

The Australian COMMODORE REVIEW

Vol 1 No4 June \$3*

Registered by Australia Post Publication No NBG6656

*Recommended retail price

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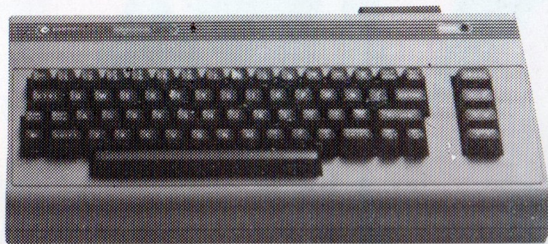
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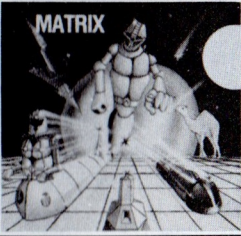
Cover Illustration:

Matrix game program by Llamasoft, distributed by Progressive Software. Package design by Denis Barwell of Copybook

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The Australian Commodore Review
Top Rear, 4 Carrington Rd,
Randwick, NSW 2031
Phone: 398 5111

Published by Saturday Magazine Pty Ltd

Publisher: Gareth Powell

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Typesetting:
Printaction Pty Ltd

Distribution:
NETWORK

Printed by: Ian Liddell
Commercial Printing

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Is it true that Commodore are bringing out a 1542? What of these rumours that the 264 and 364 have been indefinitely cancelled? The answer to question one is yes, maybe and I hope so. A conflicting reply to a simple question, perhaps because no one - not even Commodore - really knows.

Regarding the 264 and 364, you could hardly expect them to bring it out before Christmas with the 64 still doing so well. Jack Tramiel did announce the machines a little before most of Commodore management would have liked. As a result the latest press releases may be an effort to put the public off the scent long enough to let the new Mr Commodore reorganise things.

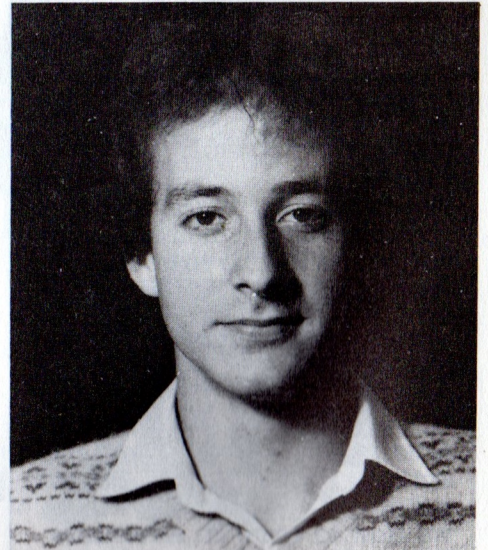
Now I've got that off my plate, what's inside this issue? Last month's cover was some indication of the direction we've decided to take, and hopefully this month reflects that even more. "Hot Stuff" is

one of our new regular columns. In it, as the name suggests, you'll see all the latest in hot new games, and there's plenty of them.

For the technically minded or those who hope that one day they will be, check out "Tech Tips". Descriptions of what goes on inside your computer start the ball rolling, with future plans for do-it-yourself add-ons and lots more.

Is it raining wordprocessors or am I just discovering the range that's always been available? This month we take a look at an oldy and a newy, for those still deciding which one to buy. Also watch out for Wordcraft, it sure looks set to cause a storm.

Vic 20 users have complained that we are not supporting them too well. Fair point. Perhaps someone out there amongst the 100,000-odd Vic owners would be interested in helping out by providing material for us to publish.



Gripes aside, I'm sure you'll agree this issue is a further step forward to becoming a very useful magazine for Commodore owners.

Andrew Farrell

Write Now!

for the C-64

PROFESSIONAL WORD PROCESSOR

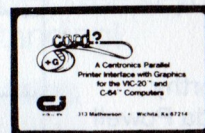


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RAM RUMBLINGS

Wordcraft romps in

At last it looks as if Easy Script's days may be numbered. After much success on the larger Commodore systems and more recently on MS-DOS machines. Wordcraft is now available for the Commodore 64 for a very reasonable \$99.

Its professional finish and compatibility with a list of printers longer than your arm will be enough to give it the kick needed to topple existing leaders. Features include on-line help menus, printer definition files, full colour control and very polished disk handling.

Watch for a full review next month. For further information contact Padmede on (02) 923 2899.

Royal read errors?

Commodore Business Machines in the UK recently became the first manufacturing company to be granted the Royal warrant of appointment by Her Majesty the Queen of England.

What does this mean? Well, the prestigious title – "By appointment to Her Majesty the Queen, manufacturers of computer business systems" – can go up at Commodore Australia as an internationally accepted symbol of quality and excellence.

From this day on, every flash of a drive light, every load error and every sprite sparkle will have royal recognition.

Turbo cassette loader

Many Vic owners may remember back in the early days when RABBIT Software released a cartridge which increased the speed of cassette operation. Since then we have seen several improvements on that original idea, right up to the Arrow cartridge reviewed in this issue.

German programmers have taken it one step further with the release of a turbo loader which is not hardware based. In other words, it loads up as a program which then increases the rate at which information is sent and received from cassette.

Programs such as The Hobbit and Revenge of the Mutant Camels will use this loader to decrease waiting time to the same as that for the disk. Reliability may be a bit of a problem on some cassette players, although the test run we made on one of the office machines (which had a chair leg slammed through its centre on one occasion) worked fine.

Several software houses are promising to use the turbo loader on future software releases, so long as the cassette duplicators can maintain existing quality levels.

Speeding up your disk drive

Since the second issue, when we mentioned the possibility of speeding up the 1541 disk drive, we have

received many phone calls and letters regarding this subject.

A User Group on the Gold Coast were the first to head us in the right direction and eventually a gentleman contacted us with some interesting information.

He spoke of a program called "Disector", which is actually a disk copy program that backs up a disk in three minutes flat. Formatting takes a little over 11 seconds and the program also reproduces most disk errors. (Used in protection.)

A quick calculation reveals that three minutes to backup a disk is a huge improvement in speed compared to the usual time of 27 minutes (almost a factor of 10).

What this means is that we are close to a program which, once loaded, will allow users to access disks in far less time than at present. However, as with the cassette turbo loader, reliability is lost and on some systems "Disector" simply did not work.

Interested persons will have to write to the US to get a copy of this useful utility, which will back up most programs including Easy Script.

So far as hardware modifications go, Richvale Telecommunications of the US have developed a cartridge which increases speed on the 1541 by a factor of two to three times. Cybex computing in Adelaide distribute the unit, which plugs directly into the expansion port and also requires wire links inside the 64.

Next month we may have a bit more information about this add-on, as it looks to be the most promising so far.

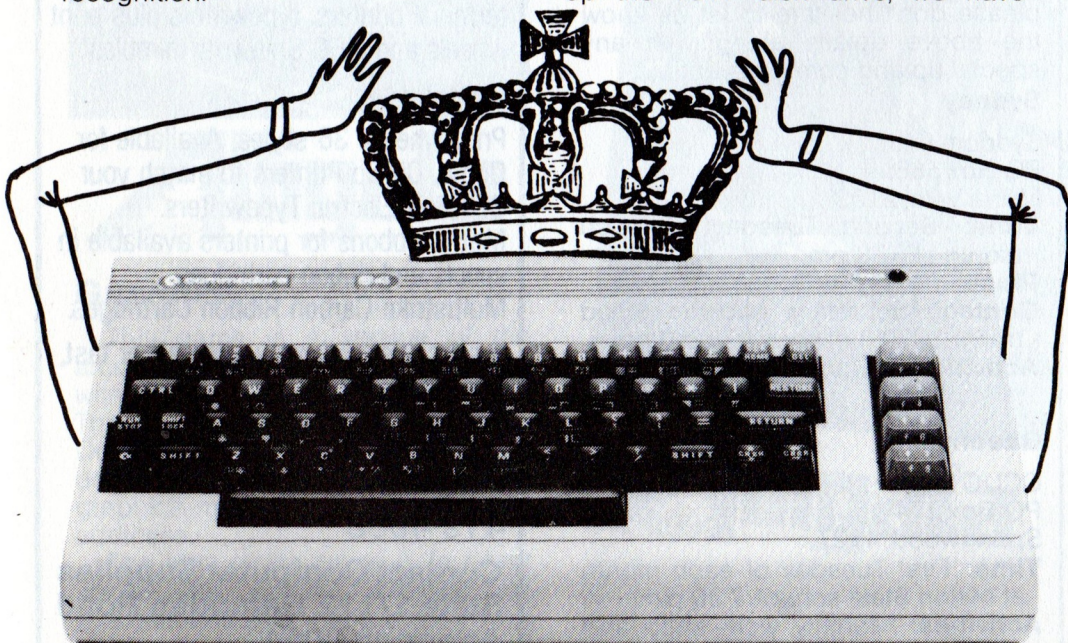
Easy Tunes from Easy Script

Owners of the earlier versions of Easy Script will be pleased to know they can enjoy a little light relief whilst waiting for inspiration. Try pressing Function one followed by Control three.

It's amazing what programming will add in a brief moment of madness.

Data 84

This year's Data 84 made ZORK look like child's play, with a new layout designed to ensure every exhibitor would receive equal passing



Now available, quality

VIC-20

enhancements

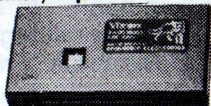
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RAM RUMBLINGS

trade.

A great concept, but in practice it caused more problems than it solved. Many visitors only went part of the way around the winding course, thinking the exhibition was finished or that walking any further was not worth the effort.

If you had the luck of being on a stand, getting lunch was a major exercise. Perhaps the organisers should consider providing better directions for visitors as well as special short cuts for exhibitors.

Commodore had nothing amazingly new to display, although the long existing rumour about a new machine called the Commodore PC (the HYPERION under a new label) continued to flourish.

Hyperion's Australian distributor strongly denied the idea of Commodore marketing their computer, although certain facts appear to suggest otherwise. The computer in question is an IBM compatible, which after having several unnecessary components removed or com-

pacted should be a little cheaper than the existing price of \$5995 including software.

Nigel Shepherd, Managing Director of Commodore Australia, assures us the Commodore PC will be here as soon as possible and that it is in fact the same computer which did well in the APC awards earlier this year.

Well, time will tell.

Sales rise 72%

Commodore recently announced another record quarter both in Australia and internationally with sales of US\$326 million - an increase of 72% from last year's figure of US\$189 million. Locally Commodore dominates the home computer market, with over 100,000 Vic 20s and 80,000 Commodore 64s sold since their release in June last year.

Surely they can now afford to spend some money on ensuring they keep the users they've got? □

User Group Grapevine

Ever wondered how you can get access to all that public domain software everyone keeps talking about? A good start is to join your local user group. Where they meet and whom to contact will now appear regularly in the following column. If you run a User Group please don't hesitate to let us know the above details along with any special up and coming events.

Sydney

Sydcom 64,
PO Box 586,
Mona Vale, 2103.
Time: Second Tuesday of each month at 6.30 pm.
Place: YWCA (4th floor).
Contact: Secretary, Michael Stead on 99-3370 (between 4 and 6 pm.)
Activities: Monthly newsletter - "Peripheral".

Queensland

CCUG (Q),
PO Box 274
Springwood, 4127.
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HOT STUFF

Son of Blogger

Ozi Soft will soon be releasing a whole new range of games. The first and probably the best of these is "Son of Blogger". This game is the sequel to Ozi Soft's currently available game "Blogger".

The game involves collecting keys, jumping huge boots, climbing ladders, avoiding ghosts and all sorts of nasties in your quest to get home (something that even after hours of playing I still cannot do).

Son of Blogger is different from all other games in the fact that it has no separate screens. Only a small section of the playing area is visible at any one time and this scrolls as you move. Overall an excellent game at \$24.95 cassette, \$29.95 disk.



Guardian

This game is a version of the arcade game Defender, complete with Baiters, Bombers and mutants. The game is exactly the same as Defender right down to the last detail. Fast action and brilliant graphics make the game incredibly addictive.

The idea of the game is to hover above the planet, shooting all enemies and attempting to save your own men which the mutants are

constantly trying to steal. Certainly a game for those who like fast action - it's just as fast and hard as the one in the arcades.

Guardian sells for \$19.95 on cassette and \$24.95 on disk.



Panic Planet

A version of Apple Panic for the Commodore. For those of you who don't know the game, it involves climbing ladders and digging holes for the aliens to fall in. Once the alien is trapped in your hole, you must bury him again in order to kill him.

A game that requires more thinking than most. The graphics and sound are good and make the game quite enjoyable.

Once again \$19.95 on cassette and \$24.95 on disk.

Loco

Loco is one of the most original games I have seen for the Commodore. The graphics and sound are incredible and the game is quite challenging.

The screen is split into two halves and it's important you watch both. On the top of the screen is your train, complete with passing mountains, trees and stations and on the bottom is your radar. You can change tracks at any time in order to collect fuel, but must watch the top for approaching planes, which can be shot with puffs of smoke.

Loco has nine speed levels (level one, the slowest, is still quite a challenge) and very professional graphics and sound. The game will sell for \$24.95 on cassette and \$29.95 on disk.



HOT STUFF



Eagle Empire

Again a copy of an arcade game, this time Phoenix. The game is one of

the first of its type on the market. The first two patterns resemble a Galaxions type of game, with dropping aliens which you must shoot out of the sky before they bomb or run into you. You are also equipped with shields which fend off bullets and kill any aliens you may hit.

The third and fourth screens provide a bigger challenge, with huge birds swooping down at you which only a direct hit can kill. Hitting one of these birds on the wings results in a loud shriek. This disables the birds but fails to kill them.

If you are spending too much money playing the arcade game you could make a fairly shrewd investment with this one.

Killer Watt

An original game with good graphics and equally outstanding music. You must guide your ship through the caverns and shoot all the bombs to gain points.



The game is unlike others in that you can turn your ship around and go back along to a spot where you may have missed a bomb.

Look out for jumping dolphins, killer whales and deadly chickens. \$19.95 on cassette and \$24.95 on disk.

All the above games were produced by Alligata in Great Britain. Let's hope they keep up the quality we've seen so far. □

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For details of the fantastic PRINTRON interface see page 6

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Write Now

Review by Andrew Farrell

New wordprocessing programs are appearing almost every month, gradually crowding what looks set to be a very competitive market, as one of the more popular uses for a home computer.

Up until now, most of these packages have been disk-based. Interestingly, Easy Script was designed to be on cartridge, but as we all know, probably never will be. Thus a large gap exists, filled with cassette users who would love to own a decent wordprocessor.

"Write Now" is the program which looks set to fill this gap. The program comes complete with a useful manual, cardboard keyboard overlays and cartridge for \$99. Cassette users, here's your chance.

Starting up

Ever waited for a good lengthy program to LOAD (click, whirr) and you'll understand the many advantages of a cartridge. Place it in the expansion slot, turn on the 64 and you're away.

A very impressive opening display, with the usual offending credits, starts the show. Then as usual we are tossed into edit mode ready to go. In this case, the landing isn't so hard. Press Function Seven and up jumps page one of the four help screens.

These contain a brief summary of the editing keys, a complete list of the print controls plus an explanation of how to use some of the nicer features of Write Now. Unlike Easy Script, there are a few more keystrokes to learn, but with help from our friendly keyboard overlay, the old memory doesn't have to work too hard.

For those of us who like to hear what we type, a small beep follows each keystroke with a variation in pitch for nasty keys such as delete. Speaking of deletes, characters removed are placed in a buffer or temporary sewer pipe, from which they may be retrieved if you decide that last sentence wasn't so bad after all.

As text is entered the current line remains in the screen centre

highlighted in white. The remaining text is a darker colour and scrolls up and down the screen using the usual cursor keys.

Several preset screen/border colour combinations provide alternatives which are more suitable on a monitor or black and white television. A status line at the screen bottom displays the current cursor position, free memory and insert mode condition. Overall the layout was fairly pleasing and easy to use.

A joystick may also be used to move the cursor about, which is a great help if you happen to have one handy.

80-columns

The next bit I really liked was the 80-column print mode. This feature enables us to view our text on the screen in 80 columns before we print it out. Instead of output going to the printer it is sent to the screen. The exact layout of our letter or document is then visible.

It would be better to be able to pause the printout while it is occurring, as everything tends to scroll by just a little fast. Nonetheless it is a worthwhile addition to the program and is very useful where formatting is critical.

Write Now word processing package includes - cartridge, manual and two keyboard overlays



Menus

Three menus provide control over disk access, device numbers and printer parameters. These make altering the standard values very easy, with no need to include any obscure control codes in your text.

For those codes which are necessary, a dot prefix followed by two letters sets things such as justification, page numbering, margins and text widths. A list of the relevant codes is part of the help menu, which is a great memory jogger.

A disk directory may be obtained very easily at any time by pressing CTRL and 9 together. Unfortunately error detection when using the disk commands is not too crash hot.

A useful list of printer codes for dot matrix and letter quality printers is included in the manual, as Write Now works on most printers. It also interacts fully with the Cardco G+ centronics interface.

Computer Technics will shortly be releasing three other complementary programs called "Graph Now", "Spell Now" and "Mail Now". Initially these will be available on disk, although hopefully we will also see them on cassette.

Our review copy came from Computer Technics, the Australian manufacturers of the package. Ozi Soft will be distributing the program Australia wide.

All Matrix pilots - report to paragraph one for combat training

by Scott Wilcox

No doubt nearly all our readers have played or seen the brilliant game "Matrix" by Jeff Minter (for those who haven't, life must be frightfully boring). Many an inexperienced zone gunner will have been lost in the hands of the merciless invaders.

Destruction can be overcome or at least temporarily postponed as Matrix pilots discover the tricks of the trade. These can only be learned by constant months of slaving over a hot joystick. Or can they?

Matrix, the initial cause for the invention of aspirin, will now be systematically ripped to shreds before your very eyes. This is an account of the information gathered while sorting through the rubble. Nothing is filed away under "Top Secret".

For the curious

Although many Matrix pilots have insufficient capabilities to see beyond the first zone, they still have the power to see the rest of the 20 zones without so much as lifting five fingers (we will use four to be exact).

While the game is in motion, ie your ship is visible, you can press a combination of keys that will have the same effect as if you shot all the aliens in that zone. You must hold down these three keys in this order (they are next to each other). The keys are the Commodore key, shift, and the "Z" key. While holding these press control "CTRL". Zap, fizz, bang, the zone is cleared!

There are many things to watch out for on the zonal grid. These are the X,Y Zapper, advancing caterpillars and the arrows that they fire, time bombs created by the X,Y Zapper and the bullet reflectors. Avoiding these objects is a full-time job, but a few hints might help amateur pilots.

The X,Y Zapper

The X,Y Zapper is the two ships which move along the bottom from left to right and at the left-hand side in a downward direction. After a certain interval the bottom ship fires a beam to the top of the screen which is easily seen. The left ship of the Zapper fires a single bullet that is very hard to see as it is lightning fast. Where these two meet a time bomb is formed. This time bomb develops gradually, and it goes through six stages until it drops as an arrow. While the time bomb is developing, your ship can touch it, but cannot go through it. The only way to avoid the Zapper is to study its movements and eventually learn the pattern it goes through.

After zone two, you will notice a small man at the top of the screen. He is actually homing in on your ship and gives your position to the Zapper. If you choose to sit in one place for too long, the man will home in and with the next run of the Zapper you will surely die. Be sure you keep track of the position of the bottom Zapper and move as it is about to shoot you.

As the zones get increasingly difficult, the man moves at a greater rate, just to make things difficult.

To see the left ship of the Zapper fire its bullet, you can pause the game. This is done by pressing the Commodore key and the RUN/STOP key simultaneously. Pausing the game is especially helpful in the later zones.

Worms

The caterpillars, or whatever you wish to call them, have amazing powers. They are made of segments. As the zones progress, the number of segments increases, as does the number of caterpillars. Each caterpillar is made up of a head and the

other segments are the body. If you shoot the caterpillar in the head it will grow a new one and turn around and go the other way. If you shoot it in the body it splits into two and the back section grows a head to form a totally independent caterpillar.

The easiest way to destroy the caterpillars is to follow them across the screen while continuously firing. Because your ship is faster than the caterpillar, you catch it from behind and gradually remove it, tail first. This is important as the caterpillar will not change direction and the creature is at your mercy, which undoubtedly will prove fatal for it.

In zone 7, you will encounter the first of many caterpillars that enter the screen and move diagonally down and back up, just like the horizontal caterpillars that reach the bottom. The method for destroying these little beasties is to go to the edge of the grid, usually on the right, and just under where the caterpillar will bounce off. As it approaches, start firing and slowly move down at the same rate as it does. This, when done correctly, will eliminate every second segment of the caterpillar, and the remaining segments will turn into heads. Now you can singularly remove each head from the face of the earth (not for the lighthearted).

Just a word of warning about your first attack on the caterpillar. While you shoot it and move down it usually fires an arrow at you, which is hard to see with all the confusion.

Of llamas and deflectors

In zone 3, you will have your first encounter with the llamas. A unique feature of this zone is that your score goes down while there are llamas on the grid. When you shoot a llama, you receive 106 points (must be Jeff Minter's lucky number) as you will plainly see on the grid.

Zone 4 packs a few surprises for

the amateur pilot. There are bullet deflectors located in the centre of the screen. If you shoot one of these your bullet bounces off and the deflector turns so that the next bullet will bounce off in a different direction. In the later zones, a new addition is seen on the grid. They are small round objects that work like the deflectors except that they send the bullet back where it came from. In other words don't shoot it at point blank range and expect to live. Steer clear of all the reflectors and deflectors.

Continuous play

This is just a little bit of cheating I discovered, mind you, not by accident. When the game has started press RUN/STOP and RESTORE and the screen should display "ready".

Now type:

POKE 33049,1 and press RETURN

then type:

SYS 32768 and press RETURN

This will change the game and restart it, but I'll leave you to see the result.

I'd be interested to hear of your high scores on Matrix or any other games for the 64. If you want any game in particular to be dismantled, please don't hesitate to drop me a letter. (The address is on the inside front cover.)

By now you should be a bit better prepared to face the foes of Matrix for just a little longer.

ALL MATRIX PILOTS... REPORT TO
JOY PORT ONE FOR COMBAT
DUTY...

The Pit

reviewed by Michael Stead

Visual and audio appeal *

Game interest **

Sustained interest *

Could it be said that this new game is the "Pits" of the game market? The Pit, as the game is known, is produced by HesWare, and distributed in Australia by Imagineering. It is based on Centuri, an extremely popular arcade game with great graphics and sound. The only problem is that it seems to lose something in the translation (quite a bit in fact).

The idea is to penetrate the depths of the underground, make your way through the mine, pick up at least one large diamond and get back to your ship. To escape, you must run across a force field without getting eaten by a pit monster.

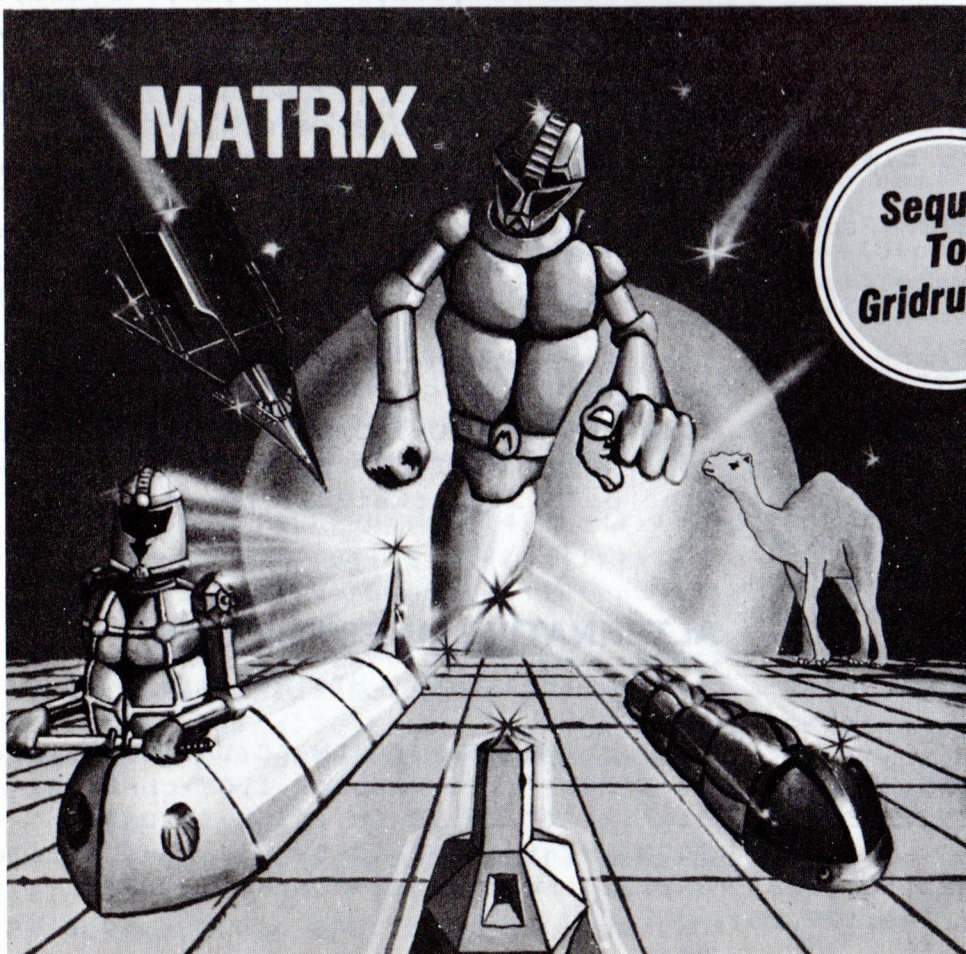
While you are in the pit, there are a number of robots chasing after you, and there are also some rather amazing rocks that have a tendency to fall on you if you happen to tunnel under them.

While you attempt to retrieve some diamonds, a hostile tank is in the process of steadily shooting down a mountain. If your man cannot escape the mine in time, the mountain will have been removed, and your spaceship will fly off in disgust.

Now, my criticisms. The mechanics of the game are fairly good, but the main area where the game falls down is the graphics. The character set is almost straight Commodore, with minimal reprogramming. The screen is filled with little chequered things in a rather nondescript mess.

Also, there is very little variation between frames, the only difference being the speed of the robots and their tank. The scenery remains the same. After a few games, you develop a pattern that will get you through the frame without any undue brain usage (like thinking).

Well, what more can I say except that it certainly won't sell a million? Price from most Commodore dealers is \$49.95.



Cavern Blaster

Vic 20 Game

by Andrew Farrell

Last week, whilst sifting through some old disks, I stumbled across a program I wrote some time ago for the Vic 20. It's based on the once popular game Scrambler, where you are invading an underground space complex armed with the usual array of lasers and bombs.

This version just fits on the standard Vic, but not without a little squeezing. When entering the program it will be necessary to crunch some keywords for certain lines to fit. For a full list of these

abbreviations, look at page 133 of your user manual.

Entering

Type in the first program (loader) and save it to disk or cassette under any name you like. Be sure to replace lines 1000-1020 if you are using disk with the alternative listing just below the loader.

Next type in the main program and if you are using disk be sure to save it under the name "cavern blaster 1.0". Part I loads in the character set and protects it from being destroyed by Part II. Part II is the actual game itself.

Before entering either program, have a quick glance over the notes on entering programs which appear elsewhere in this issue.

Playing

The game will start at the press of a key. You are the ship on the far left of the screen. Use the "A" and "Z" keys to move up and down respectively. "K" will drop a bomb whilst "L" will fire your laser.

As the game progresses your ship will move forward, the cavern will become narrower and various enemy bases will appear for you to bomb.

A good score is around 1100, so let us know how you fare.

LOADER

```

10 :
20 :
30 rem cavern blaster
40 :
50 rem (c)andrew
60 rem farrell
70 :
80 open2,2,2:poke36869,255:poke36879,8:p
rint"(CLR){WHT}{RVON} cavern blaster !
!"
85 fori=7168+(32*8)to7168+(32*8)+7:pokei
,0:next
90 print"(C/DN)(C/DN)(C/RT)(RVON)(C/DN)(
GRN) by andrew farrell"
92 print"(PURP)(C/DN)(C/DN)(C/RT)(C/RT)(
RVON) please wait..."
94 print"(C/RT)(C/RT)(C/DN)(C/DN)(C/DN)e
(C/DN)(C/LF)(C/LF)(C/DN)(GRN)(C/DN)h(C/U
P)(C/UP)(C/UP)(C/UP)(C/RT)(C/RT)(C/RT)(C
/RT)(RED)f(C/DN)(C/DN)(C/RT)f(C/RT)(C/RT
)(C/RT)(C/RT)(C/RT)(C/RT)(C/RT)(C/DN)(WH
T)q(C/DN)(C/PT)q":print"(C/DN)(C/DN)(C/D
N)(C/DN){WHT}bbbbbbibbbibbbgbbgbbb"
100 t=7168
110 reada:ifa=999then1000
120 poket,a:t=t+1:goto110
200 data0,0,0,0,0,0,0,0,255,255,255,255,
255,255,255,255,128,201,223,255,255,255,
255,255
210 data255,255,255,255,255,223,201,128,
0,0,0,0,0,0,0,0,192,192,192,248,199,25
5,248
220 data71,69,109,255,255,109,69,71,2,18
,10,78,126,12,12,255,0,0,36,60,24,60,60,
24
230 data24,60,102,110,102,60,102,255,1,3
,119,191,255,126,31,7,16,59,85,234,85,59
,16,0
240 data137,32,88,157,60,42,128,9,16,66,
8,144,64,8,34,0,0,8,64,0,4,0,32,4
250 data0,0,32,0,64,0,16,0,96,151,136,18
5,205,71,76,185,31,9,15,25,255,127,9,31
260 data4,126,78,126,78,78,81,255,28,62,
65,42,28,8,8,20,24,60,36,60,36,60,36,255
270 data0,0,0,0,16,60,254,255
290 data 999
1000 print"(RVON)(CLR){WHT}loading main
program"
1010 print"(RVON)(C/DN)(C/DN)(C/DN)":pok
e631,76:poke632,207:poke633,13:poke634,8
2:poke635,213:poke198,6:new
ready.

```

ALTERNATIVE LINES FOR DISK

```

1000 print"(CLR){WHT}(RVON)loading main
program"
1010 print"{BLK}(C/DN)(C/DN)(C/DN)load"+
chr$(34)+"cave blaster 1.0"+chr$(34)+",8
":print"(C/DN)(C/DN)(C/DN)(C/DN)run"
1020 print"(HOME)(C/DN)":fori=631to636:p
okei,13:next:poke198,5:new
ready.

```

CAVERN BLASTER

```

0 goto3000
1 print"(HOME){RVON}{WHT} score:"sc:retu
nn
2 k=p+1:bb=240
3 ifpeek(k)=0thenpokek,173:k=k+1:forde=1
to2:next:pokes2,bb:bb=bb-5:pokek-1,0:ifk
<p+6then3
4 pokes2,0:ifpeek(k)=0orpeek(k)<6then3
5 sc=sc+peek(k)*10:forz=250to200:pokes1,
z:next
6 pokes1,180:vv=15:forz=1to4:pokek,e(z):
:poke36878,vv:vv=vv-.18:next:pokek,0
7 pokes1,0:return
8 fori=200to186:pokes1,i:next:pokes1,0:r
eturn
9 ifpeek(bp)>2thensc=sc+peek(bp)*2 :fori
=240to190step-5:pokes1,i:pokebp,e(5-int(
(i-190)/10)):next
10 pokes1,0:pokeob,0:pokec1,1:pokebp,21:
pokebc,1:bm=0:bp=0:ob=0:gosub1:return
100 ifpeek(p)<>0thengoto4000
101 pokep,5:pokep-1,0:pokepc,1:bt=gp+rt:
ifle>1therfori=ttot+(rt*22)step22:pokei,
1:next
102 ifbm=1thenpokebp-23,0:pokebc-23,1:if
peek(bp)<>0thengosub9
105 fori=t+(rt*22)tot+(bt*22)step22:poke
i,0:next
110 fori=t+(bt*22)tot+(22*22)step22:poke
i,1:next
111 op=p:cc=pc:getr#:ifr#="a"thenp=p-22:
pc=pc-22
112 ifr#="l"thengosub2
113 ifr#="z"thenp=p+22:pc=pc+22
114 aa=ga+1:ifaa=10thenp=p+1:pc=cc+1:aa=
0:nn=nn+1:ifnn>12thenpc=pc-1:p=p-1
116 ifr#="k"andbm=0thenbm=1:bp=p+22:bc=p
c+22
118 ifrnd(1)>.75thenaa=int(4*rnd(1))+2:p
oket+((rt+aa)*22),p(int(1e*rnd(1))+1)
119 ifrnd(1)<.25thenbi=o(int(1e*rnd(1))+
1)
121 ifbm=1thenpokeob,0:pokebp,8:pokebc,5
:pokec1,1:ob=bp:ci=bc:bp=bp+22:bc=bc+22
125 cc=cc+1:ifcc>30thenc=0:gp=gp-1:ifgp
<6thengp=6:bc=ba+1:ifba>1thengosub5000:1
=1+2
126 sc=sc+(10-gp)
127 poke t+(bt*22),b1:b1=2:ifle>1thenpok
et+(rt*22),3
129 pokeop,0:sys 848:p6=p6+1:ifp6>120th
enle=le+1:p6=0:ifle>4thenle=4
140 rt=rt+int(3*rnd(1)-1):ifrt<2thenrt=2
142 ifrt>10thenrt=10
150 goto 100
222 ifbm=1andpeek(bp)<>0thengosub
4000 poke36877,180:vv=15:fork=1to80:poke
p,e(int(k/20)+1):poke36878,vv:vv=vv-.18:
next:gosub8500
4005 ma=ma-1:ifma=0thenprint"(HOME){RVON
}game over sc="sc:forde=1to2000:next:ma=
5:goto8015
4010 gosub1:n=0:p=7680+14*22+5:pc=38400+
14*22+5:poke36878,15:poke36877,0:goto802
0
5000 fory=1to3:forx=200to160step-1:poke3
6874,x:nextx,y:sc=sc+1000
5010 print"(RVON){WHT}{HOME){C/DN}{C/DN)
{C/RT){C/RT} bonus 1000..":poke36874,0:
return
7000 m=848
7010 reada:ifa=999thenreturn
7020 nokem,a:m=m+1:goto7010
7050 data162,23,189,0,30,157,255,29,189,
0,150,157,255,149,232,208,241,162,0,189
7060 data 0,31,157,255,30,189,0,151,157,
255,150,232,208,241,96
7070 data162,255,169,0,157,0,30,157,0,31
,169,1,157,0,150,157,0,151,202,208,237,9
6
8000 rem
8010 open2,2,2:e(1)=12:e(2)=13:e(3)=14:e
(4)=15:poke650,255:poke36878,15:s2=36876
:ma=5:gosub7000
8015 p6=0:sc=0:le=1
8020 p=7680+14*22+5:pc=38400+14*22+5:for
i=7168+32*8to7168+32*8+7:pokei,0:next:bm
=0
8039 t=7680+21:rt=5:gp=12:sys 883:poke36
879,8:z=7168:poke36869,255:gosub1
8080 s1=36877:o(1)=7:o(2)=9:o(3)=18:o(4)
=20:e(0)=16:p(1)=6:p(2)=10:p(3)=17:p(4)=
11
8099 goto 100
8500 d=p+23:dc=pc+23
8510 ifpeek(d)<>0thenreturn
8520 poked,19:od=d:d=d+22:pokedc,1:dc=dc
+22:forde=1to200:next:pokeod,0:goto8510
49000 data 999
ready.

```

Story machine

Reviewed by C.J. & J.M. Binstead

“Story machine” is an educational program suitable for anyone who can or who wants to read and recognise words. It is entertaining for a large range of users, catering for the little preschooler who says “make the flowers sing again, mummy” and the adults who want to fall around after seeing the fence kiss the dog.

Hopefully the adult audience would soon become bored and let the littlies get on with their learning.

I can see the greatest benefit being derived from this program by preschoolers. They could begin with their parents reading and typing for them, and gradually take over themselves as the association between words and pictures grows.

Small vocabulary

The vocabulary of “Story Machine” is not large, 40 words plus the names of your characters. If you are ever lost for a word (or can't find one that the computer recognises) there is a list in the manual or you can select to see the dictionary on the screen at any time.

The dictionary doesn't beat about the bush when listing words in categories. They are all labelled “nouns”, “prepositions”, etc. So a switched on Mum or Dad could point out these subtleties to their primary schooler.

By this stage the fact that sentences have to be typed in correctly with a verb in the middle and a full stop at the end has already been drilled in almost by default.

At least two words most people would assume to be necessary in the vocabulary are missing. The sentence most of us would type in is “THE CAT SAT ON THE MAT” but this is not possible as ‘sat’ and ‘mat’ are not included as words recognised by the computer.

Five options

There are five options to choose from. The first – Watch a Story – may be used as entertainment for those who cannot or don't want to type in their own stories.

Adverbs, nouns, verbs etc are selected at random and this results in such nonsense sentences as “Sometimes dogs zot apples”.

“Zot” is a little science fictionish –

this is the means by which a lot of things can be made to disappear from the screen. Fortunately humans can't be zotted too well.

If the machine is left to its own devices in this option for about 10 seconds after the end of a story, a new story will be started. The stories vary in length, sometimes just longer sentences and other times more sentences.

Sometimes the computer tells you it doesn't know what word to put next. This is a wonderful opportunity for the young mind (or the “old” mind) to let their imagination run wild.

The creative youngster will not become bored if the possibility of taking over the story from the computer is pointed out.

The text is visible five lines at a time on the screen and the beginning of the story is scrolled underneath to be replayed at a later time. Words that are too long are moved to the next line so that only whole words are displayed.

As another aid to learning the option for taking turns to write the story may be selected. “MY TURN”, “YOUR TURN” appears on the screen prompting the typing in of alternative words by computer and user.

Any type of sentence, nonsense or otherwise is acceptable.

The only restriction is that it is a correct sentence and uses the correct tense.

Be nice

It is thus possible to have boys kissing trees, houses walking, dogs singing, rocks jumping, rocks eating trees and so on. It is not possible to eat or harm humans and other animals because it is not nice to do these things.

When an object or a living thing tries to eat another animate object, “ouch” appears on the screen but the living things do not disappear from the screen. Apples and other things without feelings may be eaten or zotted and so be wiped from the screen.

Once animate objects are on the screen it can get very cluttered and you may get the message that there are too many characters on the screen or in the story.

Write your own story

If option 3 is chosen you can write



your own story. Once again nonsense is accepted by the program but some very sensible and rewarding stories can be created. For example “THE BOY RUNS TO THE STORE. HE EATS AN APPLE. HE SINGS NEAR THE TREES”.

At any time you have access to the dictionary, to replay your story and to save the story. Stories can be saved on disk or tape.

Care must be taken when using the disk drive – the only error reported is if the device is not present. No other disk error checking was evident and a child could think his work of art was saved when in fact there was no disk in the drive! Saving on tape is worse.

If you select T for tape, it had better be there otherwise the program locks up and can only be recovered by powering down and losing the story.

Name characters

More personal stories can be created by first selecting Option 5 which allows the child to give the characters names. The names assigned are even used when the computer writes its own stories. A very nice touch.

Colour, graphics, animation and sound are all used to advantage in this program and this is a big plus for young audiences. It holds their attention and stimulates their interest.

Every time a noun is typed in it appears on the screen and every time it moves, a few bars of its tune are played. All the nouns can sing an appropriate tune - houses sing "There is no place like home". One unfortunate drawback to the display is that an inherent fault with the C-64 becomes annoyingly apparent in the text portion of the screen - a good case of the "flickering pixels".

Entertaining toy

"Story Machine" is a pretty good attempt at an all singing, all dancing, user-friendly, entertaining, educational toy that should provide many hours of enjoyment for any youngster lucky enough to have access to it.

It could also prove useful in a small group situation in schools either as a stand alone exercise or as a reward for finishing other work.

The copy tested was a cartridge version for the Commodore 64 (literature suggests that it is also available for the Atari).

This system is quick and convenient and requires only a minimum of equipment, the Commodore 64 and a TV. It is only necessary to have a dataset or a disk drive if you want to save stories.

All in all this type of program would seem to be infinitely more preferable than the usual run of "snail trail" time wasters that are being foisted on unwitting children and educators lately. □

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64
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VIC 20

BIG

LITTLE BITS



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THE MAT OS 2081 APC

Printing on

by Andrew Farrell

Hands up all those who wish they could make a bit more sense out of their printer manuals. Come on. All of you.

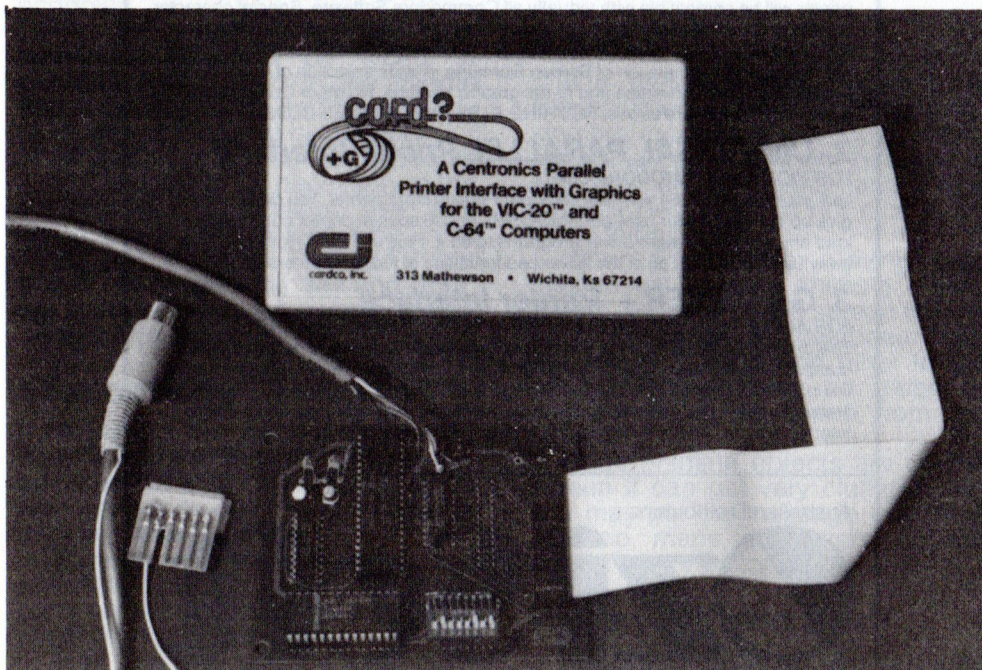
OK, hands down. We all agree that our printer, be it an Epson, C-Itoh, MX-80 or even a humble 1525 or MPS801, deserves a little more attention than it is currently getting. At present there also exists a problem with how to list programs in a way that everyone will understand.

Do we enclose all those nasty control codes or cursor symbols in funny curly brackets? Most will answer with a big yes, but whose standard do you use? Mine? Yours? Or perhaps the one your interface already produces.

Which brings us to another question. How do you add a printer? By which interface and for what cost? Being a graphics orientated computer, will you want to be able to print pictures or diagrams? And if your printer already can, do you know how to make it do it?

There are plenty of topics for us to cover in this column over the following months. In most instances I'll also be including an interesting program for you to type in and use.

The Cardco G+ interface - out of its shell



Which printer?

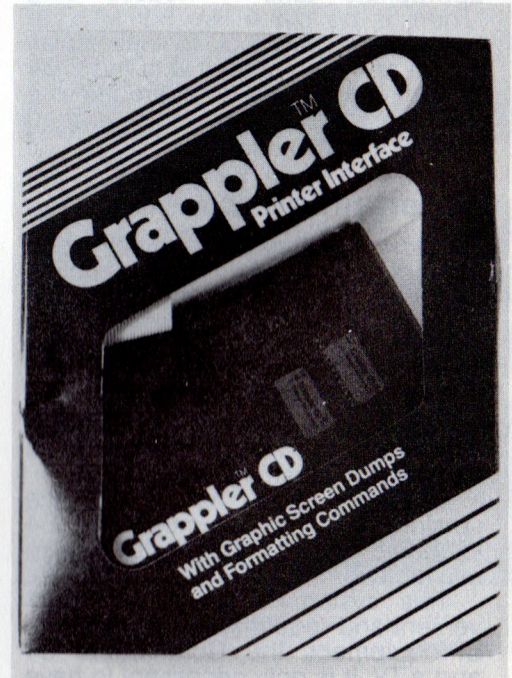
So far I've assumed you already own a printer and are aware of the problems which may arise in using one. But most of you, with tax return in hand, have probably just reached the stage of considering which one to buy.

We don't have room to go into an in-depth review of everything that's available, so let's just summarise the possibilities.

Commodore provide several inexpensive printers which are good value for money and generally provide a cheap way to get started. More recently they released a daisy wheel which may be a good alternative to something like the Brother HR-15 although that, as Bob Drew kindly explained, is yet to be proven.

For a little more quality than the standard Commodore printer, you may opt to get a 1526, if you can find one. There are, as many of us well know, some problems with this printer. It simply refuses to work just a little too often. (We may shortly see the 1526 re-released under the new name MPS 802.)

So, Commodore don't really provide a reliable good quality dot



Grappler Centronics interface

matrix printer as yet. By the way, "dot matrix" refers to the way each letter is produced by printing a series of dots which in turn form a complete character.

Alternatives

Alternatively, using some kind of interface it is possible to connect any one of a very large variety of printers. The main problem arises in deciding which interface to use.

The Commodore supports both RS-232 and Centronics through the User port. However, these suffer from compatibility problems with some software, so I can't recommend them as the best way to connect a printer.

There is one other way. By placing some sort of hardware between the normal printer port and a Centronics printer a fair degree of compatibility can be maintained. At present I use the Cardco G+ interface, which is sort of a black box that changes Commodore output so it will work with a large variety of popular printers.

It uses a standard which we mentioned briefly a moment ago called "Centronics". Information is passed to the printer in parallel or

one byte at a time. A serial printer passes information one bit at a time or one eighth as fast.

This idea correlates nicely to the difference between sending several thousand people at the Easter Show through one turn style compared to sending them through eight. In case you haven't worked it out, it's faster to send them through eight.

Other advantages

So, for around \$400-\$500 you can get a printer which not only works well but also does a few things Commodore printers don't do. The interface will cost, so it may be a bit of a toss-up depending on how much you want to spend. The Cardco interface I use sells for \$99. It is also responsible for doing all the program listings which appear in the magazine.

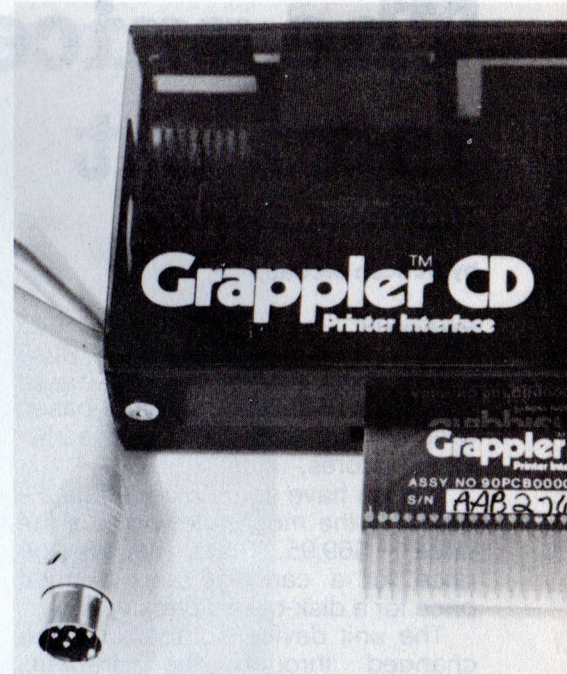
What's so special about them? Well, all the control codes and cursor

symbols which I mentioned earlier are placed in brackets and expanded into understandable abbreviations by the interface.

Most MX-80 (a standard similar to an Epson) printers are also capable of producing some interesting graphics. You'll see an example of this along with our story on Graphics.

It all adds up, more print modes, compatibility with other computers and friction as well as tractor feed. Friction feed is just like a normal typewriter's feed, where the paper is held in position by pressure. Generally speaking you can put all sorts of paper in it to print on. Tractor feed lets you put that funny paper with holes along the side in your printer for continuous listings.

Now that you're all totally confused as to what you want to buy, between now and next month have a long think about what you want a printer for. That is the first big question you should answer before you start looking. □



A closer look at the Grappler which plugs into the expansion and serial port


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The price is right

Review of Busiwriter

by Duncan McCann

Well, here's one that PET owners may recognize. Busiwriter – actually a disk-based version of FRENCH 1, a ROM-based program which ran on the earlier Commodores.

It does have some nice features – probably the most noteworthy is the price – \$69.95. That's the average price for a cartridge and a great price for a disk-based package.

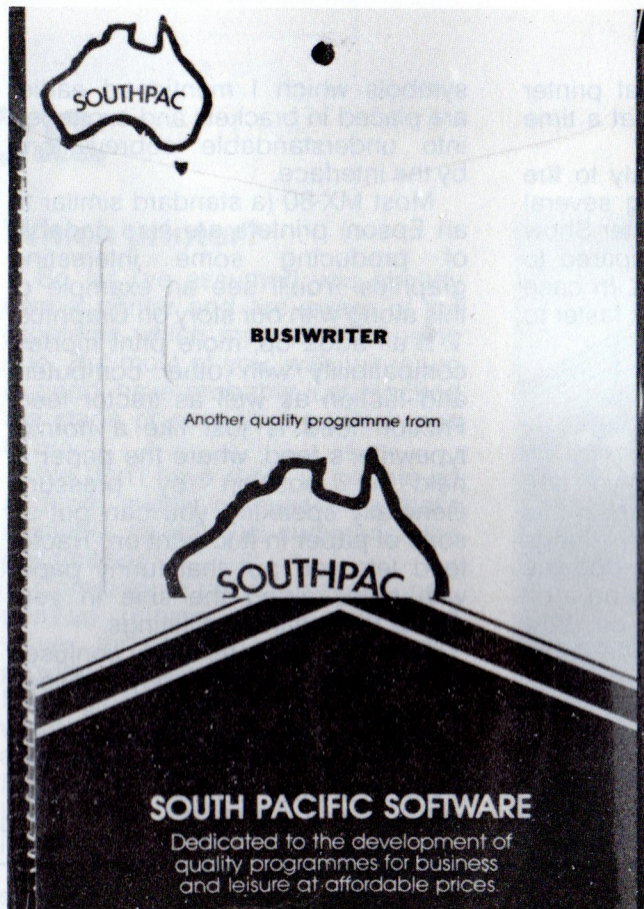
The unit device numbers can be changed through the program, meaning that Busiwriter will operate with 2 x 1541s. It is a bit fiddly to do so, but if you are one of the minority trying to find a program that will run using 2 x 1541s, that may not worry you. How useful or necessary dual disk drives are for simple text editing is debatable.

And make no mistake, this is simple text editing, no header, trailers or page numbering. And while it is not at all sophisticated it does have some good points – it does mail merging; up to 99 different fields can be merged into form letters, etc. It is an extensive form letter that will use 99 different variable infills repeated, ad infinitum, until Busiwriter runs out of memory.

Another feature is the Calculator function. It will add, subtract, multiply or divide decimals and integers in either vertical or horizontal columns. It's a bit choosy about where it will enter the finished result, but who cares for \$69.95.

As there are no so-called "modes" to enter, editing functions can be called up with only one or two keystrokes. It does still take several sequences of one or two keys, for example, to print out or save away. This is no hardship once you have memorised the sequences, so can hardly be considered as a black mark against Busiwriter.

If I delete text by mistake, no problem; as long as I realise immediately, Busiwriter puts it back just the way it was. Possible disaster



averted.

And apart from the list of contents, it has a quick reference guide for the various functions available.

Now I have finished with the bouquets, here come the brick bats!

First, the manual. This gets the big "thumbs down". I enjoy reading manuals. I am not among those people who take as their motto "When all else fails, read the manual". I read it first. Busiwriter was heavy going and that probably explains why I missed vital bits. That's my excuse and I'm sticking to it.

About two thirds of the way through they give a short overview of the disk commands, like NEW, SCRATCH, etc. Who cares, at this point I have been typing my little fingers off, following the early instructions in the manual, and I want to print it out.

After several unsuccessful attempts, I finally realised I had not set the text parameters, and the fact that I needed to and what they were was not mentioned in the manual until I had almost despaired of working out where I was going wrong. Okay, so I should have known that the text needed instructions on how to print out, but I'm a first-time user, aren't I?

And isn't that the purpose of a well-written manual? The directions to set the text parameters before typing in the text came 10 pages after the instructions on how to tell it to print out, three pages from the back of the manual (six pages if I include the Index). And thin, Elizabeth Taylor should be so thin. Thirty-four reasonably inadequate pages.

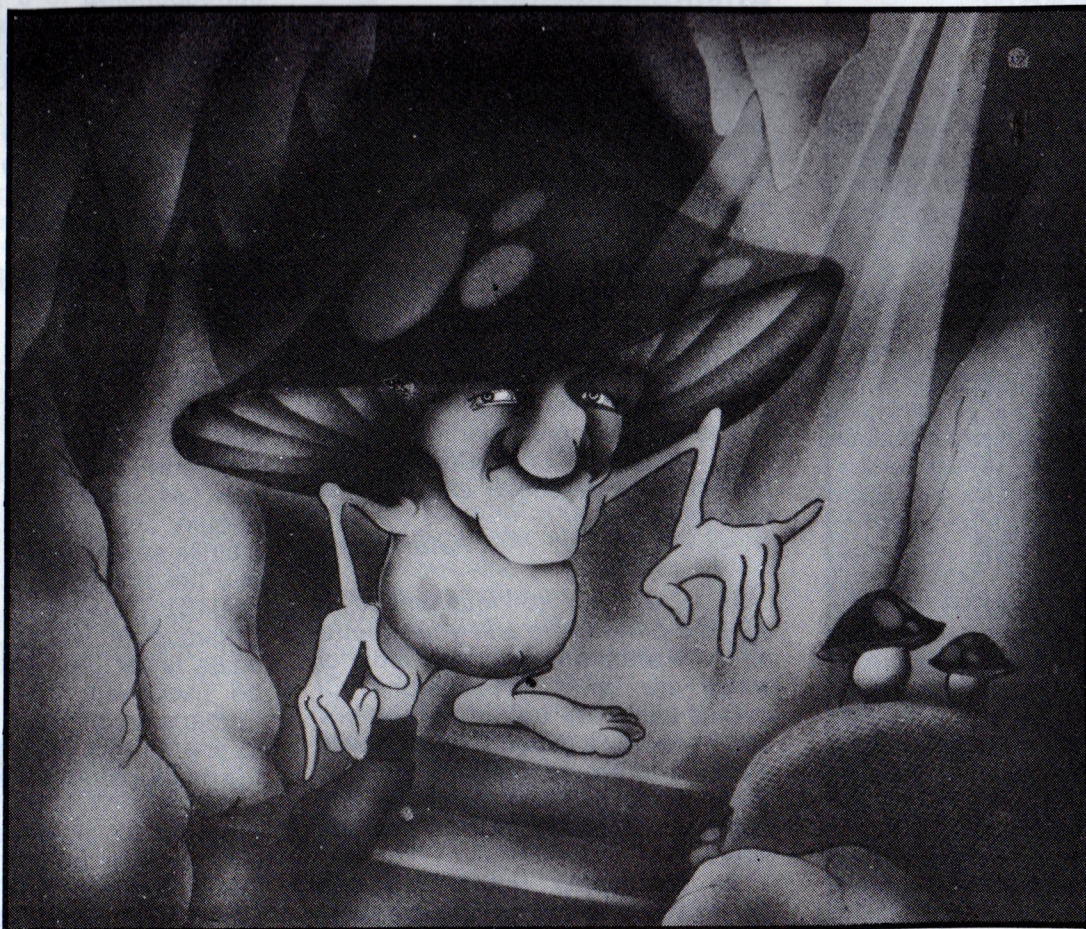
As it turned out, setting the text parameters was easy in comparison to getting a letter quality printer to work with it. I had a choice of Vic, Commodore or Other. I wanted Other. Nothing happened. So evidently the program does not have Centronics or RS232C "drivers" but as it didn't even ask what sort of Other I wanted to use, it didn't really have much chance from the start.

Another disappointment was that it made no use of the Function keys, eg changing screen colours. What is the point in Commodore going to the expense of putting Function keys on a computer if no one is going to use them?

Don't throw away Easyscript just yet. Remember that golden oldie, "you get what you pay for".

The program is produced by South Pacific Software and can be purchased from most dealers. □

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Written and designed by Andrew Farrell

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Vic 20 Hints

Sound on the Vic

by Sean Mcsullea

The Vic-20 has four separate voices all capable of working at the same time. These controlled from within the computer using locations 36874, 36875 and 36876 for tones and location 36877 for white noise".

Before you commence to make sound or even the magic of music you must tell the Vic how loud you want it. After all, you don't want to upset the neighbours.

The volume control on the Vic-20 is operated through location 36878. The value assigned to the volume control can be between 0-15, 15 being the loudest level where ear drums crack, tempers snap and the neighbours complain to the local police.

The value in each of the four voices mentioned earlier can be between 127-254, 254 being the highest.

Try this little program:

```
10 POKE 36878,15:REM SET
VOLUME
20 FOR I=127 TO 255:REM COUNT
FROM 127 to 255
30 POKE 36876,I:NEXT:REM PUT I
INTO THIRD SOUND CHANNEL
40 POKE 36876,0:REM TURN OFF
CHANNEL 3
```

Experimenting with different loops can be fun and can produce some good sound effects. Every time you get a sound effect that you like save the program so that you can use it as a sub-routine at some future point in time.

This next program uses a machine code subroutine which uses the Vic's built-in clock timer to produce a great sound effect. Type it in and experiment by holding down different

keys to see the effect it has on the sound.

```
10 FOR I = 828 to 834:Read d: Poke
I,D:Next I
20 POKE 36878,15
30 SYS 828: goto 30
40 DATA 173,36,145,141,12,144,96
```

Using the Vic-20 built-in clock

On many other computers you have to invest in an expensive clock card in order that your computer can tell the right time. Not the Vic 20, it has its own little ticker going all the time it is switched on.

The Vic-20's built-in clock can be accessed through the variable, TI\$. That means you have a built-in timing device that you can introduce to your programs.

From the moment you turn your Vic on, the Vic will increase the value of TI\$. Try typing "print TI/60" to see how many seconds your Vic has been operating.

The following is an example of how to use the clock in your own program by adding a small sub-routine:

```
10 INPUT"HHMMSS";TI$:REM SET
THE TIME TO HH HOURS MM
MINUTES AND SS SECONDS
20 ?"[CLR/HOME][CSR DOWN]
";TI$GOTO 20
```

Poking characters to the screen

Vulgar though it may sound, poking characters on the Vic 20 can be fun. Characters can not only be printed to the screen, but can also be placed on the screen through the poke command. The advantage with

this is that the poke number can be increased, decreased and changed to move the character around the screen giving at least the simulation of movement.

The location of the top of the screen is 7680 and the bottom corner is 8164.

Also the colour of each individual character can be changed - not a bad idea if you want the screen display to look attractive - by poking a value from 0 to 7 in the screen location, plus 30720.

Try this example:

```
10 PRINT "[clr/home]":POKE
36879,8:REM CLEAR SCREEN
AND MAKE SCREEN BLACK
20 A=INT(RND(1)*506):REM MAKE
A EQUAL A NUMBER BETWEEN 0
AND 506
30 B=INT(RND(1)*7):REM MAKE B
EQUAL A NUMBER BETWEEN 0
AND 7
40 POKE 7680+A,81:POKE
A+30720,B:REM PUT CIRCLE AT
7680+A, COLOUR=B
50 GOTO 20
```

If you have any problems with the Vic 20 I look forward to hearing from you. If you are one of the lesser breeds outside the law that uses a Commodore 64 then sadly, not only can I not help you but I even doubt if I could mix with you socially. □

Apology

Character Magnifier for the Vic 20

In "Australian Commodore Review" Vol 1 No 2, we published on page 32 a program called **Character Magnifier**.

We must apologise to readers and to the author for leaving out the essential information that this was from a book called "Delving Deeper into Your Vic 20" by Phil Campbell, which contains many helpful programs for the Vic 20.

We will be reviewing this book in a future issue.



by Andrew Karagiannis

I have been conned, if that's the phrase I'm looking for, into writing the only semi-intelligent column you'll find between the covers of this magazine, but fear not. It may be technical and it may be intelligent, but with a bit of luck it should be both readable and understandable.

(Gareth Powell writes: There will be no argument in this office that Andrew Karagiannis is writing a semi-intelligent column, the only semi-intelligent column, in this magazine. The other columns are intelligent.)

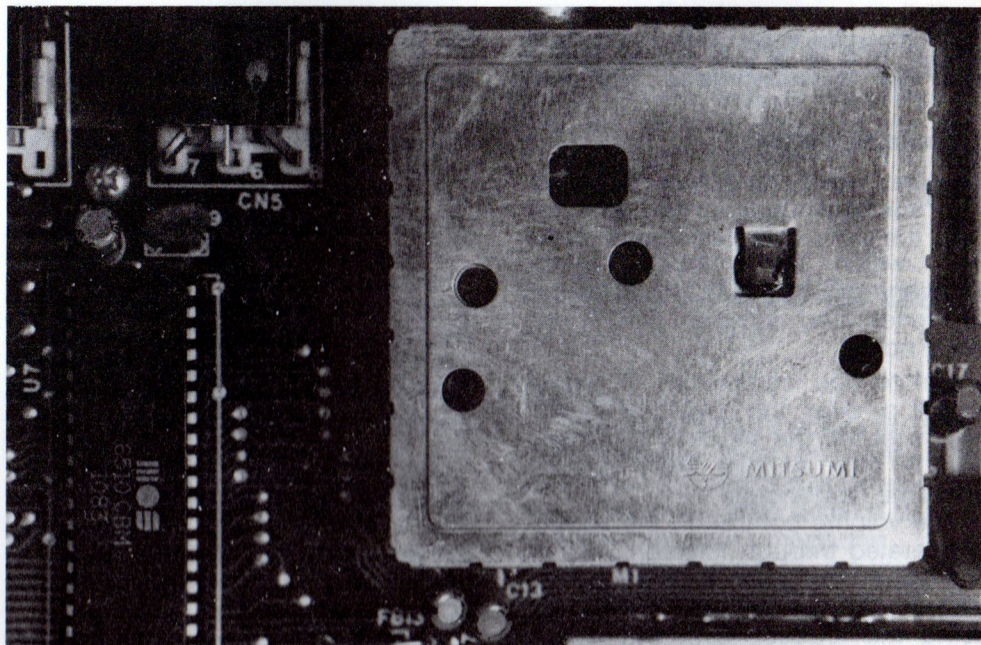
At this stage it would probably help if I told you what the column is about, so here goes:

1) If you promise to be good and read this column every month eventually you will not only be able to answer all those "But what does it do?" questions, but you'll be able to leave them stunned with your vast knowledge of how it does it.

2) Secondly, in the column I will answer technical queries regarding Life, the Universe and Everything, but mainly Commodore computers and peripherals (so get those queries rolling in).

3) Eventually (when you know enough) we'll get around to building up fun little circuits to play with, and show you how to interface your computer to the real world of power controllers, burglar alarms etc.

Now that we've got all that out of the way, I suppose we should get



The UHF Modulator produces an intelligible signal for your TV from the innards of your computer

down to the technical nitty-gritty, and what better place to start than the real basics?

Integrated circuits

If you open your computer up, you will find lots of little black things with even more little silver feet. You may have been told that these are imported alien caterpillars that do all the computations; however, this is totally untrue and they are correctly known as Integrated Circuits (ICs) and are manufactured locally (planetarily speaking).

There are many different types of

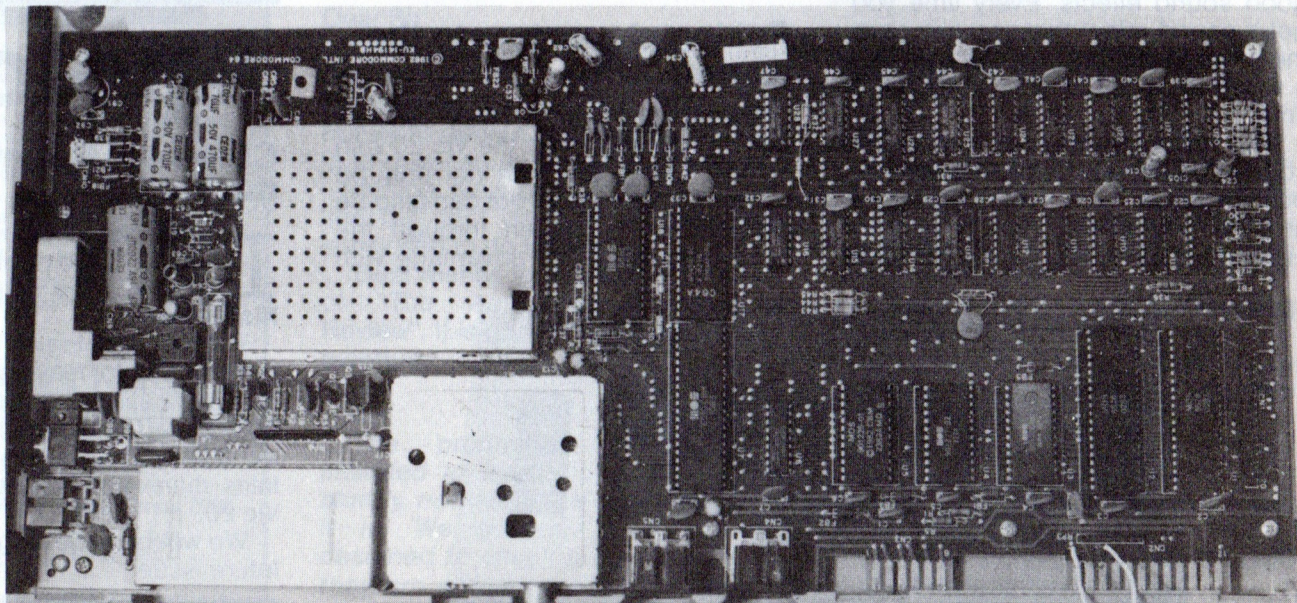
ICs such as the Microprocessor and the Kernel Rom, small logic "house-keeping" ICs and memory ICs.

Thanks for the memory

Today we will concern ourselves with memory ICs – what they are, what they do and how your computer uses them. Basically there are two types of memory ICs, Read Only Memory (ROM) and Random Access Memory (RAM). In the interests of this column ICs will hereafter be called "chips".

Getting back to the subject at hand, the major difference between

An inside look at the Commodore 64. Note the reset wires leading off the user port



ROM and RAM chips is that ROM chips are factory programmed, the software is permanently burnt into the chip and you can't change it, your Kernel ROM or games cartridges.

Now RAM chips are different in that with very little persuasion you can fill them up with whatever garbage, data, program you like and change part or all of it at any time with a mere poke. Your computer uses RAM for screen memory, program storage and running, and as a scratch pad to keep track of whatever it is doing. "Ah!" you exclaim, "But how does it know what's where?"

A very good question.

List of addresses

Imagine the memory in your computer is a big street with houses in it, and each house has a letterbox with its "address" on it.

When you type a program into

your computer, each time you type in a program line that information is put into letterboxes sequentially. When you RUN your program your computer chip automatically goes to the first memory address of your program (first letterbox) and reads the information inside it and does whatever that code means.

For instance it may reach address location 20 and find the code for GOTO. Now your BASIC OPERATING SYSTEM knows it needs more information than that. So it looks at the memory address locations 20,21,22 etc until it reaches the code that tells it has the complete number, for instance GOTO 500.

It knows to go to the memory address (letterbox) which is the start of the information contained in line number 500, where it starts executing whatever instruction it finds at that address. Whenever you run a program the microprocessor goes through your memory basically sequentially but jumping all over the

place whenever it has to (don't worry, electrons don't get tired).

Basic operating system

Whenever it reaches a code for an instruction, ie IF, THEN, PRINT etc, it has to go back to the BASIC OPERATING SYSTEM to work out what to do, which is why BASIC programs run so slowly. Machine code goes into memory in much the same way, but through the BASIC OPERATING SYSTEM "INTERPRETER" which is why machine code programs run much faster than basic programs.

So now we're all experts on what memory is and how your computer uses it, it's time to look at the picture and give our brains a rest. The picture is there to help you identify some of the different types of ICs and also shows what is RAM and what is ROM.

Have you seen the other Gareth Powell Computer Magazines?

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Starting with Disk Drives

The first in a series of articles on how to talk to your disk drive. **by Paul Blair**

The little box that you feed diskettes is very intelligent, and can be used very effectively with a little understanding. Just as your computer is fitted with an operating system that allows you to use Basic words for programs, so too disk drives have their own operating system. This system is most commonly named the Disk Operating System (DOS) but I think that Disk Basic is a more readily understood concept. Before going any further, however, let's find out what a diskette is.

The diskettes used in most computer disk drives are sheets of a plastic-type material, with coated surfaces that are designed for magnetic recording. Each disk is about 130mm diameter, with a 30mm hole in the centre. Both sides of the disk are coated, and factory quality control decides whether one or both sides come up to quality standards, labelling the results as single or double sided disks.

The actual disk is housed in a sleeve or envelope, usually lined with a wiper-type material that collects the dirt and dust that accumulates on the disk itself. The envelope is about 165mm square, with a long slot through which the recording head can access the disk. On one edge (the left side as you look at a disk as you insert it into the drive) is a "write protect" slot. If not covered, you can both read and write to the disk. If a tab is stuck over the notch, you can read but not write to the disk, thereby protecting disks from accidental writing or erasure. There are two small nicks along one edge, to act as stress relief. A final small hole near the central hole completes the envelope description. It is part of a detection system that is of no particular interest here.

In use, the diskette is written on the back – the side away from you when you are reading the label. The envelope, of course, stays still while a broad hub grips the diskette and spins it at about 300rpm (or its metric equivalent). New disks may be a bit stiff in their covers at first use, and could give a worry or two if you are

unused to diskette use. More of that anon.

Disk organisation

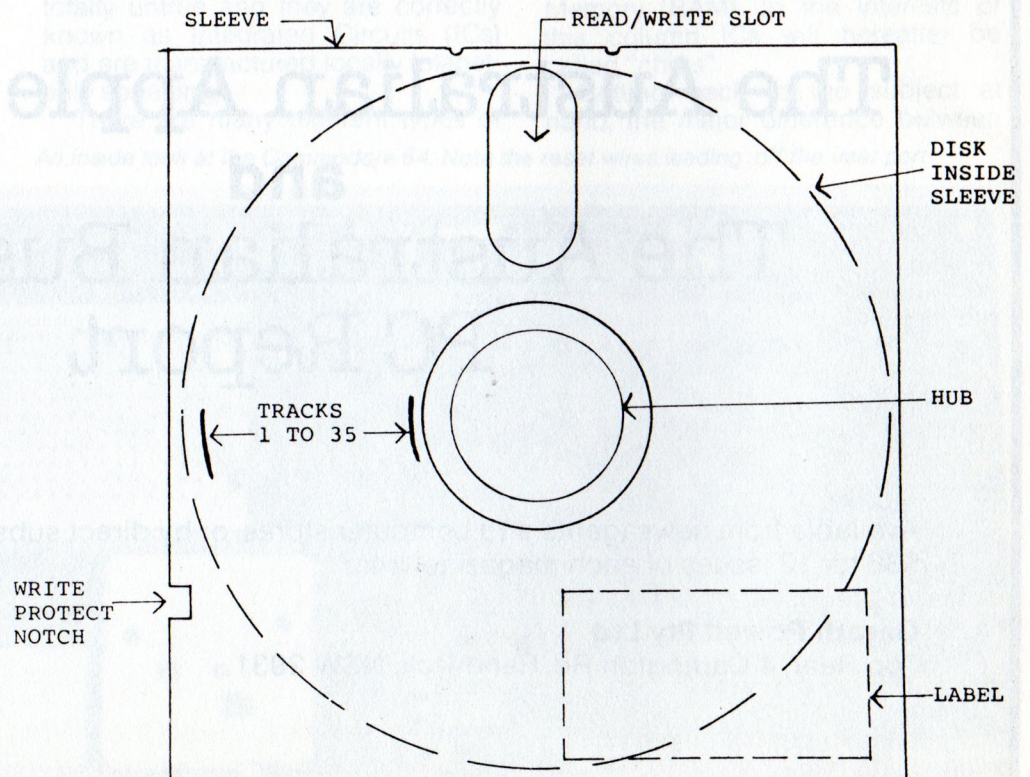
Commodore 1540/1541 disk drives follow a convention that started with the very first drives they released. Each disk has 35 tracks, something like a phonograph record (or a laser disk, for those a bit younger!). You can't see the tracks, but they are there, all 35 of them, concentrically arranged. Another convention is how they are "named" – Track 1 is at the outer edge and Track 35 at the inner. That is how the first subdivision is arranged.

The next subdivision is carving up each track into more convenient bits, named sectors (or blocks – the names seem to be interchangeable). Each sector is designed to hold 256 bytes of information, so that four blocks are needed to hold 1K of information. Because the disk circumference is greater at the outer edge, there is room for more sectors in each track at the outer edge, decreasing as you come towards the

centre. Commodore has taken advantage of this to pack a bit more storage onto their disks. Track 1 has 21 sectors (numbered 0-20) while Track 35 has only 17 (0-16). In all, there are 683 sectors on an empty disk. Nineteen of these are set aside for the directory track, so 664 remain for you to use. If you think about it for a minute, a sector is quite tiny – on Track 1, less than 19mm long.

Choice of diskettes is a complex subject, and sometimes one of violent disagreement. Given the competitive environment in the market place, there are unlikely to be any really bad products out there. Some seem to be better than others, but it is virtually impossible for a casual user to work out some rating scheme. Price does not seem to be a guide.

The operating system in any Commodore single disk drive is about as complex as the operating system in the Commodore 64. There is about 16K of program permanently in each, which makes the disk drive a very powerful system indeed. But



unless you know how to get to the system in the disk unit, you will never have much fun with your machine.

The commands provided for your use fall into two groups – those that are built into the C64 (which are mainly used for passing information back and forth between the computer and the disk drive) and those that are in the disk drive, and are often termed “housekeeping commands”. The groups are like this:-

C64 COMMANDS:

CLOSE
GET#
INPUT#
LOAD
OPEN
PRINT#
SAVE
VERIFY

DISK DRIVE COMMANDS:

COPY
DUPLICATE
INITIALIZE
NEW (not to be confused with NEW)
RENAME
SCRATCH
VALIDATE

These commands will be explained as we go through the article.

The first thing you have to learn is how to talk to your disk drives. The trick is to think of disk access like a conversation that you and I might hold. We would greet each other, say what we want to say, then bid farewell. All the time, we would be watching each other – feedback from any conversation is a vital part of the intelligence loop that we all use. Disk use is rather like this, except that you need to stick with some rules of conversation.

The rules of polite conversation also apply to your disk drives. The salutation is all important. To do this, you need to use the correct syntax. Commodore has provided the facility to set up conversation “lines” by opening channels to peripheral devices such as printers, disk units, cassettes and so on. You can have a number of lines open at one time, but the important line (or channel) with disk drives is what is termed the “error channel”. Channel 15 has been set aside specifically as the error line, so to get the conversation going, we do this:-

OPEN X,8,15

What does this do? The Commodore syntax is unique, and very easy to use. “X” is the file number of your choice, and can be any number 1-255, but for simplicity is usually 1-15. The device number assigned to disk drives by Commodore is 8, so we must mention this. The last parameter is the channel number to use. To send commands to the drive, we will use channel 15. You can type this command in direct mode (straight from the keyboard) or in a program. Remember it – you will doubtless have many occasions to use it.

The three parameters used here have official names. “X” is Logical File Number, “8” represents the Device Address, and “15” is termed the Secondary Address. All are important, but don’t worry too much about them for now. I mentioned them here only to provide some sort of link with the terminology used in handbooks and magazine articles.

Having struck up a conversation, we now need to say something. What will we say? Let’s put the disk drive read/write head over the directory track, ready for some action. The Disk Basic word that does this is built into the disk drive – “Initialize”, and may be followed by the disk drive number if more than one is on the line. The keyword is a bit longwinded. Luckily the disk drive can figure out what to do from the first letter (“I” in this case), so we can send the command with a minimum of fuss. The conversational routine is to send the command by “printing” to the channel we have opened. PRINT#n is the syntax to use, so if we have opened file 7, we have:-

OPEN7,8,15 and now
PRINT#7,“IO”

Notice that the command is in quotes, conversation-style. To finish off our conversation, we say ‘bye with

CLOSE 15

That didn’t hurt too much – but it didn’t do an awful lot either, and will only work on a disk that has been formatted.

What’s NEW?

When you take an unused diskette

from its box, it needs some action on your part before it can be used. The action is termed “NEW”, a particularly Commodore word. NEW (for disk use) simply means preparing a new diskette for use. Do not confuse disk NEW with computer NEW (to erase the current program in the memory. I do wish Commodore ...)

Most disks are made as total blanks – nothing more than a coated circle of plastic sealed in a cardboard sleeve. Before you can use it, it is necessary to carve up (metaphorically speaking) the physical surface of the disk into a pattern acceptable to the disk drive. The disk operating system (DOS) likes an orderly life, and requires an ordered disk to work with.

How do you order the disk – “NEW” it, to use the Disk Basic command? Just as before, it is necessary to strike up the conversation with:-

OPEN 15,8,15

Before going any further, you need to make a couple of decisions. What name do you want to give the disk, and what identification number is it to have? What’s in a name and ID? OK, you may select any name up to 16 characters to give your disk some character. Give it a fun name, give it a serious name, but call it something. The ID is another part of the identity, so choose two characters. The very important rule here is – make every ID unique. Avoid using the same ID twice. Both the name and the ID should be alphanumeric characters.

Decisions, decisions. Right, let’s push on. Suppose you decided on ADVENTURE as the disk name, and A2 as the ID. The next thing is to tell this to the drive with the PRINT# statement that we used before:-

PRINT#15,“NEW:
ADVENTURE,A2”

If you have more than one drive (lucky you), the number of the drive you want to use is popped in after the command (eg N1:DISKTITLE,ID).

What happens now? All being well, the disk drive will spring into action (1541s rouse themselves!) and get to work. The DOS moves the read/write head to the outer edge of the disk, and starts to format each

sector on the disk. It performs a series of jobs. Among the jobs: the disk ID and some mysterious marks are written to a hidden part of each sector, then space for 256 bytes (one sector) is set aside. This is repeated for all 683 sectors on the disk. Finally, the directory track (Track 18, in the middle of the disk) is set up ready for use. Having done all that, the disk is now ready for action. The conversation is concluded on the usual cheery note -

CLOSE 15

and you have completed your first voyage into disk housekeeping land.

The usual way of doing NEW is directly from the screen. The command is typed on one line (no line number, of course) like this -

OPEN 15,8,15:PRINT#15,"N:
DISKNAME,ID":CLOSE 15

The command is also used

whenever you decide that some in-use disk needs a fresh start. You can use the full command as given above, which will thoroughly erase every sector. Be warned about this! A short form command will erase only the directory.

OPEN 15,8,15:PRINT#15,"N:
DISKNAME":CLOSE 15

Notice that the ID is omitted in this syntax.

Going back for a minute to diskettes that have not been used before. My practice is to NEW each disk TWICE when I'm setting it up. Brand new diskettes have been jammed in their sleeves since manufacture, and packed tightly in boxes. They are subject to quite a bit of friction at first. I NEW disks twice to ensure that there is no doubt that the process is thorough. This is even more important with low-torque motored drives, which have to work quite hard with new disks.

To recap. We have found how to initialize a disk (PRINT#15,"1" or PRINT#15,"10"). We can also prepare a blank diskette for use, and wipe clean an in-use diskette. Ah, the power of it all.

Ever heard of the WEDGE program? Why wedge, anyway? It started with the " " symbol . . . sometimes called the "wedge". To cut it short, WEDGE is a program that provides a way of shortening the conversation by doing the opening and closing chat for you. It may be a bit lacking socially, but it saves time. To illustrate its use -

N:ADVENTURE,A2 performs
NEW

No open, no close, no quote marks. WEDGE (sometimes named DOS SUPPORT) looks after that. We will discuss its use as we go further. □

Look out for more on how to talk to your disk drive in our next issue.

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Hires Graphics on your Commodore 64

by Michael Stead

Hires Graphics has always been a very popular subject amongst computer enthusiasts and Commodore owners are, no exception. Hires is actually an abbreviation of the words "high resolution", and is often used to describe a special type of graphics where every dot on the screen may be turned on or off giving much detail.

Being a dedicated user you're probably wondering how we can use this feature and for what purpose. Unfortunately, there are no direct commands from BASIC to do the job, although with a little machine code we could soon add them. But first, let's learn the principles involved.

The Commodore is capable of a resolution of 64,000 pixels (picture elements), which is greater than that of the popular Apple IIe and most definitely a little higher than the TRS-80.

High resolution graphics is produced using a method known as "bit mapping", which basically means that the Commodore directly displays an 8K block of memory on the screen. In this way you can directly control whether or not an individual pixel or dot is on or off.

It is very similar to using programmable characters on a far grander scale. Imagine the entire screen is filled with "programmable characters". To alter the resultant mess or picture, the memory where the programmable characters are stored must be directly modified.

In the standard text mode we have 40 characters along the top of the screen, each eight dots or bits wide. There are also 25 rows, also eight dots deep. A little maths and you'll see how we arrived at that previous figure of 64,000. Multiply the number of characters on each axis by eight and we get two numbers, 320 across the top and 200 down the side. 320 what? Dots, of course. Multiply the two together the same way you might

find the area of a square and you get 64,000. So our hires grid of area contains 64,000 cells or bits.

Each 8 x 8 set of cells may be any single colour from a selection of 16. Unless we are in Multi colour mode. In this mode we may have up to four colours in each 8 x 8 set of cells but we lose detail with the number of cells across the top of our screen reducing by half.

How it works

Every cell corresponds to one bit or one eighth of a memory location somewhere in your 64. Since we have 64,000 bits altogether and we can store eight of these in one byte or location, we will need 8K to store our entire picture.

Let me try and explain things a little more. Your computer really "talks" in a language of zeroes and ones, called "binary" as in bicycle. If you only had two fingers it would be a little easier to explain, but not to worry. When we stick eight of these bits or zeroes and ones together we get a byte. Commodores put eight of these bits together to make a byte, thus the common term "8 bit computer".

So, one byte is made up of 8 bits. Each bit has a value, the same as the columns in our number system have a value. We deal in units, tens, hundreds, thousands and so on. Computers deal in base 2. So we get units, twos, fours, eights, sixteens and all the way up to 128s.

Bit	7	6	5	4	3	2	1	0
Expression	2 ⁷	2 ⁶	2 ⁵	2 ⁴	2 ³	2 ²	2 ¹	2 ⁰
Value	128	64	32	16	8	4	2	1

To the computer, the number 128 would be stored as 10000000, and 255 would be stored as 11111111. The bits are simply added together, depending on their position to produce a larger number up to 255.

So to store information about our bit-mapped picture we must know what bytes will be displayed where and how to turn on the correct bits

inside them.

For the first line of 320 dots at the top of our screen the 64 will need 40 bytes to hold the relevant information.

A small 32 x 5 bit-mapped block in the top corner may look like this:

```
00001010111010001000111001100000
00001010100010001000101001100000
00001110110010001000101001100000
00001010100010001000101000000000
00001010111011101110111001100000
```

When this has been separated into single bytes, it may look like this:

```
00001110 10101100 11101110 11011000
(14)      (172)    (238)    (216)
00001000 10101010 10001010 10101000
( 8)      (170)    (138)    (168)
00001110 11101010 10001010 10101000
(14)      (234)    (138)    (168)
00000010 01001010 10001010 10001000
( 2)      (74)     (138)    (136)
00001110 01001100 11101110 10001000
(14)      (76)     (238)    (136)
```

So, to create this on our imaginary 32 by 5 bit-mapped screen, you would poke byte 1 with 14, byte 2 with 172, byte 3 with 238, byte 4 with 216, byte 5 with 8 and so on. On a full screen there are 8000 of these locations to fill with the relevant information.

Because one byte contains the information for 8 pixels, problems arise changing only part of the byte, or just altering one pixel. To do this we need to use the AND and OR functions.

Here's how they work:

```
Statement : 5 AND 3          5 OR 3
            5 00000101      5 00000101
AND 3      00000011      OR 3 00000011
Result     00000001      Result 00000111
```

AND means both bits must be on for the result to be on.

OR means either bit must be on for the result to be on.

You may have already seen how this will be useful to select an individual pixel.

If you wanted to turn on bit 4 of a particular byte, without affecting the other bits, you would use something like this:

```
A=PEEK(X):B=A OR 16:POKE X,B
```

This would take the value in location X, OR it with 16 (which is two raised to the power of bit 4), and store it back in location X. The same is true for changing other bits, the only variation being instead of ORing with 16, you would OR with two raised to the power of that particular bit (eg to affect bit 7, OR with 27, or 128).

To erase a point, it is slightly more difficult. You must use the AND command, but you must use the numbers complement (of 255). For example, to turn off bit four, the line would be something like this:

```
A=PEEK(X):B=A AND  
(255-16):POKE X,B
```

How to use it

When bit-mapped graphics are in use, the normal text screen is not being used. So, in the interest of saving memory, the Commodore 64 uses the text screen to hold bit-mapped colour information. When in the bit-mapped mode, each byte from 1024 onwards contains the colour information for one 8 pixel by 8 pixel block.

The whole process of bit-mapped graphics on the Commodore 64 is controlled by the VIC II chip. The only problem with this is that the VIC II can only access 16 kilobytes at one time.

Since the VIC II cannot access all 64K of memory at the one time, it uses a technique called banking. Only 16K is "looked at" at any one time, thus allowing for four different banks or areas of memory.

```
BANK 0    0 to 16383
BANK 1    16384 to 32767
BANK 2    32768 to 49151
BANK 3    49152 to 65535
```

Remembering that a bit-map takes up almost eight kilobytes, and another 1024 bytes are required for colour, it is best to use BANK 3, because the other areas contain our basic program or variables.

There are two possible locations

for the eight kilobyte bit-map within our selected memory bank.

There are 16 possible locations for the kilobyte screen memory, but it is easier to put it just before or just after the bit-map.

```
To select BANK
BANK 1 POKE 56576,3
BANK 2 POKE 56576,2
BANK 3 POKE 56576,1
BANK 4 POKE 56576,0
```

BIT MAP START

For the purpose of this demonstration we'll use bank one.

16384 - POKE 53272,128 this puts the bit-map at 16384, and video after it.

24576 - poke 53272,120 this puts the bit-map at 24576, and video before it.

To turn on bit-mapped graphics type:

```
POKE53265,PEEK(53265)OR32
POKE53270,PEEK(53270)OR16 (for  
multicolour bit-mapped mode, do  
both).
```

Making it work

It's all very fine to know all this, but how do you make it work for you?

First things first, you must turn on the bit-mapped graphics. The following program will do this for you.

```
10 POKE 53272,128:POKE53265,  
PEEK(53265)OR32
```

Next, you may like to clear the hires area

```
20 BASE=16384:FORT=  
BASETOBASE+7999:POKET,0:  
NEXT T
```

Now comes the hard part. Translating all the particular bytes etc into X and Y co-ordinates for your pixel. This must be converted to give the row of plotting, the column, the line, and the bit in question. The following formula will do all this:

```
30 ROW=INT(Y/8):COL=INT(X/8):  
LINE=Y AND 7:BIT=7-(XAND7)
```

The only thing remaining is to plot up the actual point, with a line something like this:

```
40 BYTE=BASE+ROW*320+COL*8  
+LINE:POKEBYTE,PEEK(BYTE)OR  
2BIT
```

With that four-line program, you can plot any point, given the X and Y co-ordinates. However, it can be easily improved up with the addition of colour. In standard mode, there are two colours required, one for bits that are on, and one for bits that are off. These are contained in the upper four bits and the lower four bits of that particular colour cell. For example, using the above program that sets the colour memory to 24576, to set the colours for a pixel that is on in the first cell to green for on, blue for off, the line would read:

```
poke24576,5*16+6
```

Notice that 5 is the number for green, and 6 for blue. The number for the colour for ON bits must be multiplied by 16, and the number for OFF bits added to that.

Multi-colour

One other important aspect of high resolution graphics is that of the Multi-coloured Bit-mapped mode. This allows four colours in one eight-by-eight colour cell. To gain this, you must sacrifice half the horizontal resolution.

The extra colours are gained by linking two bits together, and treating them as one, in much the same way as multi-colour sprites and multi-colour characters. This creates a Bit Pair. These work in the following manner:

```
00 0 background colour
01 1 upper bits in colour memory
10 2 lower bits in colour memory
11 3 colour in corresponding  
memory at 55296
```

This means that to have a bar that shows all background colour, it would look like 00000000, and the data would be calculated as zero. However, if a bar of colour one were required, it would appear as 01010101, and would be poked in as 85. If a mixture were required, such as all four colours (00101011) it would be all right to poke in 43.

The four colours that are used in multi-colour are:

Background - which comes from

register 53281

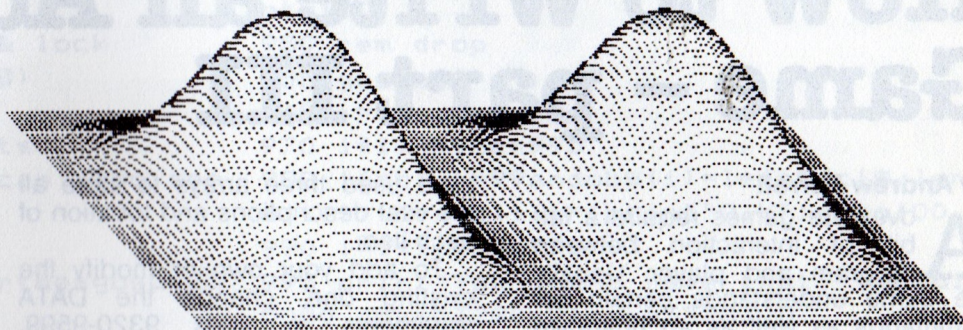
Colour1 - Upper four bits of the colour memory for that cell.

Colour2 - Lower four bits of the colour memory for that cell.

Colour3 - The colour contained in the corresponding colour memory at 55296.

With practice, it becomes easy to produce amazing effects using bit-mapped graphics and simple tricks such as combining sprites, changing colours, and switching between different pictures. □

3 DIMENSIONAL SURFACE



PROGRAMMING

Listing explanations

If you have entered programs from various publications you will have often encountered numerous symbols and strange characters which are unique to Commodore computers.

These are usually special control codes which might tell your computer to clear the screen, change colours or position the cursor. They are difficult to reproduce in a magazine and can often lead to mistakes in entering a program.

Here is a handy list of the control code abbreviations used throughout this issue and all subsequent issues of this magazine. Without them we would

have to fill up the program pages with the usual illegible reverse graphics symbols produced by Commodore printers.

Because so many readers have misunderstood this in other magazines let us spell it out in detail.

When you are entering any of the other programs in this issue - or any other issue for that matter - type in the program as normal except when any abbreviations appear in brackets in a listing.

Then type the corresponding key strokes as listed in the example below.



```

10 rem explanation of listing
12 rem
14 print"{CLR} - shift and clr/home"
16 print"{HOME} - clr/home"
18 print"{C/DN} - curser down"
20 print"{C/UP} - curser up"
22 print"{C/RT} - curser right"
24 print"{C/LF} - curser left"
26 print"{BLK} - ctrl and black"
28 print"{WHT} - ctrl and white"
30 print"{RED} - ctrl and red"
32 print"{CYAN} - ctrl and cyan"
34 print"{PURP} - ctrl and purple"
36 print"{GRN} - ctrl and green"
38 print"{BLUE} - ctrl and blue"
40 print"{YELQ} - ctrl and yellow"
42 print"{ORNG} - commodore and blk"
44 print"{WHT} - commodore and white"
46 print"{RED} - commodore and red"
48 print"{CYAN} - commodore and cyan"
50 print"{PURP} - commodore and purple"
52 print"{GRN} - commodore and green"
54 print"{BLUE} - commodore and blue"
56 print"{YELQ} - commodore and yellow"
58 print"{RVDF} - ctrl and rvs/off"
59 print"{RVON} - ctrl and rvs/on"
60 print"{F1} - function one"
61 print"{F2} - function two"
62 print"{F3} - function three"
63 print"{F4} - function four"
64 print"{F5} - function five"
65 print"{F6} - function six"
66 print"{F7} - function seven"
68 print"{F8} - function eight"

```

How to write an Adventure Game - part III

by Andrew Farrell

Adventure games require a fair bit of interaction between program and player. Usually the game understands certain set commands as well as an unknown vocabulary discovered as the explorer progresses.

This month I present the start to what could well grow into a real live adventure game. It's sort of a skeleton we can work from to add these commands and build up an interesting plot.

To get things started you will have had to enter in a few descriptions using the editor included last month and saved them to disk or tape ready for use. Before you dash off to type in our latest additions, let's take a brief look at how it all works.

First off we set up lower case mode and make sure it's going to stay that way in line 16. Then we go charging off to line 5000, leaving plenty of space for short routines to sit. (They operate faster if placed toward the start of our program.)

Our map sits at lines 5030 and 5040 in m\$. If you have already worked out your own map, just substitute it for the dummy one in there now. Instructions on how to go about designing your own map appeared in the first part of this series.

To allow for larger maps m\$ must be broken up into separate lines and joined as we go. In the example program, line 5040 contains the second half of our map which is added to the first using the statement 'M\$=M\$+'qqqrrr.etc''.

Line 6000-6099 reads in your descriptions from cassette or disk and also sets up the necessary arrays to hold them. If you used a different filename to save your descriptions, be sure to change name\$ in line 6000.

Objects

Most adventures have a set of objects which may be moved around and handled by the player. For this I

have used three arrays to store all the vital descriptions and location of each item.

To add your own or modify the existing one, change the DATA statements in lines 9320-9599. OB\$(n) contains the object name, OD\$(n) contains a brief description of the object and OB(n) contains the object's location.

As the program stands now, you could only have nine objects as the array is not dimensioned beyond the default size. To accommodate more you will have to add the following statement:

```
5045 n=**:dim ob$(n),od(n),ob(n)
```

Replace the asterix with the number of objects you require.

Commands

Input is obtained in line 100, which also turns off that annoying question mark that usually occurs as prompt by POKING location 19 with 255. Be sure to set things back to normal afterwards or the PRINT statement will also be effected.

Our vocabulary is stored from 9100-9299. As yet we don't have a huge array of commands so there is still a while to go before we can really play the game.

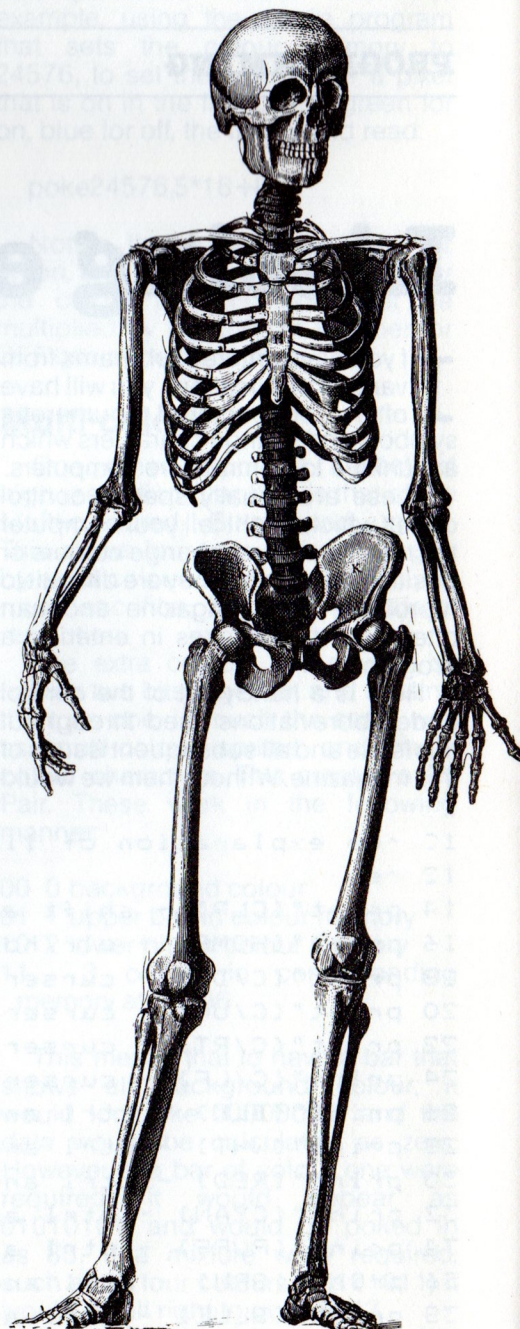
Each word also has a correlating line to jump to when it is executed. Look at line 200 for these. Movement occurs from 700-799, visible objects are displayed in lines 25-40.

There's a few other bits and pieces in there too which I'm sure you'll find interesting, such as the string separation routine in lines 50-56 which places the second word you typed into CL\$.

Questions

If there are any areas you think need better explaining or which are just a little unclear, do not hesitate to drop us a letter. Perhaps you have some ideas of things to add as we get a little more involved?

Next month we will have various additions to make on the framework given in this issue, including adding the ability to understand words such as "the", "a" and "it". The possibilities are endless!



```

10 rem adventure game skeleton
12 :
14 rem switch to lower case & lock
16 printchr$(9)chr$(14)chr$(8)
20 goto5000
22 rem display visible objects
25 iff1=0thenf1=1:print"You can also see
:"
26 printod$(i):return
30 f1=0:fori=1to nb:ifob(i)=rthengosub25
40 nexti:return
46 rem split input into two strings
48 :
50 z=len(co$):i=1
52 ifmid$(co$,i,1)=" "thenc1$=right$(co$,
,z-i):return
54 i=i+1:ifi<zthen52
56 c1$="":return
80 print:ifs(r)=0thens(r)=1:prints$(r):p
rintr$(r):goto95
90 prints$(r)
95 gosub30
100 print"{C/DN}command -->":poke19,255
110 inputco$:poke19,0:print
120 restore:c=1
130 readc$:ifc$="***"thenprint"Sorry, I
don't understand":goto100
140 ifleft$(co$,len(c$))=c$then200
150 c=c+1:goto130
200 oncgoto700,701,702,703,700,701,702,7
03,800,900,950,300,300
300 rem inventory
310 fori=1tonb:ifob(i)=99thenprintod$(i)

320 next:print:goto100
699 rem movement
700 z=1:goto710
701 z=2:goto710
702 z=3:goto710
703 z=4:goto710
710 rem
780 br=r:r=asc(mid$(m$, (r-1)*4+z,1))-64
790 ifr=brthenprint" There is no way in
that direction":goto100
799 goto80
800 s(r)=0:goto80
900 rem get
905 gosub50
910 i=1:
920 ifi>nbthen945
930 ifob(i)=randob$(i)=left$(c1$,len(ob$
(i))thenob(i)=99:print"O.K":goto100
940 i=i+1:goto920
945 print"You are unable to get that!":g
oto100
950 rem drop
955 gosub50
960 i=1:
970 ifi>nbthen995
980 ifob(i)=99andob$(i)=left$(c1$,len(ob
$(i))thenob(i)=r:print"O.K":goto100
990 i=i+1:goto970
995 print"You don't have that!":goto100
5000 poke53280,0:poke53281,0
5010 print"{CLR} A Real Ozi Adventure"
5020 print"{C/DN} Please wait a few minu
tes.":gosub6000
5030 m$="baaababcccbcddeeeeffffgggghhh
hiiiijjjjkkkklllll"
5040 m$=m$+"qqqrrrrrsssstttuuuvvvvwww
xxxxyyyyzzz":r=1
5050 print"{C/DN}{C/DN}{C/DN}":gosub7000
:goto80
6000 name$="descriptions":dv=peek(186)
6010 ifdv=8thenopen 2,8,2,name$+",s,r":i
nput#2,nr
6020 ifdv=1thenopen 2,1,0,name$:input#2,
nr
6030 dimr$(nr),s$(nr):fori=1tonr-1:
6040 input#2,s$(i):input#2,r$(i)
6050 nexti:close2
6060 return
7000 rem read in objects and description
s
7005 restore:i=1
7010 readc$:ifc$<>"***"then7010
7020 readob$(i):ifob$(i)="***"then7090
7030 readod$(i),ob(i):i=i+1:goto7020
7090 nb=i-1:return
9000 open 15,8,15:input#15,e,e$:close15
9010 printe,e$:end
9100 data n,s,e,w,nort,sout,east,west,lo
ok,get,drop,inve,i
9299 data ***
9300 rem objects and descriptions
9310 data lantern,"A rusty old lantern",
1
9320 data gold,"A gold bar",1
9330 data book,"The book of kahn",2
9599 data ***

```

Scrolling

by Paul Blair

Much of the fun of computing is coming across the unexpected. This happened to me the other night (well, morning actually) so here it is, for what it's worth.

The Commodore 64 has a neat routine built in that will scroll the screen up (it uses this every time you type in a new line or print to the bottom of the screen). This routine has a mate that does the opposite - downwards scrolling. Try this little trick:-

```
100 REM DOWNSCROLL OF
    SCREEN
110 REM PAUL BLAIR FEB 84
120 REM COMMODORE 64
130 :
140 REM SELECT WHERE TO
    START SCROLL WITH 'D'
```

```
150 REM D=255 STARTS FROM
    TOP OF SCREEN
160 REM D=0 STARTS FROM
    SECOND LINE
170 :
200 D=0:X=214:V=15:A=53280:
    POKEA,1:POKEA+1,3:PRINT
    "[CLEAR]";
210 READA$:V=V-1:POKEA,
    V:IFA$="END"THENEND
220 PRINT"[CLEAR]";:
    FORT=1TO10:PRINTA$:NEXT
230 FORT=0TO14:POKEX,
    D:SYS59749:NEXT:PRINT
240 FORDELAY=1TO2000:
    NEXT:D=D+1:GOTO210
250 :
300 DATA"[RED,SPACE]SCROLL
    THE SCREEN DOWN WITH THIS
    PGM"
310 DATA"[BROWN,SPACE]IT'S
    REALLY VERY VERY EASY TO
    USE"
320 DATA"[BLUE,SPACE]YOU CAN
    INCLUDE IT IN GAMES AND SO
    ON"
330 DATA"[BLACK,SPACE]LIST THE
    PROGRAM TO SEE THE SET UP"
```

```
340 DATA"[GREY1,SPACE]SEE
    HOW YOU CAN SELECT SCROLL
    START?"
350 DATA"[BROWN,SPACE]HAVE
    FUN. ... PAUL BLAIR"
360 DATA"END"
```

The items in [] are to help show the Commodore graphics symbols used.

The routine has an interesting side effect that I haven't quite worked out yet. Somewhere along the way some pointers get modified, and a LIST straight after running the routine can give some odd things. The solution seems to be to do a PRINT or two straight after, and things work themselves out.

There are probably people out there who could do all sorts of things with this sort of routine. How about it?

By the way, the first three lines are what I like to see in programs, as a bare minimum. I often forget what programs do, and the header lines help me (and others, too). □

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Let some light and colour in through your window

by Paul Regan

All the colours of the rainbow. This little machine code routine can be used to change the colour of all characters in a defined window on the screen.

You can define the window with relative ease. The co-ordinates $x1$ and $y1$ define the top left-hand corner of your window, and the co-ordinates $x2$ and $y2$ define the bottom right-hand corner. x values refer to rows and must be between 0 and 24. y values refer to columns and must be between 0 and 39. Colour values which will select the hue you want may range from 0 to 15.

To use the program, type in the basic loader starting at line 90, together with the data statements.

```

90 p = 49152
91 s = 0
92 for j = 0 to 6
93 read a:s=s+a:pokep,a:p=p+1
94 nextj
95 read t
96 if s(<)t then print "error ",t,s:end
97 if t = 96 then end
98 goto91
100 data 32,253,174,32,235,183,134,1043
110 data 252,166,20,134,251,32,253,1108
120 data 174,32,235,183,134,254,166,1178
130 data 20,134,253,32,253,174,32,898
140 data 158,183,138,41,15,133,255,923
150 data 165,253,201,25,176,78,197,1095
160 data 251,144,74,165,254,201,40,1129
170 data 176,68,197,252,144,64,56,957
180 data 32,240,255,138,72,152,72,961
190 data 166,251,164,252,24,32,240,1129
200 data 255,24,165,210,105,212,133,1104
210 data 210,166,251,165,255,164,252,1463
220 data 145,209,196,254,240,3,200,1247
230 data 208,247,228,253,240,14,232,1422
240 data 24,165,209,105,40,133,209,885
250 data 144,229,230,210,208,225,104,1350
260 data 168,104,170,24,32,240,255,993
270 data 96,0,0,0,0,0,0,96

```

The last number in each data statement is a checksum for other numbers in the line. When the loader is run, any errors you have made should be picked up by the loader, and the checksum displayed. This will make correction of errors fairly easy.

The program is completely relocatable and requires 126 bytes. A safe spot would be in the section of ram immediately above the roms, starting at location 49152. The loader is set up for loading at this location. To re-locate the routine to any other section of memory, simply change the value of p in line 90 to the required starting address.

Use the routine by `sys (p),x1,y1,x2,y2,c` where p is the start



address of the routine. $x1,y1, x2,y2$ are the window parameters. c is the colour (0-15). □

Commodore Classifieds

Next month we are starting classified advertisements in the Australian Commodore Review. So if you have a computer, peripherals or programs you are interested in selling, buying or swapping, get in contact with us; and reach only Commodore owners.

The rates are extremely reasonable; \$10.00 for thirty words or less and 30c for each additional word. The classifieds will be arranged in three columns, and each advertisement will be in a type size that is easy to read.

Just send in your advertisement and your money and sit back and wait for the calls to come flooding in. It may be the best investment you've ever made.

My brother rat in England tells me the astounding news that Commodore have been given the Royal Warrant. Which must have made the other computer manufacturers in England – and there are dozens of them – turn purple with rage. Take for example the case of Uncle Clive Sinclair, the head of Mensa – a society for non-rat like people who have extremely pointy heads and high intelligence – who honestly believes he invented the personal computer in its pure form. He was apoplectic when the BBC chose the Acorn as its official computer for its television series instead of his SX70. What he must have felt when he heard that an American company received the Royal Warrant does not bear thinking about. And what of all those other British computer makers who turn out machines of varying degrees of eccentricity and capability. They are probably all walking around with their noses out of joint.

This rat views the award with delight, for it shows the Royal family appreciates a good thing when it sees it. But what does the Royal family use their Commodore for? To trace their genealogical heritage? Hardly. That has already been done in great detail. To keep track of the blood lines of their race horses? Just possibly. To keep a track of Prince Andrew's girl friends? Marginally.

This rat has it on very good authority that Commodore have resisted the temptation to call their next machine "Corgi". To do so would be "lese majeste".

Over in the United States my American cousin kept his head low and attended the Consumer Electronic Show in Chicago. He reports that many of the fine new exhibits he had seen at the Las Vegas show earlier this year had disappeared totally from sight. Something to do with the developers running out of money. Most of the computer software on show was almost exclusively for the Commodore and the Apple II series. The IBM PC jnr doesn't seem to have taken off in a big way. The public have stayed away in their hundreds of thousands.

Back in Australia, I hear the other Commodore magazine has been going through some fairly strange ups and downs. The original

publisher was Commodore, who handed over to another publisher who employed Mervyn Beamish to put the magazine together. Then the publisher was bought out by another publisher (are you following all this?) and the magazine nearly ceased publishing. Then along came brave Mervyn Beamish to save the day. Now, at least, that is the way this rat understands it, there is every likelihood of the magazine coming out at regular intervals and making all those people who parted with subscription money less unhappy than they have been in the past.

The more Commodore magazines we see published the happier we will be. It is one area where the greater the variety, the more choice the reader has. Even the publisher, a naturally misanthropic soul, agrees with me on this.

The latest news from my transatlantic cousin is that an Australian publisher, whom he referred to as a "mug punter", has paid an immense amount of money to publish "Compute" in Australia. Things are, indeed, livening up.



A Melbourne rat – there are many of them – told me that "The Australian Beginning" contained the worst collection of Commodore programs he had ever seen. I find that difficult to believe. Surely such a forward-thinking organisation as "The Australian Beginning" – a name that rings with patriotic fervour – would have the finest and latest of programs to offer their paying punters. Not so, my Melbournian rattish friend assures me. The first game on the extremely slim list is Hangman. And I was playing that nearly seven years ago. There are only about a dozen programs and they are all, so I am assured, of the same standard. But what has made my Melbournian friend froth into his

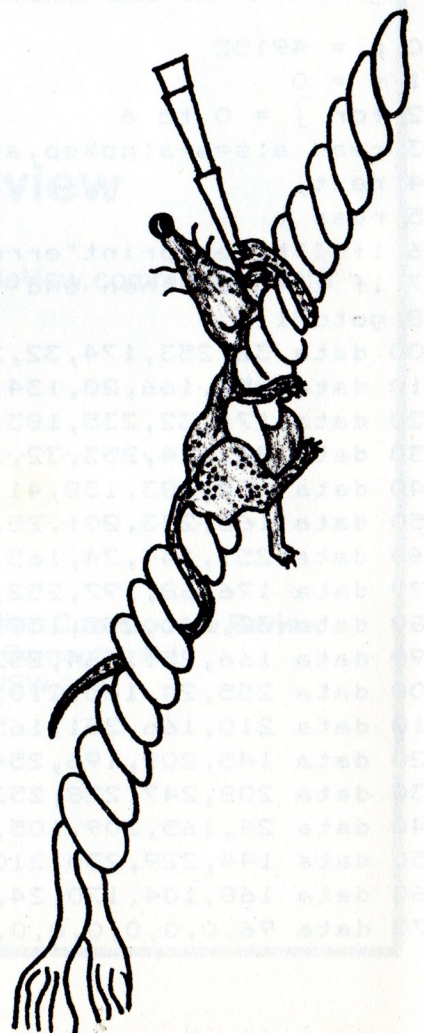
cheese is the fact that the "Australian Beginning" insists you use their communication program to download their programs. Now this... I totally refuse to believe.

I have a fellow rat working at News Limited (there are a lot of us there, especially in editorial positions) who tells me that the editor of this august magazine, Andrew – "Anything for a Dollar" – Farrell is going to start writing in the serious pages of "The Australian" on the subject of Commodore computers. Does the managing director of Commodore know about this? Has he been warned?

Andrew Farrell writing about Commodores in public could set the personal computer back ten years.

My own guess, backed by a rat's intuition, is that Farrell has heard about the Royal Warrant and is trying in a crawling, toadying fashion to get in on the act.

Fat chance. Even a lowly rat such as myself has more hope of gaining the Royal Approval. At least, I am on the side of the English language. Not against it, like Andrew Farrell.



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