how back the games are, and talking about in laughter at being completely unable to control your players — something you never do when you're playing on your own, obviously.

This can be every type of creature fighting from boxing (*The Boxing*), through to usually more localised and even more fighting (*Street Fighter II* and even more fighting, *Proton*). As yet, we have no idea on any multi-player aggression involving unprogrammed-name calling (which, I must confess, had not been your point).

What made it, an opponent was in addition of a *three-player* — that's right, two or player and one on the keyboard — not so much a fight as a duel, yes. It's a recent but fully available game, with a standard board for *USA* but "win up" length is age.

Street Fighter 2 is the first game that springs to mind (player's minds when you mention two-player beat-'em-ups. On the *USA*, however, I wasn't that great, mainly being to some interminably only

the screen's distance away, things are bound to get more than a little messy.

Rating: 4/4

GHOST HUNTERS

(COOPMATES)

A good idea from *Colossal*, *Ghost Hunters* gives a whole new meaning to the two-player game. Instead of two identical players wandering around the haunted castle, there's only one. The other player gets a gun. And again. A gun that's approximately twice as energetic still to use more around the castle. While player one jumps around the screen like a whip, his role gets to gun down everything else, without worrying about platforms, life, speed or anything.

Funniest enough, this is one of the only games to use the kind of two-player style — it's automatically assumed that two players have to carry out the same task, when the fact is really that the idea of *Operation Hell* with a normal platform game was a novel attempt to multi-play that unfortunately no-one saw enough substance to follow up.

Rating: 3/4



IKARI WARRIORS

(SAMU)

to which you get a gun and a tube of grenades, and you run forward and kill things. Yes, that's it. The only the screen, and thousands of enemy troops seem towards you. That's it. All people that exactly everything original, is it?

But one of the better aspects of *Ikari* is the fact that right from the start you can do immense amounts of damage to the



other player — one shot will kill them outright, and one grenade will blow them into several tiny pieces if it lands anywhere nearby.

Rating: 3/4

RAMPAGE (WIT SQUAD)

It sounds like a good member, but *Rampage* is a three-player game. Each player chooses to be one of three rampaging monsters, and at those can start demolishing the city. Each monster consists of a set of skyscrapers that you can smash and demolish plus a few cars that you can drive about. When a skyscraper is hit bad, it will collapse, to the physical detriment of anybody stupid enough to be standing on it.

What makes *Rampage* so special is the sheer amount of fun you can have. If you don't feel like destroying a building, you could simply sit about watching someone else do the job on their own, being utterly unproductive, or even





controls. But in two-player mode at least it has the very definite advantage that you can choose from a whole host of characters, each with their own special moves. Extremely easy finds the character they're most competent with making best of best bouts with makes a genuinely engaging experience. WWF and WWF European Manager also has loads of options, but only the original game is really worth checking out—it's a decent enough romp with some great presentation. European Manager was, frankly, a bit dull.

3 RACINO GAMES

If you thought there were a lot of horse-imp-out titles, you've obviously haven't noticed the huge volume of racing games available, less most of which were



The thing about overhead racers like *Albino* is that you can forget the race and just try to see how successful all the jockeys are over the race.

released by Commodore at some point. They all do a few nice, exciting and relaxing games which are so simultaneously cool-sounding from a case of this *Play Me* (to use an off-vocabulary LVTV line).

Lotus Turbo Challenge is probably one of the most widely known title screen racers, though *Albino* was also around quite early on. Lotus is about the best two-player driving game of its type (it's really being to get, but if you want some nice sight overhead racers are what you need).

Overhead racers are quite heavy to have some stemming into each other, and to make for a bit more fun on the track. The most noticeable, based from the soon present *Crusher* and their *200X* line are *Blitz* (in which racing takes a second place to smashing into your opponent) and *Rally Destruction* (see



3 SPORT SIMS

Sports games like basketball, and especially football (or multi-player modes), sport, after all, is about competing. Let's face it, the best avatar smash thing was basically two-player tennis (unfortunately, when you look at things like *Tigerpat* a little tennis, you realize whether things have improved that much). Playing that *OS* I suspect the computer is fine for testing your skills, but what you really need is a two-player rival opponent. And going the opposite way, if in which you have a team hitting and a team hitting, means that if any given time each player has to get on a different set of goals. Only golf games like *GreenStreak* or *Mini-Fours* seem to fit as much for when you're trying to beat your own score as when you're playing a round with a mate—sometimes trying to beat your own personal best is always more interesting than any individual match.

The undisputed king of sport games, though, have to be the original *Days* sports sims. Though each game had some sort of sporting angle, *Summer Games*, *Winter Games*, *Summer/Play* after *Winter Games*, etc., they all managed to get the racing angle down to a very fine art. If you're more into outdoor sports (and most racers are) in a sense (see *To Be*), you're obviously more into an *OS* game. The other top of two-player titles they indulged in the rest of the time (and on sequential play) — *Ice Dance* and the obviously named *Ice Dog* can get very tense when there's someone right behind you determined to beat your score.

4 FLIGHT SIMS

Oddly enough, there haven't been too many multi-player flight sims available recently, to be fair, only one springs to mind. It was good, though. *Top Gun* was one of those games that really benefited from a two-

player system. Trying to control a plane, avoid missiles and target a missile at the same time can be difficult, and a computer opponent exacerbates the situation by reacting to instructions perfectly every time. Flying against a second player gives you an incredible feeling, especially when you manage to loop the plane and end up behind them—the computer pilot would have been on your tail the whole time, and you'd have still existed as its front, the only difference being the missile that's going to reach you whether you braked your teeth that morning. From the wrong end.

5 PLATFORM GAMES

What's not to you think of any? There's a job ready to be done, the platform game is probably not out of having two players—what was it that being problem-given time be solved with strategy, as two people approach a flat top, catch a bit. This is a switch or even you could move forward. Two-player platformers, you see, usually involve co-operation as opposed to antagonism.

If you're looking for some top two player platform titles, look no further than *Sumo* (Sumo only)



In *Sumo*, one player uses their few weapons while the other one destroys them, combining all the qualities, in at least that's the idea.

Planet (Planet) both games follow very much the same theme, involving two-side title character jumping around killing things. Of course, there is a heavy competitive element involved in both games, but the whole idea of working a constant platform level with two people is mind-boggling—the platform version of an incredibly intelligent strategy.

strategically testing if a building when someone else just happens to be standing on top of it.

Rating: ★★★★★

STREET FIGHTER 2 (300 GOLD)

Holds up all these and is never played (*Street Fighter 2*). In the look of the character marks, there aren't that many who haven't looked out and fought it. Best looks have been around for years though, and *3D* was by



Oh, play by the Secondary Rules.

no means the first. Neither was *3D*, by the way. Even if it was unimpaired, though. *3D* was still better as one of the best best-selling titles (the industry has never produced it) since its early commercial on the *MSX*, but it's still a bit better looking than the *MSX* has to offer.

Rating: ★★★★★

TETRIS (200)

The game has survived a doubling (and triple) folds. Everybody and their dog knows what Tetris is all about. Simultaneous but player Tetris is different, though—when you complete two lines, your opponent gets a piece added to the bottom of the pile. If you manage to get a Tetris—four lines completed at once—your opponent gets four lines added to their screen. The two players, from left the screen mark, which increases the tension, knowing you can see what your opponent is just about to do (two lines on your pile, and you have to try to put a square in his stack).

Whether the commercially released Tetris (two simultaneous field a two player option was not sure, but

two player versions of Tetris are definitely available in the public domain. Lots of 'em).

Rating: ★★★★★

LOTUS ESPRIT TURBO CHALLENGE (200R)

When Lotus appeared on the *MSX*, it was not only a revelation in that it was actually a pretty good looking



GETTING BOARD?

Board games—either over chat, or full-on play. Most of us prefer sleep—really—over yet another high-quality computer software, moving counters around a pile of cardboard board I spun out in reality.

This isn't always developers, though—you could fill your software collection with games like *Three Friends*, *Monopoly*, *Stratego*, or *Clue*. If it were that easy, we'd see the other members of the genre named completely gratis here.

Can you play *Three Friends* on your own? No, you can't. What you need is a multi-player board game that has been translated into computer speak, giving you the option to play against other computer opponents. Luckily, almost all of these games have their structure either translated to computer speak

into games with huge amounts of alien blasting going on. A second player can help you out by watching if advice you can't get, maybe saving your bacon. The two-player board you're up is probably the best example of an expansion you can find—it's all very well discussing some long, 10-turn, full-on-coordination technique, but doing it to help at a moment's notice really adds a perkiness to the thing.

Surprisingly enough, though, everyone seems to be able to get stuck in the system, so we've set the face of game (S&TC) multi-player with its two-player edition. There's nothing, though, an *Iron Dawn Space Invaders* which was, after all, just a reworked version of the original. Identified greatly from the two-player situation, as both players were too on for some screen, adapting the bubble together.

8 ADVENTURES

It doesn't take a genius, or even someone with Darius II, to realize that text adventures aren't exactly suited to two-player action. (How you want the nature of graphical adventure games, though, it's a whole different story—see *Step Beyond*, *Iron Dawn* (both a mostly linear, genre-specific) comes. Download a fairly easy enough through hundreds of levels, looking for



probably in the two-player action supports.

On the slightly more serious side of the coin, there have been several RPG style games released quite a while back. *HeroQuest* being probably the most famous. There again it's a sequential title game, never allowing both characters on the same screen together (unless you watch *Superman*), but it's about the closest you can come to multi-player RPGs without killing the screen in two and causing a headache, considering how many detailed calculations take place. (It should be good your machine can do that, too.)

What's so great about multi-player adventure games is that they're exactly that—adventures. You can happily hang off in lands unknown on your last if you want, but exploring new worlds is so much better if there's more than one of you—two people independently exploring an area cuts down the amount of time you have to spend wandering around, and gives you much-needed back-up if things go wrong in a fight, or whatever.

THE DOWNSIDE

There is, of course, a downside to multi-player games. You see, since you've been introduced and tested with a couple of these options in the most gaming fashion, normal games won't ever seem the same again... 

6 PUZZLE GAMES

Oh heavy day. Just when you think you're doing quite well in the gaming ranks, someone throws you another game of its. They're all been there—*Santa*, had a second player, so do they or some version. Even completely futuristic games like *Matrix* get the social treatment, meaning you can bring both together with a friend if the mood takes you.

Puzzles benefit greatly from the addition of another player, you see—either game involves co-operation, a second person is just what you need at times, and the games that involve competitive puzzle solving give you more than just a boost to beat—it's hard to describe the sheer joy of eliminating four same lines into someone else's. There's really, just a great feeling to go to it before the fact.

There are some puzzle games that only on your little two-player action. Just knowing you have two people playing the game is great. (Such a game is *Phobos*, in which rotating the other player's disk will also affect your own game—the fact that they happen to be using the same computer is purely coincidental.)

7 SHOOT-'EM-UPS

There's almost no early two-player shoot-'em-ups, you know. Okay, so the old games had features for additional extra players, but gun fans had to wait for releases such as *1342* and *Steel Dawn* to really make a big on the home computer scene.

The beauty of the two-player shoot-'em-up is that as a solo player you'll almost definitely get hooked

EXCUSES FOR WASTING A FRIEND

- Everybody's down to—no, decide to play an opportunity for to someone else in, you realize that of the games seem to be going into one pocket, and if it isn't yours, if you do feel the steady shooting someone in the legs, there are a few reasons you can use:
- "I don't realize my skills could be that good."
 - "Being wrong was." A word of warning, though,

the only works out, and only holds water if you're using *Jeopardy*. Otherwise, you're going to look like you've got all the co-ordination of an armoire maker.

- "I thought you were someone else, so I emptied those pounds of steel into your face followed by a repeat bullet, expecting 'de you finally be'ing' as you fell to the ground."

So what racing game (2D) CD had been pretty decent in them previously, but it also featured a superb split-screen two-player mode. The competitiveness into the screen helped with coordinating with one another. This was obviously one of the biggest selling titles of the biggest-selling CD games ever.

Rating: **★★★★**



presentation and the addictive gameplay.

Rating: **★★★★**

WINTER GAMES (SPYX)

It might be unfair, but *Winter Games* is special. It's a compilation of about ten different sports linked together, letting you actually compete in all events and take your score to the end.

The two-player option will let you experience the most intense side to human nature—two opponents

This entire game is based on beating the second player and beating it. There's no third computer character, no co-operative events, just a series of opportunities to grab points.

Of course, *Winter Games* is also a great because of the incredibly accuracy of the simulation, the beautiful

BUBBLE BOBBLE (JAM SQUARE)

This is a game that can be multi-player game that played well to this extent—it shows both of being completely. The game was quite simply a maze with through several full-screen levels, with two dragons can hit 1000 obstacles in the number they have, and collecting awards.

What made *Bubble Bobble* so amazing, though, was its level design, which allowed really creative co-operation of two players. There were possible ways that needed the second player to blow the ball down to someone on their own screen full of water that need to be blown to reach the other player out of a high spot, or generally save people's lives.

Rating: **★★★★**





Fill up on the previews from this month's retros looks to be quite a really little number from Electric Boys, the new and coming CBI company headed by Russ Michaels. In our review on page 26, he takes you only about Flashback and Jet Jet, but about one of the first computer games the Locust are going to release—Defensive.

Defensive, it would seem, is one of the first games to take the classic Defender and add some new twists to the gameplay as opposed to merely updating the graphics and sound—the basic idea of Defender is there, but there are also quite a few surprises in store.

As with Defender this is a horizontally-scrolling shoot-'em-up, with you in your ship, on a mission to thwart the activities of a hostile alien race. And

DEFENSIVE

PREVIEWS

"I don't understand it... they told me the car crash was over for good. We've checked this apartment every block now, and still nothing!"



so, as the aliens swoop down to grab people from the various streets, your job is to destroy their ships before they escape the earth and make off with their specimen.

From the looks of the preview version, we should be seeing a finished version in three pages very soon, and it looks to be a definite improvement on the original.

Defensive—It's no fun having a crap ship, but the controls and ship mechanics you'll find in your mission to rescue the poor innocent citizens will almost definitely help your progress, and give you the kind of craft that'll turn heads back at the Greasy Spoon.

Defensive—Each level ends with a battle against an army of level guardians. As this is only a preview version, we only have one guardian to show you, but I think I'll look busy—those guardians that a professional ship.

Defensive—The graphics in general have had to go through a fairly major face lift for inclusion in Defensive. In fact, they look very little like the original graphics either, considering the limited visual appeal of Defensive, it probably is good thing. Let's just hope the gameplay is as lovely as before as it used to be.

So that's Defensive, then. Sticking for a full review as soon as possible, but in the meantime you might like to think about sharpening those reflexes. They'll need it.

VITAL STATISTIC

Game	Defensive
Produced by	The Electric Boys
Release Date	July
Contact Address	1110 Brighton Road, Purley, Surrey, CR8 3BT
Other Information	Free only
Price	TBA

"Surely this for a game! It's such a lot better!"



GERM ALERT

PREVIEWS

Well, it's a lot of odd games here at CP, but this one's a smooch through the odd boundary and is currently charting an uncertain region.

What you normally get with the odd is a game that's a little off, a little weird, a little strange, a little funny, a little... well, it's in the name. You take control of the odd, which is a kind of a weird, a little strange and takes control only when the weird thing that somehow manages to escape the house by doing them to death.

That means it's a platform game, even. From what we've already seen of GERM ALERT, it's



accident has happened, which you normally have to spend a good few days mending, so problems partly overcome by a slightly different sort of the simple for you. Okay, so that's not exactly true, but the design of GERM ALERT also has a lot of things that's moving around isn't something you have to think too hard about.

The game is going to be a simple, first-screen affair, with each map-around level being a separate level in its own right. Within each screen, though, there are lots of passages and fairly little pipes that'll either stop you from the bottom of the screen than wrap you back up onto

the top again, or let you run off to the left and reappear on the right again (platform style). Yes, it's one of those.

Before we go any further, I should tell you about The Odd. As you probably know, there is a specially odd... well, it's a game that's a little off, a little weird, a little strange, a little funny, a little... well, it's in the name. They game at the following mark, '78—Exposable quality, which means you're playing GERM ALERT or more like a game that means it's a little off, a little weird, a little strange, a little funny, a little... well, it's in the name.

When GERM ALERT first arrives, it'll almost certainly be a lot of a lot of fun, and one for the collection.

VITAL STATISTIC

Game	Germ Alert
Produced by	Prostate
Release Date	August
Contact Address	11 De Grey Road, St Leonards, NSW 2232
Other Information	Free only
Price	TBA



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Jon Wells' ambition is to write the definitive C64 beat-'em-up. Last month he told us about how he gathered together a team that was up to the task. Now the coding begins...



Hey, I admit it... not so much get down as we had hoped to do here, but the programming has begun. Phil Morrison will be busy finishing off the new game called *Overrun* (reviewed page 27) -- deep in the trenches I'm assuming you've got the FAST code to work those four levels in the problems. Though, as it goes a rapid advance with the 8001 I screen control, I'm sure the results will be a real surprise and change the existing pattern of what the machine and I can do on the standard level. Oh to match... wow!

Well, I'm determined to get it going successfully, and I'm taking away all the knowledge I've got from the other side. Some of the other side's progress has been slow. For Steve, I've covered things and gotten feedback that I can't fit in on using a light, but only in the case of control, but I expect more details and help as I continue to play around with.

SUCCESS

Yeah, yeah, in fact, I've done it. Don't get it

but I'm sure you're there, but I'm very happy in the moment. Yes, you've got it. I've got that code working -- it doesn't look any more, and it can't be 10 to 10 in 1000 seconds... an inch in fact from go up to 1000 or 10000000 of a second, which is fast. The code is a lot of screen and full-screen, and only one or two. I've got some time on screen at all times, which is very impressive for the good old C64.

I've now got the window working along with the other things, and it works and looks well. I think you should do it right for these weeks to get it going. This week I'll be getting a map and then later on, so it may get a mention next month.

TAKING SHAPE

The real work in February is coming to a close, so I decided to compile a full list of designs for the game. I also drew a few pictures for graphical ideas in reference for the future. So with no further ado, here's the complete design structure in detail.

- 1 The complete game will feature full-screen-right scrolling. This is contrasting the computer version of the players, so that they will remain in the centre of the play area.
- 2 There will be three different scenery levels. These are two covered in large, various parts of the background that will

remain with it will be under character mode. The scenery will be under the player mode. The scenery will be under the player mode. The scenery will be under the player mode. The scenery will be under the player mode.

- 3 There will be three bonus stages between each scenery level. Each scenery will correspond with the other scenery stage in various scenery levels the background will have parts of the background, making the player to move

around the graphics, etc. These will be under the player mode. The scenery will be under the player mode. The scenery will be under the player mode.

GAME FEATURES

- 1 The game will be a beat-'em-up. Each scenery will be under the player mode. The scenery will be under the player mode. The scenery will be under the player mode.
- 2 The game will be a beat-'em-up. Each scenery will be under the player mode. The scenery will be under the player mode. The scenery will be under the player mode.
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- 5 The game will be a beat-'em-up. Each scenery will be under the player mode. The scenery will be under the player mode. The scenery will be under the player mode.
- 6 The game will be a beat-'em-up. Each scenery will be under the player mode. The scenery will be under the player mode. The scenery will be under the player mode.
- 7 The game will be a beat-'em-up. Each scenery will be under the player mode. The scenery will be under the player mode. The scenery will be under the player mode.
- 8 The game will be a beat-'em-up. Each scenery will be under the player mode. The scenery will be under the player mode. The scenery will be under the player mode.
- 9 The game will be a beat-'em-up. Each scenery will be under the player mode. The scenery will be under the player mode. The scenery will be under the player mode.
- 10 The game will be a beat-'em-up. Each scenery will be under the player mode. The scenery will be under the player mode. The scenery will be under the player mode.

DIARY OF A GAME MONTH TWO

BONUS STAGES

There are some early ideas for bonus stages, more will be added as we have the time to do so.

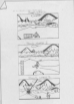
Bonus stage 1 - the stone slabs: You must pass through the stone slabs. The more you destroy the higher your bonus score. To do this you must destroy the stone slabs by using the player's attack as a steady pace to build up power. After a short time the player will automatically swing for the bit of the stone.

Bonus stage 2 - the wall: You have to smash your way through a wall. To do this you must use the player's attack to hit the wall. To hit the wall you must use the player's attack to hit the wall. To hit the wall you must use the player's attack to hit the wall. To hit the wall you must use the player's attack to hit the wall.

Bonus stage 3 - the jumping platform: You must pass the jumping platform in the right amount of time to hit the jumping platform. When you pass it you will automatically swing for the bit of the stone. To do this you must use the player's attack to hit the wall. To hit the wall you must use the player's attack to hit the wall. To hit the wall you must use the player's attack to hit the wall.

3RD DAN

Now the coding part is complete, it's time to start on the real things, coding, and making it work. It's time to start on the real things, coding, and making it work. It's time to start on the real things, coding, and making it work. It's time to start on the real things, coding, and making it work.



Here's original conceptual drawings for the basic levels of the game.

CREDITS

Let's not forget the team... or... credits! These names will be featured in the new game! Phil Morrison (designer for the Machine and the screen control), Jon Wells (writer's story and the scenery) (The Prototype) -- was in the SPACETIME year. And don't you forget it.



DEADLINE

PREVIEWS

Simon takes a look at what could be a slightly twisted contender to *The Electric Boys' Defensive*.

The year is 2054. You get on board an observation ship which is on a mission to explore a planet and its three moons. Teams of scientists are sent down to the surface of the planet, in groups of 10 to 15 men. Everything is happy. (Happy, you will note if the team have contact with the moon(s).) With absolutely no time to draw up any kind of emergency plan, the team decide to work at a basin deep down in the surface to pick up the scientists, who're getting just back a bunch of atoms that don't just mean their spine straighten.

It was at this point that the other teams completely lost contact with the moon(s) at work. Big problems.

It took us some time to read the plot from here... you're placed in control of the tower (basin), a little hovering A&B with a mounted laser cannon. It's your job to fly through the horizontally scrolling landscape, hover near the scientists, and beam them up or down.

Reaction will be the first game released by Innovative, yet another new independent software company on the C&A scene. The first thing you'll notice about the game is the quality of what you're watching... the background alone is enough to kill a man.

evoking those different genres (encompassed in wonderfully shaded screenshots), several lots of interesting earth and landscape in the foreground, and some very smooth scrolling.

So you're flying over the landscape beaming everything you possibly can, shooting everything else, and respecting scientists in distress. The support system involves simply hovering over the buffer which floats in the water, targeting him, and bringing the entire shot down on his head. It sounds great, but since you're beamed from up you can reduce them to five components aimed and bring them in a deliberate through space with just a flick of the wrist.

Then there are the aliens. From what we've seen so far, they're the part of the game that isn't fun, but we're sure the odd killer ball

can take space floating lazily around the place, so we can imagine, can't we?

So this is a game that is definitely going to be overly impressive when it comes... it's better a lot of its style from the old *Defensive*-type games, but given a decent lead in the concept... you're the one who's working up people

from the surface, while the aliens try to stop you. The gun is obviously very important though, you wouldn't want a mission ending the best of us except the *Defensive* alien had. The time, you've got a 1000 ready gun, and nothing can stop you if you haven't played.

Deadline (which isn't available) has a game you SHOULD try quite amazing, and if you have played it, this is the version with all the stuff you without was then originally killed was, but don't think *Deadline* will fail - it's just darned good fun.

VITAL STATISTICS

Game	<i>Deadline</i>
Price	£19.95
Available	August
Format	Tape or Disk
Contact	1 De Gray Place, Claydon, Kings Lynn, Norfolk, PE28 6RN
Price	MSA

TRACER

Strange marketing ploy when you buy *Deadline* you will get the game's manual too with it. It's true, *Deadline* is good, but *Tracer*, has previously won another game starting his favourite *Tracer* drink, called, would you believe, *Tracer*. But the story is about the only thing the two games have in common.

I don't mean about it - what we have here is a shoot 'em up. More or less, you're at the bottom of the screen, you fire, aliens die a laser cannon death, and you fly off again.

What makes this shoot-'em-up an special is the difficulty level. If you manage to survive the first level without losing a life, you can only be an alien-killer for one very good reason: this game looks to be really incredibly difficult.

There are

two types of

different games -

the type you

just play it on

at home,

and the kind

that make you

feel depressed

at your lack of

space to

work and

some cunning

plan when

works, at which point you're higher than a mile and getting into a laser in a laser shop. *Tracer* definitely looks to be one of the better variety - the aliens show in a mathematical way that manages to sweep around the entire screen, except for a few areas. As you begin to lose them every one by one, different game appear. Getting into space from which you can get to the rest of them.

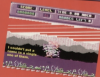
75% An old game style but a more approach to gaming. It's fast, satisfying, and incredibly good fun and extremely tricky.



Every team has a chance to play.



You scientists really can't give danger, you know.



MEAN machine CODE

Programming in Basic is more restrictive than living on a student grant, but the prospect of learning machine language - with all those meaningless numbers and weird symbols - can seem daunting. But never fear, Jason Finch is here with a beginners' guide that's about as daunting as the Pepsi challenge.

PART ONE

WHAT IS... MACHINE LANGUAGE?

It seems like the best solution to a problem is to get your hands-to-and-do-it approach that your computer understands without having to convert them into anything else. It is also a whole lot easier to explain, so far as programming is concerned. Oh yes, forget about variables. The idea of arrays and using every known letter of the alphabet have gone. Strings don't exist any more either. Say goodbye to your letters and your line numbers. The real programming is about to begin.

Other complicated issues that are of little relevance to the get-your-hands-to-and-do-it approach that you're going to take. The deal is that I believe and give examples, and you listen and let me tell you examples I give. Fair enough, yes?

YOUR FIRST TIME

The first time you do anything is always the worst time because you have to learn a load of things before you can even begin to do anything constructive, but hang in there. It might seem a bit of an uphill struggle now, but persistence - the quality of getting your name on the screen in Machine Language comes a close second in getting a really good price for, yes, okay, I'll have to take your word on that one. - Dave

In later months you'll be able to refer back to the "What is...?T sections and really let them

WHAT IS... HEXADECIMAL?

It's even more complicated than binary, basically. Hexadecimal is a number system that uses the numbers 0 to 9 and the letters A to F. Don't fret, indeed, letters are involved as well. The following table gives a conversion of normal (decimal) and hex numbers. Don't use a dollar (\$) sign to show a hex number (it's the standard way).

Dec (hex)	Hex (hex)	Dec (hex)	Dec (hex)
0 (\$0)	4 (\$4)	8 (\$8)	12 (\$C)
1 (\$1)	5 (\$5)	9 (\$9)	13 (\$D)
2 (\$2)	6 (\$6)	10 (\$A)	14 (\$E)
3 (\$3)	7 (\$7)	11 (\$B)	15 (\$F)

You see, although hexadecimal has got more symbols than there are items in most sets (well, the kind of words you get in the fun, anyway), it's not all that complicated. Decimal 16 is hex \$10, and you start on counting from zero. You can use hexadecimal without actually understanding how numbers are converted between it and decimal, assuming you have either a calculator with that function, a language with it or a tiny little program like the ASCII file one that I listed in *Teaser Tips* a short while back. Hex is used mainly because it is convenient, single byte numbers are represented by two 'hex' digits and double byte numbers are represented by four.

To be two words 'machine' and 'language', when used incorrectly, can make even the sense of people given at the knees, and can send raw hints specimens crying for their mothers. I can even hear some of you screaming and furiously trying to turn the page already, but don't, it will be worth the pain, the frustration, and the mental torment in the end - mastering machine code opens up limitless possibilities as far as programming goes.

For months you have seen Basic loaders in *Teaser Tips*, short programs that do BASIC statements which load some machine code into memory and

then do something rather

WHAT IS... A MEMORY LOCATION?

Although I have covered memory locations in *Dr Finch's Cookbook*, I'm going to repeat them because the concept of memory locations is fundamental to learning machine language.

Numbers are stored in memory locations; those numbers are called bytes. The different memory locations have different functions and depending on the numbers stored in them, do different things. Ensure you understand memory locations before you continue with this series. Memory locations are also used in ML to store values (because you do not have variables).



stunning. By the time this series has finished you will know exactly why they all exist and you will know how to change them to do what you want. And now, using either the spreadsheet on this month's coverpage or the Action Replay device, you'll get the chance throughout the series to mess about with real machine language, or ML, as it's known in the trade. For the moment I'll be referring to the AP card when I'm dealing with how to run the machine language listings, as it's slightly more straightforward to see what's going on, but from next month, I'll be giving the series listings using \$0 files. But feel free to experiment on the meantime.

THE APPROACH

It would help if you weren't just set there like a lemon reading this with the idea why. So I'll tell you the aim of all this and how the going to approach it. The aim is to get you programming in ML from day one that's simple. I'll do it by

telling you about the commands and the different ways of using the commands. I'll tell you about the concepts involved and about different memory locations. I won't assume you know anything about the type of programming at all.

I won't assume you've ever programmed a computer at all before, although it will make reference to Basic. I won't bore you with pointless details about hardware, about the CPU and about



WHAT IS... A MACHINE LANGUAGE PROGRAM?

A machine language program is a list of instructions that is stored in memory from a particular memory location onwards. For example, you might start a BASIC program at address 40150. This is a convenient memory location on the C64 and a \$C000 in hex

you're looking for. The main fun will begin towards the end of this first part and by which time you'll have written your very first machine language program. It would help if you had an Action Replay cartridge — and I'm assuming you have one —

justify for its machine language monitor, though. Most utility cartridges have monitors, so be prepared to be flexible if you don't actually own an AR cartridge. It won't be making reference to things out of Dr Frost's Casework which I hope

you have been following if not, well there are book issues available, see page 28 — Ed.

THE FUN BEGINS

Okay, pretty long on in your seats because the fun is about to begin. You've read all the 'What is...?' bits, you've read all the relevant Dr Frost's Casework stuff, now you're ready to begin.

OK, a load is in LD and a store is in ST. You follow this with the register

name that you want to load from or store to. So LDA, LDX, LDY and STA, STX, STY are all valid 8-bit instructions. Loads need something to load and stores need somewhere to store things. Imagine you want to load the number 3 into the accumulator (the A register). In BASIC you'd do A=3 (decimal 3 is hex \$03, but because we want the NUMBER 3 and not MEMORY LOCATION 3, we put a hash-sign before it: #300). This is the operand (see the 'What is...?' bit on operands and operands with the brilliant accompanying picture).

The instruction to load something into the accumulator is LDA (Load) into the A register. So LDA #300 is the first instruction. Now, we've actually got a machine language instruction here! What about storing? Well STX seems reasonable (STore the A register) but you need to specify somewhere to store it.

You give the instruction a memory address as the operand.

WHAT IS... AN OPERATOR AND AN OPERAND?

An operator is a thing that operates. It carries out some particular job. An operand is the thing that is operated on.

When you get a jar of coffee at a stall, you are the operator. The coffee is the operand. Referring to things in computer-speak, the act of getting the coffee is the 'loading' and is split into knowing what you want — the coffee (the operand) — and you thinking about making for it (the operator).

\$C100 is \$C000 in hex, and controls the border colour. So STX #0010 could work, right?

The first thing we need to do is stop the program (it does hang). In BASIC this is done automatically, or with an END statement. In ML you use an instruction called RTS. (It's from the Subroutine) to get you out of a program.

HANDS-ON TIME

You want to write a machine language program consisting of the following three commands (yes you do, you know you do, go on admit it):
LDA #300
STX \$C000
RTS

In order to do this, you must 'assemble' the program, and instruction of a file. The computer needs to know where you want to put the program in memory, and the most common place for beginners is \$E150, or \$C000 in hex. The Action Replay monitor must be set the start address to

See what? gag alert! See what? gag alert!

WHAT IS... A REGISTER?

Good question, that one. A register is a place where things are stored, or registered. In machine language you have three registers, called the accumulator, the X-index and the Y-index. A, X and Y for short. Each register can store a one byte number, that is a number from 0 to 255.

assembling an instruction. It will then prompt you for the next instruction until you press Return without giving an instruction.

ASSEMBLING

Get your monitor up and running and enter A \$C000 LDA #300 and then Return. If you've done it right, you should see this on your screen:

```
> A 0000
> A 0000 00 00 00A 0000
```

Now, when the cursor is flashing, enter STA \$C000 and press the Return key, now enter RTS and press the Return key twice. You should have this on your screen now:

```
> A 0000 00 00 00A 0000
> A 0000 00 00 00A 0000
> A 0000 00 00A
> 0000
```

You have now assembled a three-line machine language program. It has one load instruction, one store instruction, and one return. The numbers down the left are memory locations and the values immediately to their right are the values stored at those locations. So, 00A (10 in decimal) is stored at \$C000 (40150 in decimal), 000 is stored at the next location, 000 at the next, then 000, 000 and finally 000 is stored at \$C005.

These all mean something (and I thought they were just there to confuse me — Dave). 00A is the code for our particular LDA instruction, 000 is the operand, of course, \$C000 is the code for our STA instruction, and 000.



WHAT IS... BINARY?

If you haven't been following Dr Frost's Casework then you have committed the greatest of sins, you haven't learned about binary. Binary is a number system that uses only 0s and 1s. The following table gives a comparison of normal (decimal) and binary numbers. We'll use a personal PSU sign to show a binary number.

Dec	Bin	Dec	Bin
0	00000	1	00001
2	00010	5	00101
4	00100	6	00110
6	00110	7	00111
8	10000	9	10001
10	10100	11	10101
12	11000	13	11001
14	11100	15	11101



800 is the two-byte address. You should remember this location from the "What is a byte?" question. The 800 is the code for RFB. You do not really remember those 0000s. They are the hex machine code - the letters are the values that give PORG its memory when you use a Hex editor to store code.

RUNNING

To run that machine language program you use the G command, for "Go". So enter G 0000 and be impressed! Okay, so the monitor has turned black. You're not particularly excited, I can tell. Perhaps we can turn the background black so well to make you a bit more happy. Press the cursor flashing after a dot, enter a 0004, then 0000 and press the Return key. Now enter 0004, 0003, press Return again, enter RT and press Return too. You should see:

```

.> 0004 00 00 000 0000
.> 0007 00 01 00 000 0004
.> 0004 00 000
.> 0000
    
```

Enter G 0000 again and the whole screen should go black. Why does that happen? (You've tapped

over the power lead?) - Darny! Well, you take the number 0 and you

WHAT IS... A MACHINE LANGUAGE MONITOR?

A machine language monitor, or MLM, is a program that allows you to enter and view machine language programs. They often do other things as well, but they are essentially. The Action Replay cartridge has a MLM built into it which can be accessed from Basic by either pressing F5, entering MEM and pressing the Return key or select M04 from the option screen that comes up when you press the speaker button on the back. You should see something like this come up on your screen:

```

0000 00 00 00 00 01 00 00 00
0007 00 00 00 00 00 00 00 00
    
```

The cursor will be flashing and to the left if you have entered the realm of M.L. If you can't see your screen, I suggest you read the MLM section of your manual to work out exactly how to use it. For M1 entry, enter a dot and press Return to get back to Basic.

put it into the accumulator. You then take the number in the accumulator and store it at memory location 0000. That changes the border colour the same way as 0004 (0000) would do in Basic. The same occurs with the second row and store; you take the number 0 again and put it into the accumulator. You then store that at location 0001, changing the background colour. Check out the colour codes in the table below and change the 000 to a hex number.

000 black	001 orange
002 white	003 brown
004 red	005 pink
006 cyan	007 light grey

004 purple	00C medium grey
008 green	00D light green
00B blue	00E light blue
007 yellow	00F light grey

DISASSEMBLING

As action discovered, every action has its opposite and equal reaction, and the opposite of assembling/disassembling, you probably won't be too surprised to hear. Assuming that you've been diligently following all the instructions I've been giving you so far (well I like to think there is some purpose in my life) within your M1 monitor enter G 0000 0000 and you should see:

```

.> 0000 0000
.> 0000 00 00 000 0000
.> 0000 00 01 00 000 0000
    
```

This should not come as a great shock to you because that is what you originally entered. In fact, you're been following my instructions, otherwise god knows what you might get - some rude error message most likely. This is part of your machine language program.

You can go up and edit any of the lines, it's exactly the same way you would with a Basic program. For example, move the cursor over the second G000

You may well be asking yourself that why some numbers - if you need to know machine code quickly and easily, you'll need an assembler. This is a program that does the necessary program code for you, then converts that into the machine code that the CPU recognises as instructions, and sets up the program code, and sets up the program code.

If you enter an assembler, you're going to load your code from this month's magazine and then to this cartridge pack for the instructions. And you can load more of the things and directions in Basic machine Code will be written with you, in mind. We've got you good to you, assembler.

Return. Press Return twice more to get back to the dot prompt. Now type in a 0000 again and you'll see the effect. Ah, the wonders of machine science. Okay, it's not exactly ground-breaking stuff, and your Gloria is the only person who'll say she's impressed (and not even she means it), but come on, what do you expect after one introductory lesson - "What is an Assembler?" You've got to walk before you can run. From this month onwards, see how. One small step for... (yes, thank you, Jason, we

you need to read David

WHAT IS... A BYTE?

Apart from being the cause of many a hilarious joke in daily life whenever in conjunction with the many俗名 named computers (there isn't even them), what is a byte? Your computer has 65,536 different memory locations, most of them as boxes into which you can place bytes of data. 65,536 is a memory location that just happens to contain the border colour. PORG 00000 is set to 0. One byte can be stored at each location. A byte, on the CPU, is a number between 0 and 255 inclusive. 255 in decimal is 011111111 and in hex it is FF.

A two-byte number is one which takes up two bytes in memory (addressed numbers from 200 up to 65,535 need ten bytes - a ten byte and a high byte. To get the first number you take the high byte, multiply it by 256 and add the low byte. So, for example, 52,286 is stored with high byte 200 and low byte 26 because $200 \times 256 + 26 = 52,286$. In your CPU they are stored the other way around, so to be confusing, the number 52,286 would be stored as 26,286 in memory. In hex, these are 00 and 00E. And 52,286 in decimal is 00C026 in hex.

Check out the similarity with the high byte and the low byte combinations. They're pretty easy to do, it's a bit easier to see that the high byte of 00C026 is 00C0 then it is to work in decimal and say the high byte of 52,286 is 200.

WHAT IS... LOADING AND STORING?

Imagine you are in a supermarket and one of the things you want is a loaf of bread. You pick up the bread and you put it in your trolley (change, I can see an extended memory coming on-line - David). This is loading and storing. Loading is the action of getting the bread, and storing is the action of putting it in the trolley. The same happens in Basic when you do PORG 00000. The computer "loads" something or other with the number 0 and then "stores" it at location 00,000 - a simple analogy for the simple of operations.



Before next month I want you to make sure you have read your MLM manual, or the relevant section of your Action Replay booklet. It explains about assembling modes, give some details on loading and storing, show you how to use the other registers. Now to finally get on the screen and look to use the complete instructions. You'll get more chance to get your hands dirty, as it were, because the background information has been covered here.

SHOCK TREATMENT

We've seen the future of the C64, and it's called *The Electric Boys*. Er, well, we've seen previews of a couple of their games and they looked pretty darned horny. But as Simon found out when he talked to head Boy Russ Michaels, set-ups like the *Electric Boys'* could be exactly the kind of future the C64 needs.

Suddenly, there seems to be a lot happening on the C64 scene. Who knew that the major software houses aren't producing C64 games any more? Let's face it—a lot of the stuff they've released in the last two years has been pretty duds. What the C64 scene needs now, and, it seems, it's getting, are games written for people who really want to write for the C64, not programmers who are just juggling into porting average games across from other formats.



Defenders, from the forthcoming *Electric Boys* series.

There are a number of new and interesting software houses capitalizing on the scene, throwing shrapnel around in the form of hot, high quality and carefully produced software—software that has been specifically written for the C64. One of these companies is *Electric Boys*. Currently they've got three game projects in the pipeline:

Defenders (premiered on page 25), a *Flashback*-inspired shoot-'em-up and a *Captain America* game. We spoke to founder

Russ Michaels about the manner he's hoping to create.

How did the *Electric Boys* PD group originally start? Originally I used to be in a PD group myself, actually called *Electric Boys*, writing

games and utilities. I've actually written a lot of the stuff that's still going around today. I then left the scene for a couple of years but when I thought a new C64 I decided to go back into it again, setting software and writing a library, to do something a bit more constructive than just writing games, such as setting budget software.

What budget titles did you originally sell?

When I got back into the scene and got my second machine, I got quite a lot of software with it, and it seemed like a good idea

to set up a software library—there were a hell of a lot of people looking for old games that weren't available, writing me magazines and complaining that the company who originally sold the game doesn't sell any more. In the end, all they could do was send a small ad into a magazine and hope something turned up.

What I decided to do was collect software from shops that had stopped selling C64 software (such as *Shocks*, computer fairs, car boot sales and pretty



Have you ever seen these games with the machine color labels?

much anywhere else, and sold them off again myself. I'm still selling budget games for £100 on top, and anyone can get a catalogue by sending off to the *Electric Boys* address.

So what about these new projects you're working on?

Right out of the reason that people were making for the games they were producing, such as *Street Fighter* if suffering because of the machine's limitations—it's a total rip-off, as *Street Fighter* I could have been doing a lot better than it actually was. Even *Baywatch* seemed over-hyped—it's just the new standard for the C64. That type of programming quality has been around in games for ages now, and I just needed to do it well properly in a game.

We can do field and midlevel graphics now, which is up to Amiga standard, even PU graphics giving 60 colours per frame. *Flashback* will work because it'll use three techniques. We just thought it was about time someone turned out these decent quality games, and decided we were the people to do it.

Aren't you worried about any licensing problems with *Flashback*?

If we do have any problems with the companies concerned over a C64 version, all we'll do is vary the game slightly, making sure it's not too much like the original. We'll get in touch with the company that originally wrote *Flashback*, and see what they think. If they don't like it, we'll definitely vary the layout. But it's the gameplay, the idea of the game and the quality of the graphics that make it what it is—something of the same standard would still be good, even if it's not out there.

We're also planning to do a *Captain America* game—the whole superhero idea seems to have caught on quite well. Our *Captain America* won't be a copy of the Amiga version, because I didn't think it was especially good. We'll still use the same characters, but we'll be producing a completely different game.

Do you have any kind of release dates yet?

Not really. At the moment, we're still finishing off *Defenders*, an up-to-date release of *Defenders*. The original was just a fairly early-selling shoot-'em-



Russ Michaels, founder of *Electric Boys*.



Russ Michaels, founder of *Electric Boys*.



The *Flashback* series.

up for we've added a lot, but... so different planets that have to be tested in a better sequence, different testing periods, and even the aftermath of nuclear disasters. It's another use of those concepts that the machine's advancements can make a lot of

reference to, for all practical a (later) game. There's never been a number of Defenders, though, as everyone copies the original without adding to it. We plan to make it a few steps further.

We plan to do the same kind of thing with the old Spectrum title *Jet Pac*, creating *Super Jet Pac*. We haven't quite decided whether it's going to have five screens, scrolling, or one-screen levels, but we'll definitely be bringing that out of some point.

Will all the stuff you've got planned work well on tape? Surely a game like *Flashback* would be almost impossible to fit comfortably onto any sized tape?

We're not planning to release anything of tape - it's a pity why we've formed a plan to get all of the people using tapes at the minute into their drives. The main problem with software is that everyone in Britain is a tape user, and there are some games that just won't work unless they're on disc. Most programmers can't be bothered to convert their work to tape anyway, because it means they can't put as much into their games. We never built a tape user myself (I've always used discs), so I don't know a lot about tape

leaders - we'd have to see someone else to do all that tape stuff, so it's just not worth all that time and effort.

With games like *Flashback* to open Defenders where you've got a random level selection element, you can't use a tape - the levels would have to

load in perfect sequence. There are a lot of people in know in the PC scene who are quite capable of writing games, and given the opportunity of not having to spend huge amount of time working on a tape version, they'd be quite happy to produce some very good games.

If enough people want their drives, we can approach a company and try and get something out. I've contacted a company in the States who's prepared to do some sort of deal so I can bulk order good hardware from them to sell over here at very low prices.

What kind of hardware are you thinking about? Finally, we want to sell modules for a custom board system, are you planning to sell up. If enough people would be interested in a PC bulletin board system would set one up - it has an obvious advantage over mail-order PC because you don't have

to wait all those to postage and packaging. It would work with a system of buying download credits, roughly £3 for credit credits. This works out at about £2.50 worth of software for £1. Also, rather than buying a whole unit, you can just select individual programs, and mix and match whatever you like. Of course, anyone who's written anything can upload it into the system - we'll have all the normal bulletin-board

things, such as electronic mail, e-copie chats, and all sorts of special stuff.

We'd also like to start supporting 5.25-inch drives which obviously have a lot more than a normal 5.25-inch - these can hold up to 3.2MB, which is almost a mini hard drive. It's a lot more expensive, but at £140 for a 10MB you could top a high density 2.5-inch drive anyway. The other alternative is to get enough interested people together to fund some 10MB for about £800 - we could approach a company with a stock of drives and say something like, "we've got 1,000 people here who want to buy a drive, so how

about dropping the price?". At the end of the day, it'd be worthwhile to give the current tape users access to a lot of the software being produced - there is still a lot of stuff coming out in Germany and America that no-one has ever had because it's not available on tape, and that's a shame.

There are a number of other magazines in Germany that come with games every month, but we don't see the magazines and we don't see the games. This is obviously software that could be imported into the country if somebody had the

drive. I've been speaking to them about importing the software, so we're both setting out software in the other country, sharing a hell of a lot of software available in Britain again.

Finally, what do you think to the PC scene in Britain? I think the PC scene is going over the top - anyone is starting doing and starting a



Could *Flashback* work in the UK given its writing budget?



A big green world, bright sun, and the landscape strip.



Could this meet with the press?



Flashback - one of the best games ever on the Spectrum.

PC library. They're also looking out software that dates back from the Computer days - they're not paying up new stuff when it comes out at odd prices or some parties. These events happen fairly often, but not that many people go along, because they're usually organized amongst a group of friends. A lot of these companies just know one person with a few dollars and others, say the software and start another library, with nothing new to offer anyone.

Personally, I don't think any company could survive on PC alone - that's one of the reasons why we're doing all this extra stuff. We want to keep ahead of what's going on, and try to support the UK for as long as possible.



Could this be the group's main focus?

What think we have it - the future of the UK is in the disc drive. Okay, so not everybody will want to shift out for disc, but these don't will be missing out on a hell of a lot of new and impressive software that'll put everything else we seem to be to shame. Obviously, we're looking forward to seeing a review copy of *Flashback* in the near future.



That bit of the landscape's the water screen. Top, disk in December all right.

GET IN TOUCH

So you want to be a part of this UK revolution? Then get in touch with the Electric Boys team to tell them about:

- You want to buy a new disk drive or a absolutely low cost.
- You get it may think games.
- You like (shades from a flying metal band) and you there was a very hot heavy metal band called The Electric Boys (but we aren't that hot as regional bands).

The address is The Electric Boys, 91/92 Brighton Road, Purley, Surrey, CR8 9SE.



SECRET OF SEUCKCESS

If you've got the Shoot-'Em-Up Construction Kit you've got a programming tool that makes writing vertically-scrolling blasters a doddie. But getting it to produce really good vertically-scrolling blasters takes more skill. Stick with Jon Wells, though, and you'll develop the skill.

Part 3

Before I let you're thinking, look at all those figures. Let's bring this. But before, because these tables are for you to complete control of what I come to setting up in-game features in SEUCK games. This month, we're going to look at the memory map which features, as well as the locations of some large chunks of game code, a few in-game values you'll find within SEUCK. For instance, if you wanted to change the amount of lives player one has, you'd put PONE (the raw value) into the memory address you'll find in the following tables.

There are a few values and locations that won't make sense immediately, but we'll take a look at them over the coming months.



Remember, even a rather silly SEUCK game can read and write to every byte of memory available. Always use SEUCK features on page 28 for details of how to access it.

Description	Hex in code	Decimal SEUCK
Speed memory	\$0480 to \$0600	1824 to 2304
Map/background scroll data	\$0600 to \$1400	2304 to 5200
\$60 or 128 block colours	\$1400 to \$1600	5200 to 6000
Speed memory	\$1600 to \$1800	6000 to 6700
\$60 or 128 block data	\$1800 to \$2000	6700 to 6700
Scrolling machine code	\$2000 to \$2400	7920 to 9720
Main objects games	\$2400 to \$3000	9720 to 12000
SEUCK file system	\$3000 to \$3000	12000 to 12000
Binary attack wave patterns	\$3000 to \$4000	12000 to 16000
Main game machine code	\$4000 to \$6000	16000 to 24000
SEUCK editor machine code	\$6000 to \$6000	24000 to 49720
Game level sound to data	\$6000 to \$6000	49720 to 49720
Game object graphics	\$6000 to \$6000	49720 to 57344
SEUCK editor text code	\$6000 to \$6000	57344 to 58000
Game screen page 1	\$6000 to \$6000	58000 to 60736
Game screen page 2	\$6000 to \$6000	60736 to 61400
Scroll to screen game code	\$6000 to \$6000	61400 to 62400
SEUCK editor objects	\$6000 to \$6000	62400 to 63400
Game background character	\$6000 to \$6000	63400 to 65000



Now what you want you a bridge like this, you use to a ship or a gun that sprays bullets.

Remember, too that programmers never hit and half you will be programming "8 challenges" to code it.

There are also some very important locations, dealing with the controls of the two players:

Description	Top hex to desc	2 up/hex to desc
Player enabled	\$0000 to \$0000	\$0000 to \$0076
Amount of lives	\$0000 to \$0000	\$0000 to \$0076
Speed of player	\$0000 to \$0000	\$0000 to \$0000
Player main colour	\$0000 to \$1411	\$0000 to \$1411
Amount of bullets	\$0000 to \$0000	\$0000 to \$0076
Bullet speed	\$0000 to \$0000	\$0000 to \$0076
Directional fire	\$0000 to \$0000	\$0000 to \$0076
Bullet duration	\$0000 to \$0000	\$0000 to \$0076
Character rotation	\$0000 to \$0000	\$0000 to \$0076
On or step 0 or 1	\$0000 to \$0000	\$0000 to \$0076
Score max at 10000	\$0000 to \$0000	\$0000 to \$0076
Horizontal start position	\$0000 to \$0000	\$0000 to \$0076
Horizontal 256 to point	\$0000 to \$0000	\$0000 to \$0076
Vertical start position	\$0000 to \$0000	\$0000 to \$0076
Play area up stop	\$0000 to \$0000	\$0000 to \$0076
Play area down stop	\$0000 to \$0000	\$0000 to \$0076
Play area left position	\$0000 to \$0000	\$0000 to \$0076
Left 256 to point	\$0000 to \$0000	\$0000 to \$0076
Play area right position	\$0000 to \$0000	\$0000 to \$0076
Right 256 to point	\$0000 to \$0000	\$0000 to \$0076

Some other main SEUCK machine code locations are as follows:

- The players score counters for player one are at 0-8076; for player two, hex \$0040 to \$0040 or decimal 16027 to 16027.
- And for player two they are at hex \$0040 to \$0040 or decimal 16027 to 16027.

To convert hex to decimal, you can use the following of course
 2 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
 2 0000 to 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

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TECHIE TIPS

Prefers problems, graphical glitches and coding headaches are just puffy in the hands of Jason Finch, waiting to be moulded into answers (eh - Ed?)

of grey. However, with the other art packages, and without the use of Action Replay, I still only get pictures in shades of grey.

1. Is it not doing something I should be doing?
2. Are there any bugs clearly and unambiguously defined?
3. Is there a patch or program I can use to get the job done to print in colour?
4. Are there any art packages together that I can use with the 32666 LC 100 product? Someone, somewhere.

1. You are indeed doing everything you should be doing, but shades of grey are all you will get from these art packages.

2. That's right, they were written before the notion of a colour monitor. The 32666 was born!

3. Yes, *Paint Discoverer* (a \$19.95 value) is not a thing called a colour printer generated by the program, but will take files generated by the program and generate and send them in colour to a colour printer. You will need your file in the final format using your Action Replay settings.

4. Not that I know of, your best bet is to get hold of *Paint's Colour Printer Driver*, convert your pictures, and print them using that piece-of software.

WOT NO PLOT?



Dear Techie Tips,
I have just acquired a Commodore 1620.

Unfortunately, I've been told that there are no files about how to work it.

Because it did not come with a manual, any help you can offer, and perhaps test programs, would be appreciated.
Paul Murray, Brisbane

The plotter is set up as device 10. This means you cannot fit up to the C64 and then access it. So you need a printer, not instead of giving a device number of 10, you give one of six. So to fit a Epson program to the plotter you would use line 4, 4:000, 4:1:000 and then `PRINT:CLOSE` if when it had finished. I have included a couple of programs out of the 1620 manual which demonstrate how to connect other hardware, such as changing the colour, moving the pen down, and plotting text in different sizes, all of which are far more exciting than entering the printer and, well, it's not my favourite of *Magazines*.

This program should draw a number of rectangles between on the paper, changing the colour between each one.

```
100 REM ***** SIGNED NUMS *****
110 REM 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
120 REM 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
130 REM 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
140 REM ***** ***** ***** *****
150 REM ***** ***** ***** *****
160 REM ***** ***** ***** *****
170 REM ***** ***** ***** *****
180 REM ***** ***** ***** *****
190 REM ***** ***** ***** *****
200 REM ***** ***** ***** *****
210 REM ***** ***** ***** *****
220 REM ***** ***** ***** *****
230 REM ***** ***** ***** *****
240 REM ***** ***** ***** *****
250 REM ***** ***** ***** *****
260 REM ***** ***** ***** *****
270 REM ***** ***** ***** *****
```

```
100 REM ***** ***** ***** *****
110 REM ***** ***** ***** *****
120 REM ***** ***** ***** *****
130 REM ***** ***** ***** *****
140 REM ***** ***** ***** *****
150 REM ***** ***** ***** *****
160 REM ***** ***** ***** *****
170 REM ***** ***** ***** *****
180 REM ***** ***** ***** *****
190 REM ***** ***** ***** *****
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230 REM ***** ***** ***** *****
240 REM ***** ***** ***** *****
250 REM ***** ***** ***** *****
260 REM ***** ***** ***** *****
270 REM ***** ***** ***** *****
280 REM ***** ***** ***** *****
290 REM ***** ***** ***** *****
300 REM ***** ***** ***** *****
310 REM ***** ***** ***** *****
320 REM ***** ***** ***** *****
330 REM ***** ***** ***** *****
340 REM ***** ***** ***** *****
350 REM ***** ***** ***** *****
```

The 162000 program is much greater, but will display four lines of text, require a different size pen, and more movement than most plots.

```
100 REM ***** ***** ***** *****
110 REM ***** ***** ***** *****
120 REM ***** ***** ***** *****
130 REM ***** ***** ***** *****
140 REM ***** ***** ***** *****
150 REM ***** ***** ***** *****
160 REM ***** ***** ***** *****
170 REM ***** ***** ***** *****
180 REM ***** ***** ***** *****
190 REM ***** ***** ***** *****
200 REM ***** ***** ***** *****
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230 REM ***** ***** ***** *****
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250 REM ***** ***** ***** *****
260 REM ***** ***** ***** *****
270 REM ***** ***** ***** *****
280 REM ***** ***** ***** *****
290 REM ***** ***** ***** *****
300 REM ***** ***** ***** *****
310 REM ***** ***** ***** *****
320 REM ***** ***** ***** *****
330 REM ***** ***** ***** *****
340 REM ***** ***** ***** *****
350 REM ***** ***** ***** *****
```



RAINBOW WARRIOR

Dear Techie Tips,
I recently purchased a 32466 LC 100 colour

printer, I

and it up

according to the instructions. I received good colourful graphics and decided to use the art packages that I have, the Image System, The Designer's Friend, Mouse and Cursor, and Screen Paint. I know that I must use the Action Replay to print the *Saracen Paint* pictures and that it will only produce pictures in shades

of grey. However, with the other art packages, and without the use of Action Replay, I still only get pictures in shades of grey.



SIZE MATTERS

Dear Techie Tips,

I would like to see in big letters on the screen. Because, at the moment, I am just using small character letters in my programs. Please would it be possible to give me a program that allows me to print text on the screen in big fancy letters.
G. Bennett, Sydney

Big fancy letters are only achieved through expensive string fonts with an art package and drawing them, there are no letters that will automatically create a stunningly gorgeous set of letters. All I can offer you is a listing that will convert the normal size character set into one which is large in big characters across by four lines.

The program below creates a demonstration screen that allows you how to display these double word letters on screen. Basically, you first have to lower the screen PAPER code, for example, in the case, we'll say it's 8. The right set of the letter is code 8, the top right is 4:048, the bottom left is 4:128 and the bottom right is 4:208. To access the new letters you need to use: 4:212, 4:216, 4:220, 4:224, 4:228, 4:232, 4:236, 4:240, 4:244, 4:248, 4:252, 4:256, 4:260, 4:264, 4:268, 4:272, 4:276, 4:280, 4:284, 4:288, 4:292, 4:296, 4:300, 4:304, 4:308, 4:312, 4:316, 4:320, 4:324, 4:328, 4:332, 4:336, 4:340, 4:344, 4:348, 4:352, 4:356, 4:360, 4:364, 4:368, 4:372, 4:376, 4:380, 4:384, 4:388, 4:392, 4:396, 4:400, 4:404, 4:408, 4:412, 4:416, 4:420, 4:424, 4:428, 4:432, 4:436, 4:440, 4:444, 4:448, 4:452, 4:456, 4:460, 4:464, 4:468, 4:472, 4:476, 4:480, 4:484, 4:488, 4:492, 4:496, 4:500, 4:504, 4:508, 4:512, 4:516, 4:520, 4:524, 4:528, 4:532, 4:536, 4:540, 4:544, 4:548, 4:552, 4:556, 4:560, 4:564, 4:568, 4:572, 4:576, 4:580, 4:584, 4:588, 4:592, 4:596, 4:600, 4:604, 4:608, 4:612, 4:616, 4:620, 4:624, 4:628, 4:632, 4:636, 4:640, 4:644, 4:648, 4:652, 4:656, 4:660, 4:664, 4:668, 4:672, 4:676, 4:680, 4:684, 4:688, 4:692, 4:696, 4:700, 4:704, 4:708, 4:712, 4:716, 4:720, 4:724, 4:728, 4:732, 4:736, 4:740, 4:744, 4:748, 4:752, 4:756, 4:760, 4:764, 4:768, 4:772, 4:776, 4:780, 4:784, 4:788, 4:792, 4:796, 4:800, 4:804, 4:808, 4:812, 4:816, 4:820, 4:824, 4:828, 4:832, 4:836, 4:840, 4:844, 4:848, 4:852, 4:856, 4:860, 4:864, 4:868, 4:872, 4:876, 4:880, 4:884, 4:888, 4:892, 4:896, 4:900, 4:904, 4:908, 4:912, 4:916, 4:920, 4:924, 4:928, 4:932, 4:936, 4:940, 4:944, 4:948, 4:952, 4:956, 4:960, 4:964, 4:968, 4:972, 4:976, 4:980, 4:984, 4:988, 4:992, 4:996, 4:1000.



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BUT IS IT ART?

PART 1 - BACKGROUNDS

When it comes to designing game graphics knowing how to use the facilities the C64 has to offer is just as important as artistic flair. The Apex Boys give away a few tricks of the trade...

Apart from programming, the second hardest part of creating games is designing the graphics, which is why you'll rarely find a programmer who does both jobs. And before all of you non-arty types decide to turn the page, it might interest you to know that the key to great graphics lies not only in art, but in knowing what the computer is capable of achieving. Let's face it, if you don't know the tools that you can't exploit then, over the next couple of issues, we're going to tell you how it's done, starting with the most important - background graphics.

CHARACTER SETS

If you've never gone about writing a game before you might find the best way to design background levels is to knock 'em up in an old package like Screen Paint. Wrong! The packages produce bitmapped pictures which are incredibly memory hungry, which makes them impractical (and the BITMAP PICTURES box out). Nope, if you want some room in your RAM to actually do things like scrolling or animation, your best bet is to build up the backgrounds using characters. A standard 64K page takes up a whopping 8K of memory, whereas a character set takes up only 2K.

A character set, or character, is exactly what its name suggests - it's a 'set' of characters. (Bell goes bawling). All the letters that appear on screen when

you type on the C64's keyboard are characters, for example. And the C64 lets you design your own character sets, which is a rather handy.

There are 256 characters in a character, logically because a byte can only hold values from 0-255. This means that although you can store several characters in memory, only one can be 'used' by the C64 at any one time. Of course, data can be copied (or 'loaded') into a character to produce animated characters (discussed later on), but usually you're restricted to just 256 characters. Tough life, ain't it?

CHARACTER COLOURS

As well as a standard flag, each character can also have its own individual colour, known as the CHARACTER COLOUR. Apart from screen memory, the C64 also contains an area known as the COLOUR RAM, or to which the character colours are plotted. In HI-RES mode, the colour RAM can contain values from 0-15, allowing all 16 of the C64's colours to be used. So, for example,

when you type the word COMODOORE on screen, you could make each letter a different colour, but the background for all of them must remain the same colour - it is shared across the screen.

However, when MULTICOLOUR mode is switched on, the first eight letters (0-7) are used to denote 8-bit characters, and the last eight colours (8-15) are used for multicolour characters. So, within each character you can have:

- One character colour that can be chosen from the first eight colours.
- A universal background colour.
- Two universal multicolours.

In other words, when you're designing the graphics for a level you need to decide on three



THE TECHY PROGRAM-TYPE STUFF

The following programs have been included only to illustrate some of our graphics manipulation techniques, but also to allow any budding programmers to include such effects in their own programs. Each program can be typed in and PAID on the spot, but if you want to use it in your latest Multicolour demo, READ in the data before your program is run, then use the SYS call when you want the effect to start. Being such a cool, grandiose, and modest individual, we've also followed the program's lead (hey guys) to be resident in memory at the same time. However, they cannot actually be used simultaneously.

This first program demonstrates colour shifts, and changes the screen and multicolours roughly half-way down the screen. The height of the shift is represented by the value 145 in line 20, and can be changed when the program is running by using POKE 49496,20 to 220. The colour table is at location 49416, in the following order: screen colour, multicolour 1, multicolour 2, low half, followed by screen colour, multicolour 1 and multicolour 2 (bottom half).

This table is represented by the last six numbers in the data list (010, 011, 016, 019, 048, and 010). Obviously you need to have

multicolour mode switched ON to fully appreciate the effect - see page 20/21, PAGE 1 (20/21) AND 14.

If you change the DATA values in the program, REMEMBER TO ALTER THE CHECKSUM or you'll get a DATA error!

- use Area (mouse cursor)
- 1 FOR 0:PRINT 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29; 30; 31; 32
- 2 IF C=1:POKE 1288:PRINT "DATA ERROR":END
- 3 END
- 4 DATA 128,145,211,140,011,220,173,011
- 5 DATA 200,190,021,140,011,204,016,000
- 6 DATA 161,010,200,149,011,161,000,048
- 7 DATA 149,140,141,101,041,149,100,141

colours — the two multicolours and the background colour, which will remain constant throughout. It might sound limiting at first, but you can achieve some very effective results. There's one thing to note, though — while characters in multicolour mode use the same size as in Hi-RES mode, the pixels are twice as wide (see the RIGHT COUPLE). Of course, this is OK.

Anyway, purely by changing a value in the colour RAM, you can decide whether a character appears as hi-res or multicolour. This also means that only the first eight colours (black, white, red, cyan, purple, green, blue and yellow) can be used as character colours in multicolour mode.

For example, in hi-res mode a value of 15 would make the character in my LIGHT GREY! (it could be any colour), but in multicolour mode, this would become a YELLOW multicolour character. If you take a look at Mayhem in Misterious! both hi-res and multicolour characters are used extensively (they're being used mainly by Ghouls, Stars and parasites).

Most games which use scrolling do not use different character colours, instead the colour RAM permanently contains the same colour (Suburban Confessions for example). This isn't because the programmer is incompetent, or the graphics artist is lazy, but it's due to the limited amount of RAM.

Basically if you're using character colours, the colour RAM information needs to be shifted along with the screen data every time it scrolls, effectively doubling the usual processing time. The scrollies used in Mayhem and Creatures instead a bug in the VIC chip to produce a very fast hi-colour scroll. Finally the Asteroids uses a genuine hi-colour scroll. Out of the playing area is smaller and the scrolling quicker. If you want to use colour RAM, either cut down the playing area or don't scroll.

Apart from using the colour RAM to make your in-game graphics more colourful, you can also point areas of the colour RAM to create colour cycling effects. The old Mayhem demo featured on the past few coverpages uses this effect on the lava names, you might also be able to apply it to Expendable, Retrograde and Creatures 2 particularly on the screens and high score tables.

STIPLING

Sometimes known as 'cross-hatching', stippling is just another way of shading, highlighting or backlighting. Say, for example, you had a light blue

A RIGHT COUPLE OF CHARACTERS



HI-RES CHARACTER

MULTICOLOUR CHARACTER

Remember, the two multicolours and the background colour remain the same throughout a level. You can then have one other character colour within each character chosen from the first eight colours in the VIC's palette (black, white, red, cyan, purple, green, blue and yellow). For you can only use one character colour within each character. Note also the double-width pixels.



The mountains in Mayhem are a stippling effect.



sphere which needed a highlight and a shadow. Rather than use 'solid' colour to shade the sphere, you could apply the colour. In other words, use alternate pixels in a sort of dithered fashion. If that has gone straight over your head, take a look at the many platforms in Hells Jellyford, which are stippled with pink and black rather than being filled in with a solid colour. You might also have spotted the stippled effect on the green platforms, which move cyan and green to create a 'lighter' colour.

COLOUR MIXING

This is a very handy technique for increasing the amount of colours on screen, which doesn't involve hardware history or raster splits. Basically, new colours can be created by drawing alternate horizontal lines using two colours of equal

brightness (green and pink, for example). When the screen is on screen, the colours blend to produce what looks like a completely new colour. This was used loads of times in Mayhem — take a look at the background mountains in Popcorn in the underwater sections in Spartyland.

ANTI ALIAS

When using multicolour characters, the pixels are often two times

```

00 0000 000 000 000 000 000 000 000
01 0000 000 000 000 000 000 000 000
02 0000 000 000 000 000 000 000 000
03 0000 000 000 000 000 000 000 000
04 0000 000 000 000 000 000 000 000
05 0000 000 000 000 000 000 000 000
06 0000 000 000 000 000 000 000 000
07 0000 000 000 000 000 000 000 000
08 0000 000 000 000 000 000 000 000
09 0000 000 000 000 000 000 000 000
10 0000 000 000 000 000 000 000 000
11 0000 000 000 000 000 000 000 000
12 0000 000 000 000 000 000 000 000
13 0000 000 000 000 000 000 000 000
14 0000 000 000 000 000 000 000 000
15 0000 000 000 000 000 000 000 000
16 0000 000 000 000 000 000 000 000
17 0000 000 000 000 000 000 000 000
18 0000 000 000 000 000 000 000 000
19 0000 000 000 000 000 000 000 000
20 0000 000 000 000 000 000 000 000
21 0000 000 000 000 000 000 000 000
22 0000 000 000 000 000 000 000 000
23 0000 000 000 000 000 000 000 000
24 0000 000 000 000 000 000 000 000
25 0000 000 000 000 000 000 000 000
26 0000 000 000 000 000 000 000 000
27 0000 000 000 000 000 000 000 000
28 0000 000 000 000 000 000 000 000
29 0000 000 000 000 000 000 000 000
30 0000 000 000 000 000 000 000 000
31 0000 000 000 000 000 000 000 000

```

The next program is primarily for presentation purposes, and will generate a 10-line colour bar at the top of the screen (these same lines are used over the top to give the best effect). The height

of the split is represented by the value 640 in line 20, and can be changed when the program is running by using 0000, 0000, 0000, 0000 where 0 is the new value from 0 to 25. The size of the bar is represented by the second 640 in line 27, and can be changed directly using 0000, 0000, 0000, 0000. Do not use values higher than 178. If you'd like to 'cycle' the colour bar, you can change the 640 in line 15 to 000, or change it directly using 0000, 0000, 0000, 0000. It is for no reason, and I'm not cycling. And finally, the colour table is located in memory at location 0000, and is also conveniently located at the end of the program (allowing you to expand the

table if desired). If you change the DATA values in the program, REMEMBER TO ALTER THE CHARACTER ROM or you'll get a DATA error!

```

0 000 000 000000 000
1 000 000 000000 000
2 000 000 000000 000
3 000 000 000000 000
4 000 000 000000 000
5 000 000
6 000 000000 000 000000 0000 0000 0000 0000
7 000 000000 0000 0000 0000 0000 0000 0000
8 000 0000
9 0000 000 000 000 000 000 000 000 000 000 000
10 0000 000 000 000 000 000 000 000 000 000 000
11 0000 000 000 000 000 000 000 000 000 000 000
12 0000 000 000 000 000 000 000 000 000 000 000
13 0000 000 000 000 000 000 000 000 000 000 000
14 0000 000 000 000 000 000 000 000 000 000 000
15 0000 000 000 000 000 000 000 000 000 000 000
16 0000 000 000 000 000 000 000 000 000 000 000
17 0000 000 000 000 000 000 000 000 000 000 000
18 0000 000 000 000 000 000 000 000 000 000 000
19 0000 000 000 000 000 000 000 000 000 000 000
20 0000 000 000 000 000 000 000 000 000 000 000
21 0000 000 000 000 000 000 000 000 000 000 000
22 0000 000 000 000 000 000 000 000 000 000 000
23 0000 000 000 000 000 000 000 000 000 000 000
24 0000 000 000 000 000 000 000 000 000 000 000
25 0000 000 000 000 000 000 000 000 000 000 000
26 0000 000 000 000 000 000 000 000 000 000 000
27 0000 000 000 000 000 000 000 000 000 000 000
28 0000 000 000 000 000 000 000 000 000 000 000
29 0000 000 000 000 000 000 000 000 000 000 000
30 0000 000 000 000 000 000 000 000 000 000 000
31 0000 000 000 000 000 000 000 000 000 000 000

```



accommodate the extra colour. This has the disadvantage of making diagonal lines and curves look noisy. Anti-aliasing is a simple and painless method which effectively disguises the jagged edges.

For example, if you had a dark curve on a light background, an intermediate colour can be used to shade the curve and make it look much smoother. Pixmaped areas quite a bit of anti-aliasing, particularly on the mountains and curved pipes.



Cyberdyne Mission shows how anti-aliasing can be used to effect horizontal character colour splits.

COLOUR SPLITS

Using raster interrupts to split the on-screen colours is an effective way to add even more colour to your graphics. Very simply, the raster split changes the screen colour and multicolours at a certain height on the screen but not character colours, allowing you to have, for example, a black screen with grey and blue multicolours in the top half, and a white screen with green and brown multicolours in the bottom. Colour splits were used in *Cyberdyne Mission*, *Hexagonaloid Creatures 1&2*, purely to make the graphics more colourful. Note that colour splits cannot be used to split the character colour, as this is virtually impossible.

Another way for colour splits, a presentation, namely the much-loved raster bar patch, not surprisingly, were used in all of our games. This involves splitting the background colour to produce a colour bar across the screen. When inverted this is called over this, it gives the impression that the first colour has been raster split (which, as we explained above, is almost impossible), if you'd like to be this effect in your own programs, take a look at the *CGI/RGB BAR* program.

BUILDING A PICTURE

Before you start thinking about your background graphics, you need to get hold of a decent character editor (or two editors, as they're sometimes called). There are loads of these available from IBM, Microsoft, but make sure the editor allows you to edit multicolour characters in real-time. We use a multicolour editor by Pinedax, called (rather confusingly) *Graphic Editor*. If you can get hold of this, do so, as it's a rather handy piece of kit and tells you what's going on. You don't necessarily need a graphic editor though, as it's possible to design your graphics on graph paper and convert the values into DIBs, but this takes an inordinate amount of time and is very, very boring.

As mentioned earlier, you are restricted to 256 characters per character, and therefore you have to think ahead and plan your graphics carefully, using the same character repeatedly can save valuable character space, most of the levels in *Mayhem* have characters of some sort, and therefore large areas can be built up using only a couple of characters. Obviously, the more detailed you want the graphics to be, the more characters you will need up there, but generally speaking if you can get away with repeating the odd character, do so.

The best way to start is to sketch on paper all the ideas you have, and if the graphics you want to create. Then, you need to sit down in front of character set editor and create graphics.

Experience has taught us to always include a loose character and inverted character (ie, solid character colour) in the character set - they come in very handy from time to time. Oh, and don't be surprised if it takes a long time to get the graphics too tight - it might mean you do to know that there's space when it's being done that a couple of characters is taken, very noticeable at first, but if you stretch your graphics with characters in mind, it becomes much easier.

If you're finding it difficult to transfer your ideas from paper to pixels, by dot of your dirty socks, first grab yourself some cling film or similar transparent material, and have your sketch using a permanent marker. Then place the cling film over the screen and trace the image onto the CGM by drawing around it onto a block of different characters. Simple but effective. Once you have the basic outline it should be fairly problem to fill in the required detail. However, as mentioned earlier, smaller graphics take up a lot of space, so be careful.

Once you've drawn your backgrounds or whatever, the easiest way to print up a screen is by simply using PRINT statements. As you design your graphics, make a note of how they fit together, then replicate this in your own program. An alternative to PRINTing characters is to POKE the values into character numbers directly into the screen via POKE 1024,1 for the character, and POKE 1026,1 for the colour.



*Blocks are a way of saving memory space. Instead of saving each individual character they can be grouped together and saved as blocks, in *Mayhem* blocks of 144 characters were used.*

BLOCKS

Using blocks or groups of characters is a trick exploited by virtually all games creators, the main purpose of which is to save valuable memory. For instance, a typical CGM screen takes up 1,000 bytes of memory (about 1K). To obtain the same screen using 4-bit blocks would take only 60 bytes, which is quite a saving. Now consider a scrolling game, with a map which is 10 screens long. Using characters it would take 10,000 bytes, as opposed to a mere 600 bytes when using 4-bit blocks.

Obviously the block technique also takes up space in memory, but this still takes up less memory (100 blocks would take up a measly 1600 bytes in comparison). If blocks seem like cheating, it might inspire you to know that each level in *Mayhem* used only 144 blocks.

Another point to consider is block size, all of our games have used the ubiquitous 4-bit blocks, but other block sizes are perfectly acceptable: *Out of the Box* uses 8-bit blocks, *Out of the Box* and *Henry the Artisan* use 16-bit blocks, while *Winter Camp* even used 8-bit colours... take your pick.

ANIMATED CHARACTERS

It doesn't matter how detailed your background graphics are - if there isn't enough action, the backgrounds will look static. The actual process is quite straightforward, and involves copying or banking new data into the character set at regular intervals. Because the technique relies on data only, the animations don't have to be resident in the character - only the characters which animate need to be included.

14 DATA 101,108,111,104,106,108,096,109

15 DATA 091,145,021,209,182,011,202,010

16 DATA 201,050,119,181,148,080,208,041

17 DATA 171,148,041,071,051,141,140,101

18 DATA 088,041,014,158,019,081,088,114

19 DATA 070,088,049,088,051,091,040,112

20 DATA 101,189,034,183,009,041,108,101

21 DATA 171,000,034,143,009,088,000,134

22 DATA 071,000,034,100,018,091,144,041

23 DATA 148,189,039,148,041,041,018,041

24 DATA 074,049,139,148,001,131,049,041

25 DATA 000,081,001,144,041,011,011,049,041

26 DATA 000,088,049,091,091,041,091,041

27 DATA 044,091,091,091,091,101,019,091

28 DATA 100,091,091

29 DATA 000,000,000

30 DATA 001,001,001,001,001,001,001,001

31 DATA 001,001,001,001,001,001,001,001

32 DATA 001,001,001,001,001,001,001,001

33 DATA 001,001,001,001,001,001,001,001

34 DATA 001,001,001,001,001,001,001,001

35 DATA 001,001,001,001,001,001,001,001

36 DATA 001,001,001,001,001,001,001,001

37 DATA 001,001,001,001,001,001,001,001

38 DATA 001,001,001,001,001,001,001,001

39 DATA 001,001,001,001,001,001,001,001

40 DATA 001,001,001,001,001,001,001,001

41 DATA 001,001,001,001,001,001,001,001

42 DATA 001,001,001,001,001,001,001,001

43 DATA 001,001,001,001,001,001,001,001



Animated characters can be used in many different situations: bubbling lava, fiery pits, water and rivers, no name but a fire. This background animation, in small doses, will give the game extra life and sparkle. Where would Creatures be without the animated waterfalls? And what about the rotating stars in *Mystic*?

ROLLING CHARACTERS

Apart from scrolling and animating characters, the actual character idea can be 'rolled' (or shifted) in order to create the illusion of movement. *Mighty* in *Montezuma* features some pretty daunting parallax sections, which create an amazing illusion



of depth. This trick was also used in *Phetogade* and *Creatures* to produce similar parallax effects.

The actual technique is very simple. Basically it involves rolling the data through characters in the opposite direction to the screen scrolling. Just as fast as the speed to create a moving character background. Rolling the characters at the same speed as the

THE TOMORROW'S WORLD PATRONISING GUIDE TO SCROLLING THE COLOUR RAM



Scrolling the character colours to black is a nightmare, and here's where an explain-why. Think of the left-hand block above as a section of the colour RAM, into which you have placed your character colour information. In actual character colours should go white in the background.

The block on the right is the a set of four character blocks. It's very grey in the background colour, imagine it as one of the multicoloured and white characters that might be

identifying on the information in the colour RAM:

- Right now, let out the block to the right and cut out holes where all the white pixels are.
- Next, place the cut-out block over the colour RAM block so that it covers it completely.



How does the character block over the colour RAM. This creates scrolling with YOU HAVEN'T SCROLLLED THE COLOUR RAM AS WELL. In other

words, the character colours appear to change. But what we need.

■ So, you have to make the colour RAM as well. In this case it's as simple as cutting out the colour RAM block above and giving it completely the colour the block is programming some it's more tricky and

takes up a lot of memory. That's why some games like *Suburban Commando* roll out altogether and keep the same character colour throughout a level. Four months, black holes explained with the aid of a egg walk and a washing-up bowl.

walker (again in the opposite direction) would give the illusion of a static background. Simple, but very effective. Rolling characters are also used to give effect in *Mighty's* intro and GET READY sequences to produce parallax landscapes without the need to physically scroll the screen.



THERE'S MORE

Now that you've got your background scrolls sorted out, it's time to take something on top of them, so read month the Boys will be showing you how to spruce up your graphics. Be there or be a small potted plant.

BITMAP PICTURES

If you've never heard of bitmap pictures, you're almost certainly seen them (most leading systems are bitmap images). These are pictures that are stored in memory as whole pictures as opposed to user-defined character equates. Editors such as *ScreenPlay*, *Video*, *GGP Art Studio* and *Three Colors* are dedicated to bitmaps, and each picture can either be 64-655 (256x256 pixels) or 128-655 (128x256 pixels).

While all are pictures (well, from this date, only two colours are permitted in each character square (including the background colour) in 64-655, up to four colours are permitted in each character square (including the background colour), but with the disadvantage of character pixels. (Thanks to my, most people opt for the extra colours.

By now you're probably wondering why you'd get into such characters instead of bitmaps. Firstly, a standard bitmap picture takes up a huge bit of memory, whereas a character set takes up only 2K. Secondly, it takes much more processing power to print, scroll or animate bitmaps... which is why they are mostly used for leading systems. Despite of digitalised most images.

but the game was limited to fast screen action and never made any attempt to scroll. Very few games actually use scrolling bitmaps in games, but if you're like to use some in action (after a peek at *Montezuma* featured on PowerPlay 10) or the regular *Montezuma*. Both have very narrow screens and black backgrounds.

Bitmap pictures, being no motion's format, are usually reserved for title screens. Despite of digitalised stars them, but they're not wrong.





GAMEBUSTERS

They tried to get it banned. MPs said it was corrupting our nation's youth by encouraging cheating and laziness. But Andy Roberts is still here to lead the gameplayingly challenged astray.

DELIVERANCE

PC/MS-DOS 4.0

Richard Rouseff has been working hard again, and this month he brings us a solid chunk of sound advice for the ongoing Microsoft sequel.

BUGS

There are a maximum of 28 lakes to rescue, 18 of which are found on level one. However, they can be stolen or level two by the bottom, so take care. The more lakes you rescue, the more points you receive at the end of the game, and what do points matter...?

WEAPONS

These always come from the same place and rise slowly up the screen, so watch out for bubbles below you. If a bubble is at the top of the screen wait a bit, as it will instantly appear at the bottom as soon as it leaves the top. They cannot be shot. Large blue bubbles, however, act as platforms, but be careful as they are beneath your feet.

BOSS These are easily disposed of, and need just one hit to fall. They don't regenerate health, and you must see if you're standing still... so stand still while you shoot them.

WATER DRIFTERS These usually appear in swimmers, and are easily avoided. Just point your pistol with your left hand, perform a double jump.

COOLERS These require three hits to fall, and you can avoid their bullets simply by ducking low long as they're on the same level as you, but not.

SPINNERS These boats are indestructible, however, rather than spinning under them, by jumping on their backs (only the head is dangerous).

FALLING ROCKS These can be very difficult to pass safely. If you can't avoid them, let yourself get hit and then run past while you're still invincible.

FALLING EGGS If you stay at the far right of the screen, they will never, ever hit you. Ever.

GIMME! GIMME! GIMME!

And we don't mean a man after midnight, but we are prepared to reward a splendid CD software purchase in the order of any decent tips, suggestions, Action Replay POKES or general gameplaying advice. Post your gem to: Andy Roberts, Gamebusters, Commodore Format, 30 Marshwood Street, Bath, Avon BA1 2SQ. Don't forget to include your name and address, along with some chocolate chip muffins or plain.

SPINY BOSS PLATFORMER

Like the spiders, but require slightly different tactics, that beats them, then run underneath when it's safe.

BOSS'S DRAGONS

Completely harmless, and you can safely jump on their backs for a free fight.

FRONT Pretty easy to dispose of - simply shoot them in mid-jump when they are over your head. They only need one hit to fall.

WINGED DRAGON Stand at the side of the screen, then jump and shoot simultaneously. When they first appear, they won't reach the side of the screen. Be careful of these on level two, as they will steal lives from you. In this case, shoot them as soon as they appear.

DRAGONS - They rise from the ground in the centre of the screen, so simply stay at the edge and shoot as they appear.

DRAGON (one hit avoid as the head)

DRAGON SKULL

Avoid standing directly under them, as bits of an egg will fall. Avoid them rather than shoot, as they disappear pretty quickly anyway.

BOSS'S DRAGON Stand on these to get out of the rain, but don't jump to avoid entering through them. If you can't jump onto them, run like mad.

LIGHTNING DRAGON Again, stand on them if possible, otherwise just shoot the lightning as it appears (one hit required).

FLAKE OF ICE Only about the area in front of you, as there's no time to shoot the others again. They take one hit apiece.

BARREL If a cross-egg, shoot them rather than the eagle, then wait until it flops over. If it doesn't, use special weapons as it charges towards you.

FALLING ROCKS If you shoot them, they split into big smaller rocks. Destroy them one at a time, as the smaller rocks are harder to avoid.

WATER FORM Simply run through it while firing special weapons upwards.

EGG, FAIRY The final guardian! Stand next to the rock when it's generated, as you and the rock from that. Then jump up between lightning bolts and shoot it a mere 50 times to complete the game. Hurrah.



ACTION REPLAY POKES

PUD & DAWSY, SUB BURNER, CHAOS ROAD AND SKUL

PC/MS-DOS 4.0

Here's a handy list by anybody with a Action Replay cartridge. They really are quite ground. Simply hold up the game, press the F10 key, then press the freeze button. Press K... interestingly, G.



and you can now restart the game by pressing F10, with the added bonus of no software destruction. And if you have some more DELUXE games sitting around, by the way on their too. And here are some Action

Replay cartridge POKES that work on any of the games above:
POKE
 0000, 140 and POK
 0000, 140 for nitrate
 time, Duky?



SOS

SAVE OUR SPRITES

It's back! The section where we give you the cheats that you demand. Ain't that touching?

RICK DANGEROUS 2

88 C0L0000X

Rick Dangerous 2 is a by-word for "fantastically tricky" so we've provided the keys to infinite lives, bombs and bullets. If you don't fancy trying in the



- living, try this cheat
 On the high score table enter your name as JJ VBL00 01700 for infinite lives.
 0 888 8000 0-11
 00000 01 000
 1 F08 0-043 70
 040-0000
 2 F08 0000 0-1 70000
 3 F08 0000 70 411-0000 0-0400 70000
 4 F08000
 5 1F 0-0000 0000 0000 7000 0000 0000 0000
 6 0000 70000000 0000 0000 0000
 7 1F 00-70 7000 000 0000 70 411-0000
 8 000-0000
 9 0000 70000000 0000 0000 0000 0000 0000
 0 0000 000 411-1
 1 0000 70000000 000000 0000 0000 0000 0000
 2 F08 007-100-000 040
 3 0 0000 000-000-100-000-100-000-000-000-000
 4 0000 000-000-000-100-000-000-000-000
 5 0000 000-100-000-000
 6 0000 000-100-000-000-100-000-000-100-000-000
 7 0000 000-100-000-000-100-000-000-100-000-000
 8 0000 000-100-000-000-100-000-000-100-000-000
 9 0000 000-100-000-000-100-000-000-100-000-000
 0 0000 000-100-000-000-100-000-000-100-000-000

- 01 0000 141-000-000-000-144-144-000-000-000
 02 0000 149-000-141-000-144-000-000-000-000
 03 0000 049-149-000-049-141-000-000-000-000
 04 0000 141-000-000-141-141-141-000-000-000
 05 0000 049-149-000-141-000-149-000-000-000
 06 0000 141-000-000-141-141-141-000-000-000
 07 0000 049-149-000-141-000-149-000-000-000
 08 0000 141-000-000-141-141-141-000-000-000
 09 0000 000
 * Help requested by Steve French, Matthew Stewart, Mark Day, Steve Roberts, Matthew Stewart, Chris Waterhouse, Craig Drummond, Steve Matthews, Ian Dunning and Scott Wilson

LICENCE TO KILL

COMMANDER BOUND

This Commando classic is undoubtedly the best shoot game to date, but it's a toughie too. As luck would have it, here's a smart key for infinite lives and/or infinite energy - simply type in **SAVE** for bombs use, then **PLU** is what would be done if we couldn't rely on the **WASD** letters for direct input

- 0 000 1-0-0 0000 01 000
 1 F08 3-040 70 000-0000 70-0-0 7000
 2 0-0-0000
 3 1F 0-0-000 0000 0000 7000 0000 0000
 4 0000 70000000 0000 7000-040-01 00-70
 5 0000 000 000 000
 6 0000 70000000 0000 7000-040-01 00-70
 7 0000 000 000 000
 8 0000 70000000 0000 7000-040-01 00-70
 9 0000 000 000 000
 0 0000 149-000-141-000-144-144-000-000-000

- 11 0000 000-000-000-000-000-000-000-000-000
 12 0000 000-000-000-000-000-000-000-000-000
 13 0000 000-000-000-000-000-000-000-000-000
 14 0000 000-000-000-000-000-000-000-000-000
 15 0000 000-000-000-000-000-000-000-000-000
 16 0000 000-000-000-000-000-000-000-000-000
 17 0000 000-000-000-000-000-000-000-000-000

* Help requested by Anthony Pridler, Jonathan Black, G N Hayes, Graham Roberts, Jeff McPhee from Steve Price, G N Hayes, Alan Jones, James, Steve Matthews and Dennis Anderson. As usual you can always write to the magazine if having your name mentioned in the next computer mag isn't the greatest. You'd better write now.

SIX STEPS FOR INNER PEACE

- 1 Get hold of a professional scuba instructor.
- 2 Ask down the gamero's you're stuck on (including the publisher).
- 3 Specify the type of cheat you'd prefer - we'll soon deal with specifics. How do you get past the rock zone on level three or...? Type specifics.
- 4 Include your name & address.
- 5 Stick a stamp on the front and send it to: **600, Commodore Format, 20 Broadwood Street, Broom, Barn, BN1 1DQ.**
- 6 Wait for our findings.

TURRICAN 2 (DISK VERSION)

88 C0L0000X

Turrican 2 - without a doubt one of the best ever platform romps ever released, ever - was a bit difficult in places, though, wasn't it? No-one had any fun after they can't let us see, though, did they? Well, we've done TURK 2 for the masses, in the form of an unbelievably amazing listing **POWER**, which offers infinite lives, energy, 100% and power ups. If that wasn't enough, it also makes the sea and does the waiting up. Simply type in the listing **PLU** is, then follow the on-screen prompts for a heavy dose of sheer gaming pleasure. It's simple, really.

- 0 888 800 0-11
 1 F08 0-040 70 000-0000 70-0-0 7000
 2 700000
 3 1F 0-0000 0000 0000 7000 0000 0000
 4 0000 70000000 0000 7000-040-01 00-70
 5 0000 000 000 000
 6 0000 70000000 0000 7000-040-01 00-70
 7 0000 000 000 000
 8 0000 000-000-000-000-000-000-000-000-000
 9 0000 100-000-000-100-100-000-000-000-000
 0 0000 141-000-000-141-000-000-000-000-000
 11 0000 000-000-000-000-000-000-000-000-000
 12 0000 000-000-000-000-000-000-000-000-000
 13 0000 000-000-000-000-000-000-000-000-000
 14 0000 000-000-000-000-000-000-000-000-000
 15 0000 000-000-000-000-000-000-000-000-000
 16 0000 000-000-000-000-000-000-000-000-000
 17 0000 000-000-000-000-000-000-000-000-000

* Help requested by Steve Price, John Roberts and Scott Wilson.

RICK DANGEROUS

88 C0L0000X

Even super heroes face their off days, so it comes as no surprise that Rick Dangerous needs the old helping hand from time to time. If you'd like infinite lives & they will, here's a listing **POWER**, especially for you.

- 0 888 8000 0-11
 1 F08 0-040 70 000-0000 70-0-0 7000
 2 F08000
 3 1F 0-0000 0000 0000 7000 0000 0000
 4 0000 70000000 0000 7000-040-01 00-70
 5 0000 000 000 000
 6 0000 70000000 0000 7000-040-01 00-70
 7 0000 000 000 000
 8 0000 70000000 0000 7000-040-01 00-70
 9 0000 000 000 000
 0 0000 149-000-141-000-144-144-000-000-000
 11 0000 000-000-000-000-000-000-000-000-000
 12 0000 000-000-000-000-000-000-000-000-000
 13 0000 000-000-000-000-000-000-000-000-000
 14 0000 000-000-000-000-000-000-000-000-000
 15 0000 000-000-000-000-000-000-000-000-000
 16 0000 000-000-000-000-000-000-000-000-000
 17 0000 000-000-000-000-000-000-000-000-000

- 01 0000 141-000-000-000-144-144-000-000-000
 02 0000 149-000-141-000-144-000-000-000-000
 03 0000 049-149-000-049-141-000-000-000-000
 04 0000 141-000-000-141-141-141-000-000-000
 05 0000 049-149-000-141-000-149-000-000-000
 06 0000 141-000-000-141-141-141-000-000-000
 07 0000 049-149-000-141-000-149-000-000-000
 08 0000 141-000-000-141-141-141-000-000-000
 09 0000 000
 * Help requested by Matthew Stewart, Craig Day, Mark Day, Steve Roberts, Matthew Stewart, Chris Waterhouse, Craig Drummond, Steve Matthews, Ian Dunning and Scott Wilson



With a name like Rick, it's no mean feat to get trapped just a little bit!



LISTOMANIA POKERAMA

Flex those fingers and hammer those keys, 'cos it's type-ins time. The secrets of infinity will be yours...

MAYHEM IN MONSTERLAND (ARMS)

The limited version of Mayhem in Monsterland contains a small bug which affects the boss-counter during the game. This oversight can be corrected by using either of these two listings, depending on which version you own.

- 1 ROM 802008 112 01 802008 0000
- 1 PCB 80202 00 8270000 0000V1000
- 1 ROM 000000 000 0000 0000
- 1 ROM 000 000 000 000
- 10 ROM 000 000 000 000
- 11 ROM 000 000 000 000
- 12 ROM 000 000 000 000
- 13 ROM 000 000 000 000
- 14 ROM 000 000 000 000
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- 23 ROM 000 000 000 000
- 24 ROM 000 000 000 000



- 1 ROM 802008 000 000 000
- 1 PCB 80202 00 8270000 0000V1000
- 1 ROM 000000 000 0000 0000
- 1 PCB 00000 000 0000 0000
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- 19 ROM 000 000 000 000
- 20 ROM 000 000 000 000
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- 22 ROM 000 000 000 000
- 23 ROM 000 000 000 000
- 24 ROM 000 000 000 000

TIMES OF LORE

800 6000000000

Having trouble with the spreading rate playing game? Can't find the right spell to defeat the Grand Wizard Sargat? Put up with reading boring notes that have been written by someone who's read LOTR? Or the Rings come too often when you'd rather be typing in a cheat? Having a party and haven't invited me? Well, you don't deserve this listing.

- 1 ROM 00000 000 0000 0000
- 1 PCB 00000 00 8700000 0000V1000
- 1 ROM 00000 000 0000 0000
- 1 PCB 00000 00 8700000 0000V1000
- 1 ROM 000 000 000 000
- 10 ROM 000 000 000 000
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- 24 ROM 000 000 000 000

POWER PACK

SUB BURNER

It's time to see a BERSG game with a little extra sparkle, and that's where you'll find this. Now it also has an infinite lives.

- 1 ROM 800000 0000 0000
- 1 PCB 80000 00 8200000 0000V1000
- 1 ROM 000000 0000 0000 0000
- 1 PCB 00000 00 8200000 0000V1000
- 1 ROM 000 000 000 000
- 10 ROM 000 000 000 000
- 11 ROM 000 000 000 000
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- 24 ROM 000 000 000 000

SKULZ

It's the game to bring you out of your skull at copyright/cheap cheats hell, who has your life listing a list?

- 1 ROM 00000 0000 0000
- 1 PCB 00000 00 8200000 0000V1000
- 1 ROM 000000 0000 0000 0000
- 1 PCB 00000 00 8200000 0000V1000
- 1 ROM 000 000 000 000
- 10 ROM 000 000 000 000
- 11 ROM 000 000 000 000
- 12 ROM 000 000 000 000
- 13 ROM 000 000 000 000
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PUD & DAWNY

For two months after the game was released, there is already an official Pud & Dawny Infinite Lives ROM. Don't you just love cheating?

- 1 ROM 000 000 000 000
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- 1 PCB 000 000 000 000

CHAS ROAD

Now you can play Chas Road with the official Infinite Lives ROM. Don't you just love cheating?

- 1 ROM 000 000 000 000
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- 1 ROM 000 000 000 000
- 1 PCB 000 000 000 000



SEYMOUR goes to HOLLYWOOD



Movie sequels are rarely as good as the originals but this second part of our complete solution to Seymour's LA

antics is Oscar-winning stuff.



Just as this later than advertised, it's the second and final part of our complete Seymour solution. And just in case you're missing the full part, here's how to GO! to the story on file.

Go! • W • drop BODY and FOOT • D • R • R • L • U between gap • U between gap • U between gap • collect both MARIO and the HEAD • R • L • R • R • enter door • L • U • drop MARIO and HEAD • D • R • R • L • U between gap • U between gap • L • U • L • L • U • U • collect LOLLIPOP • L • L • enter door • collect COIN • enter door • R • R • R • R • R • R • R • enter LOLLIPOP • collect LEGO • R • LR • R • enter door • L • U • drop LEGO and COIN • D • R • enter door • L • collect LEGO • enter door • collect MM • L • U between gap • L • enter door • R • L • go left • collect GLOVES • R • U • go bottom • enter door • L • L • R • R • enter door • L • U • D (left side) • drop LEGO and MARIO under table • U • collect LEGO and MARIO • D (left side) • drop LEGO and MARIO under table • U • collect HEAD and MARIO • D (left side) • drop HEAD and MARIO



The window revealed what is expected throughout whenever you're in getting instructions.

under table • U • collect BODY and FOOT • D (left side) • drop BODY and FOOT under table • U • D (right side) • R • R • L • U between gap • U between gap • U between gap • U between gap • collect both R • L • R • R • R • enter door • collect FOOT • L • U • D (left side) • drop FOOT and MARIO under table • U • collect COIN • go left • U • HIT SWITCH • HIT SWITCH again when PHOENIX flies • D (left side) • collect KEY • R • D • collect MARIO • R • L • U between gap • U between gap • U between gap • drop MARIO and GLOVES • collect DAWG and BUTTY • R • L • L • L • U • give BUTTY to MARIO MARIO • Use MARIO to go through chains • collect MEDAL • D • D • L • go to between gap • U between gap • enter door • collect HEART • L • L • R • U between gap • U between gap • collect MARIO • R • L • enter door • D • U (left side) • U • L • D • give all papers to CONFORTY • collect TOWEL • L • L • U between gap • enter door • type on COMPUTER (you use in the game) • stand on beachside • drop TOWEL and move out of the way before you teleport • if the lower teleports go L • L • R • U between gap • U between gap •



PART 2

ESPECIALLY are in the right place • enter door • collect SCRIPT

The now need to hold the SCRIPT, then collect OSCAR and give them to certain people. They are:

- The secretary
- Travis
- The wife
- Dorothy
- The producer
- The deal lady
- Ming
- Frankenstein
- Rick Brady
- The agent
- King Kong
- The teacher
- The sister
- JJ
- Woman in grassy strip
- Security guard

And the location of these Oscars!

- The W (behind door)
- Inside a central bottom left, behind screen
- Mantis near hole (behind leaves)
- Castle exit (behind leaves)
- Look up (behind tree)
- Shoreline boxes (behind leaves)
- Space base (left gate)
- Frankenstein (behind ceiling)
- Behind lab
- Behind chair (behind leg)
- Behind (behind)
- Behind (ceiling)
- Corps department (ceiling)
- More near hole (ceiling)
- Inside a hole but to the top-right, behind the barrier
- And the final Oscar...! Now that would be fitting.

CHEERS!

Many thanks to the dozens of you who sent in tips, tricks and solutions for Seymour Goes to Hollywood, especially Richard Baines whose solution I decided to use. If you have any tips or solutions which you think might be useful, send it in - we'll reward your efforts handsomely.

STORMLORD

Storm warning! Storm warning! This awesome CP42 Power Pack game ain't no breeze. But follow this complete solution and you'll be storming through it like lightning, or a Force 10 gale, or a... (yes, we get the point - Ed).

PART ONE

LEVEL 1



KEY

FAIRY

START



FAIRY

FAIRY

LEVEL 2



FAIRY

KEY

FAIRY

FAIRY



FAIRY

UMBRELLA

KEY

LEVEL 1

From the start, go left over the obstacles, rest for the need to loop out of the bag, then walk quickly underneath and collect the KEY. Go right and open the door, pushing the small worms which appear from the ground. Go right, use the springboard to descend and rescue the FAIRY, then use the adjacent springboard to get back. As you descend, you will collect the UMBRELLA. Carefully go right and descend using the springboard. Then carefully go right underneath the car clouds (you're safe as long as you have the umbrella). Shooting any dragons which appear, go right and collect the FAIRY. Then go back to the left, walk under the clouds, then use the springboard. Go left and swing the umbrella for the HONEY, then head right until you reach a key. Swap the honey with the KEY to adjust the beam (and get out of the way), then collect the FAIRY to your left. Make your way to the right, shooting any spiders which descend, then open the door and rescue the FAIRY. Transport using the springboard, then head right the center of the disappearing

platforms and collect the HONEY. Go left and swing the honey with the UMBRELLA (again, get out of the way before the beam arrives), then climb up and collect the KEY. Make your way to the far right and open the BOTTOM door to rescue the final FAIRY (don't open the top door - you'll lose the key and head to next again).

LEVEL 3

From the start, head left past the wood-pillar (Sovereign of The Disappearing Platforms) and collect the KEY. Go back to the right, shooting any worms which drop from the sky, then open the door and rescue the first FAIRY. Continue right to the far side of the level and collect the BOOTS (again, shoot any worms which appear). Go back to the left, and descend using the springboard (you see a moment ago, then head left past the spiky plants and worms until you reach the umbrella, the boots will let you jump over any unusually high obstacles). Swap the boots for the UMBRELLA, then use the springboard to your left. Rescue the FAIRY, then

head right and, shooting any dragons which fly onto the screen, stand on the red blocks to make them disappear. Swap the umbrella for the KEY. Go left, killing any dragons in the way, then open the door and use the springboard. Grab the FAIRY to your left, then use the springboard to your right. Carefully go right past the falling spheres, then use the springboard (you'll collect the HONEY as you fly up). Swap the honey with the KEY and grab the FAIRY to the left. Then go right, open the door and collect the boots inside. Go left a little and rescue the FAIRY at the top of the screen, then use the adjacent springboard to descend, now simply collect the FAIRY to your right to finish the level.



Join us next month for the second and concluding part of our epic collaboration with a comprehensive collection of PSXs, Xboxs, and even other things.



NOBBY the ARMADARK



light, crawling to avoid the rocks and bats, until the track levels out. Stay to about the exact middle creature, and then continue down to the



Watch the Boulder when it's moving to avoid gold bars.

It's been seven months since Nobby started his epic quest to reach Antopia. He's traversed broken railways, ballooned through canyons and even rocketed to Mars. And now, only one thing stands in his way...

LEVEL 7: ABANDONED ORE REFINERY

This is it: the last level, the final obstacle, the end, and thing, in the world of Nobby the Armadark.



Watch the Boulder when it's moving to avoid gold bars.



Jump over the barrier, then duck to avoid the bats.



PART 7

you'll be facing. Anyway, enough of the small talk... Armadark awaits!

From the start, take your way to the right and jump over the barrier, ducking as you jump in order to avoid the bats. (This takes lots of precision, then continue right until you reach a gold station. If you're not feeling adventurous, skip the next part. When the switch to move it, then head right up the slope. As soon as the Boulder appears, fly two levels at it. (You need to be looking to do this), while simultaneously moving back to avoid the monstrous sphere. If you managed to land the Boulder into a million pieces (yes or take a few thousand), continue right, jump over the barrier and collect the gold bar. Jump over the gap and collect the next few gold bars then carefully make your way back to the station, jumping over any obstacles on the way.

From here on in, it is essential to stay crouched to the ground and avoid bats. Make your way

up to a full station, but you'll have to make do without a map. As you will see, the way forward is a huge sprouting mass of caves and tracks that take up half the map if we tried to reproduce it as a map, but the guide dotted around this page should give you a fair illustration of the obstacles that

bridge on the river (Part 7 - 2). Jump the barrier, then about the low rocks opposite before jumping the gap. Now, staying crouched, make your way up the next slope. When you see the SECOND purple bat, a huge Boulder will loom towards you - deal with it in the same way as before (crouch and fly forward while moving away from it).

When you reach the junction, you can flip the switch to before and take the upper track to collect no less than seven lovely gold bars (as before, you'll have to negotiate your way backwards to the junction). But you can take the correct way and simply carry on over downwards.

When the track levels out, shoot any obstacles in your way and jump over the barriers and gaps as before. At the top of the next slope take another huge Boulder (you're probably expecting them by now) - deal with it before. From this point on, the track remains horizontal, and it's a fairly straightforward task to shoot in jump any obstacles in the way.

Look out for one final gold bar. Once you've collected that be prepared to tackle yet another



Watch the switch to check you're moving and get onto the top track.



Then take the abandoned cave entrance to take the low track.

one of those huge Boulders (which MUST be destroyed) if you want to finish the game - there's no avoiding this one! And then, just across the next gap in the game which contains Nobby's token to receive for it's.

So there you have it, game completed! Put your feet up and watch the Mileux and sequencia... (which are'te not going to give away here). That Nobby wasn't expecting that!



MORE POWER FOR YOUR NOBBY

what, no battery? In fact, this simple clear mode has all the benefits of an online level editor, almost all their customizable GEM statements and the powerful features that a GEM editor can bring. Do the like, well, simply type PLURRY GEM (without a space) into any text, the text will change colour, allowing you to save the game with more graphics than you can possibly see to see go!





CAST OF MONSTERS



SPINY SPITTER This appears regularly throughout the level, and comes in various guises, some just follow you, some spit, some spit and follow and some run rather quickly.



FLAPODACTYL Much the same as the vambone on earlier levels, but the birds on Cherrystone seem to swing a lot more than usual.



SPINY BLURRY JET Apart from your faster bullets, this little blighter also has the added protection of spikes, making him especially

difficult to kill.



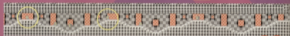
BALLOODACTYL A rather gentle kind, the Balloodactyl gets in the way, and can be charged through without any problems. Avoid jumping on him.



CANNONBALL As an previous levels, this is indestructible, and there are loads of them launching around the level. In the tunnel to the left of the level, there is a cannonball that fails to launch your path.



SPINER & MEEIA Despite the noisy names, this Meeia is virtually indestructible... the one weakness



HAPPY



EXTRA 1000

10 STARS

10 STARS



10 STARS

SCORE MULTIPLIER

is that you can change into the front of him (that's a pretty harmless, anyway).



RABBIT Again, if you're after the Super Star Bonus, avoid this horrid of traffic at all costs. There are a couple dotted around

the level, so take care not to touch them.



STEBOSMURF This Jumbot's head is cute, but deadly. The only way to kill it is to charge into the front like a train, but this

is tricky. Observe his rotating pattern, then charge at the right moment to obliterate the brute.



EXTRA LIFE

EXTRA LIFE HALF LIFE

10 STARS 10 STARS



10 STARS 10 STARS

EXTRA LIFE

10 STARS



10 STARS

EXTRA LIFE SHIELD



COMING YOUR WAY

MESSAGES FROM A PUBLISHER

Love the name, but I hope that's not true.

Easy, what's on the cover? "Right, we've got *Star Trek: The Motion Picture* as the main game — a great action puzzle — plus a load of Mayhem & Bionetics!" Sounds great, but were they too happy in a big way on this cover.



Right, Simon, start researching this ultimate puzzle game feature now — maybe every one you can get your hands on and recommend the top 25.

Okay, get on the case with those games. Sure we've already got *Escape* lined up by Irvine and a couple of reviews. But we need more. Don't leave to Europe and see what they've got to offer.

Make sure all those readers are up to the usual high standard.

COMMODORE FORMAT

CP46
June 1984

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MY NAME

MY ADDRESS

MAG*SAVE

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