A Gareth Powell Magazine

The Australian COMMODORE REVIEW

Vol 1 No 2 $3*

Registered by Australia Post Publication No. – NBP 6656
*Recommended retail price

The Vic 20 – A machine for all seasons

The question of a disk drive

Games

A Brother and Sister for your 64

Executive's shorthand

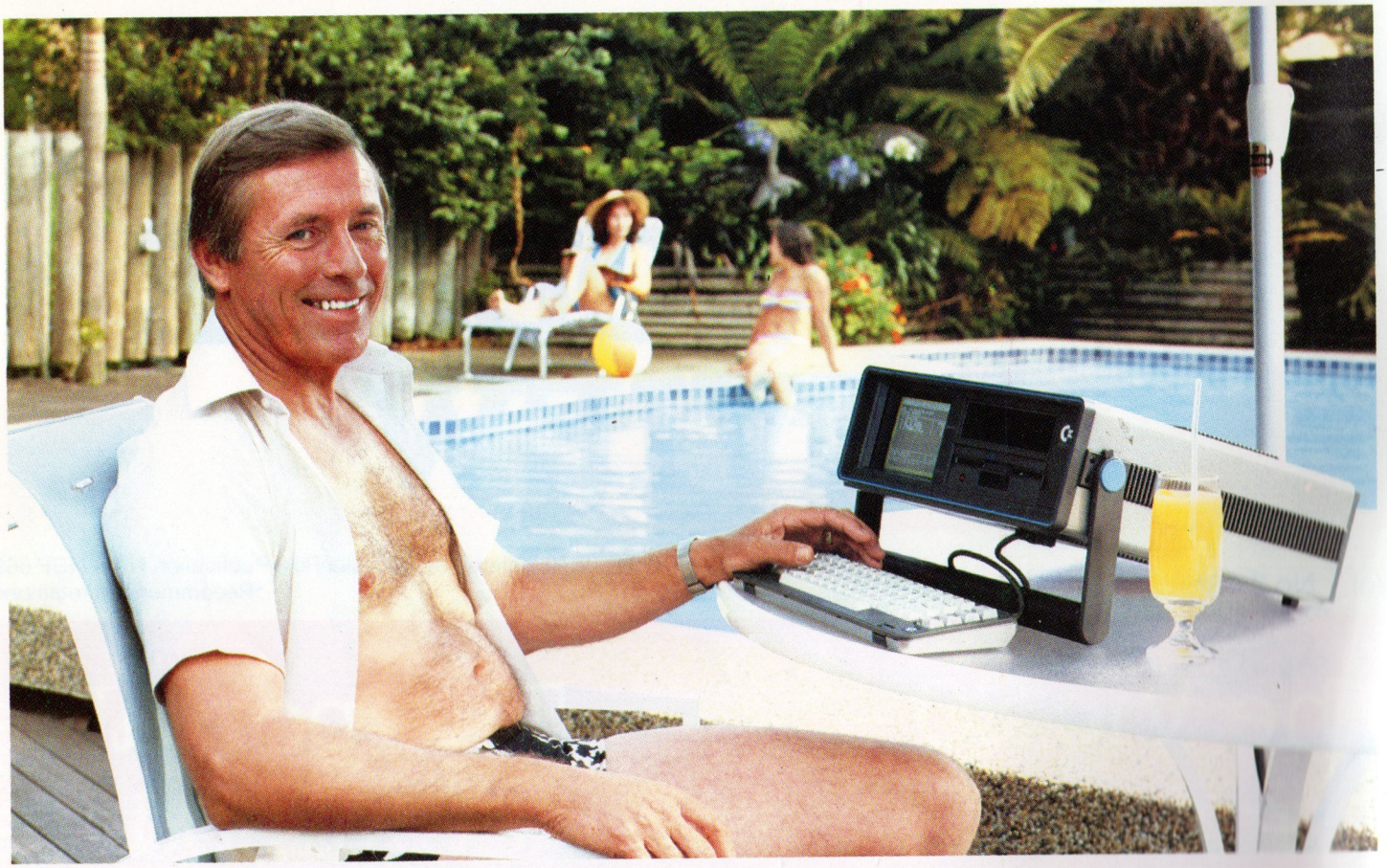
The portable Commodore SX-64

Buying the right printer

View from the Hold

Data communication

A printer for grandmother



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Top Rear, 4 Carrington Rd,
Randwick, NSW 2031
Phone: 398 5111

Published by Gareth Powell Pty Ltd

Editor: Gareth Powell
Contributing Editor: Andrew Farrell
Art Director: Avrille Goldsworthy
Production Manager: Sian Powell
Photographer: Gary Williams

Advertising Enquiries:
Craig Hoskinson,
Top Rear, 4 Carrington Rd,
Randwick NSW 2031.
Phone: 398 5111

Subscription Manager:
Tina Spathos
Phone: 398 5111

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We now come to the second issue. In itself a small miracle that was not expected by Commodore management.

The second issue of a magazine is always a hard one to produce. You are still losing money. Circulation has still to be sorted out. Advertisers are waiting to be convinced of the worth of the magazine. Authors have not heard of you. Subscribers are reluctant.

But in the case of "The Australian Commodore Review" the second issue has proved far easier than anyone could have anticipated.

This is simply because of the massive interest in the Commodore range that exists throughout Australia.

With the initial issue we printed a modest 7,000 copies which we thought would be a safe if cautious amount. We were wildly wrong. In some shops the magazine sold out in three days.

We are refining our distribution system, we have taken on a full time marketing manager and we are upping the print run. However, if you want to be certain of a copy of the magazine which will arrive on publication date then at the moment the only advice we can give you is to subscribe.

Distribution of magazines in Australia was ever a tricky subject. It will be months before we are properly sorted out. Until that time subscription may be the only sure way.

This second issue marks my last issue in the editorial chair. Pity that. I was getting to enjoy it. Coming in as editor is Andrew Farrell, a programmer and writer who knows more about the Commodore 64 and Vic 20 then is decent for a young lad.

I shall still be writing for the magazine – working on the basis that if I can write about it then anyone can understand it. Owing to the fact that I am no great brain where computers are concerned. Or, as it has been alleged, much else.

Despite the change in editorship

and the appearance of a whole slew of new names, this magazine will remain the laid-back, haphazard sort of publication that I enjoy. I hope you enjoy it as well. □

Gareth Powell

If you're keeping up with Commodore – Commodore is keeping up with you

by Duncan McCann

Which way is Commodore going? A question that everyone asks and Commodore normally seem extremely reluctant to answer.

Even within Commodore there are many executives who are not quite certain what the next step will be. However, with information we have obtained from America and statements we have received from various Commodore executives – many of whom do not wish to be named – we have pieced together the following story which is a fairly accurate appraisal of what is going to happen in Commodore during the next few years.

The Commodore 64 continues

The first thing that is absolutely certain is that the Commodore 64 as we know it will continue for several years to come.

First of all there is a commitment in writing by Commodore to the Victorian Education Department that Commodore 64 will be available until the beginning of 1986. It seems very likely that it will continue for several years after that.

The reasons are simple. With a new contract that is running with the Victorian Educational Department it is probable that nearly three million dollars worth of educational software is going to be created for the Commodore 64 in the next 12 months.

If that software exists it would obviously be madness not to have the machine in production to supply an ever-increasing market.

New software

Why is there nearly three million dollars worth of educational software being created for the Commodore 64?

Again the answer is simple. In the agreement with the Victorian Education Department, Commodore have agreed to spend 30 percent of their gross revenues in the state of Victoria. And they have decided that that money will be used, in the main, for software development.

As the total contract is five million dollars (or possibly even more) then the minimum amount of money we're going to see spent on educational software by Commodore is one and a half million dollars.

But there is more.

The Victorian Education department has set up its own software publishing arrangements providing a group of teachers with an independent software house – Logica.

Which means that there will be a flood, a deluge, a plethora of software coming out of Victoria in the next twelve months. Making the Commodore 64 one of the best supported machines for the Australian educational system.

On to the 1990's

As a result we will stick our neck out and say that the Commodore 64, basically as we know it today, will still be around in the 1990's.

It may be that a voice simulation device will be built in.

It may be that there will be additional graphics facilities added to the basic machine.

It may be that the new peripherals will be introduced (including a twin floppy disk drive) but the Commodore 64 as we know it is safe for the foreseeable future.

Vic 20's future

The situation with the Vic 20 is rather different.

The Vic 20 is still selling very well

Nigel Shepherd, Managing Director of Commodore.

in Europe and Australia and its manufacture will continue for the foreseeable future. All those happy soothsayers who have stated that production has already stopped are wrong, quite wrong.

True, production has stopped on the American version. But not the European or Australian.

In the United States – a land where they want tomorrow's goods today – the Vic 20 is going to be phased out in the very, very near future. Like now.

To replace it will come a machine called, possibly, the Commodore 60 or maybe the 164 or maybe even Fred. Commodore were never strong on getting the names right at an early stage. This will contain 16K of Rom and will be upwardly compatible with their new line of machines which are called the 264 and the 364.

Despite protests to the contrary it will have those nasty little rubber keys which wobble when you touch them. Just the same as the Sinclair.

And before anyone tells us that the IBM PC jr suffers from the same affliction, we know. And we also know that IBM are about to replace those keyboards with proper keys that make a satisfying clunk when you tap them, instead of a weak wet Nelly squelch.

On display

We saw one on display at the Sydney Commodore Owners' Club and we decided on the spot that it was not for us. The keys were too small and too close together and the rubber, although in fairness had a built in click, did not sit happily with our keyboard technique. No doubt it will find its market.

But it is worth noting that Timex who distributed Sinclair's "Spectrum" in the United States have totally pulled out of the market at a loss of many millions of dollars. We accept that this new machine is infinitely superior to the Spectrum – but it looks very similar and it is possible that the market reaction will be the same.

Incidentally, the aforementioned Sydney Commodore Owner's Club produces its own magazine called 'Peripherals'. It is one of the best of the user group magazines that we have seen in Australia for any machine, and in the current issue it presents information about the new 264 and 364 along with a photograph of the 264.

David (Old China Hand) Harvey swears he didn't supply them with the information or photographs.

Where then did they acquire them? From the Good Fairy?

After you have got the news from the Sydney Commodore Owners' Club you can get it in a slightly more expanded form from us.

264s and 364s

In fairness, since 'Peripherals' appeared there have been several news leaks as to what Commodore are going to be doing in the next few years and we have tried to combine the stories from all the different sources together. They now appear to make sense.

The 264 and the 364 will be known as the "productivity machines" and they will have the same graphic set and upwardly compatible basic language and compatibility with current peripherals such as disks, monitors and printers. With the minimum conversion they can take full advantage of present software.

Both have enlarged keyboards but the larger 364 has a built in 19 key numeric pad which gives it 86 keys in all.

They both feature built in voice capability with an included vocabulary of over 250 words – and additional words can be added through disks and cartridges.

The new series has over 75 BASIC commands which gives a vastly superior BASIC to any other computer which is comparably priced. (Prices have not been fixed yet but we are led to believe that they will both be under $500).

Both of the machines offer a built in machine code monitor and "window" capabilities.

Built-in programs

Also built in will be a spreadsheet, a word processor, a data base and a communications package. These programs built-in to ROM will include Commodore 3 plus 1 which is Lotus 123 in drag.

Both machines will offer unbelievable graphics with 128 colours made up of 16 primary colours with 8 luminance levels for each colour.

Worth explaining the bit about luminance levels.

It is just like having a dimmer fitted at home instead of an electric light switch so that you can adjust the intensity of the light. Full on when you are trying to read "Australian Commodore Review", extremely subdued when you are trying to take advantage of the baby sitter.

Same principle applies here.

A programmer will be able to adjust the light intensity of any pixel in order to achieve the right effect.

Why no one has thought of this for computers before bewilders us.

Why we haven't thought of it before annoys us.

It is such a natural progression. A large quantity of brownie points to Commodore for this development.

Carrying on with the graphics for the moment there will be 320 by 200 pixels resolution on the monitor and a split screen text with high resolution graphics ability will be available.

New disk drive

Group 264 has 32K ROM 64K RAM. The 364 has 48K ROM. Most importantly both machines have as a new peripheral a very fast disk drive.

Elsewhere in this issue we offer a reward to anyone who can tell us where and how the current Commodore disk drive can be fitted with a turbocharger so that it will get off its fat rear and move. For the 264 and the 364 this question is already answered.

It is important to realise that the 264 and the 364 are intended primarily as business machines. They are not, repeat and stress not, intended to replace the immensely successful Commodore 64. However, they can, of course, like every other business machine, be used for games.

They will not have the sound facilities of the 64 and will work perfectly adequately with a monochrome monitor.

Commodore 64

The Commodore 64 with a 1541 disk drive, a MPS 801 printer and a 1701 colour monitor.

No 80 columns

Within this new range of machines it appears, as we write, that Commodore is going to stick totally with the concept that 40 columns is enough.

The fact that every other computer manufacturer believes that for business purposes 80 columns is absolutely essential, does not appear to have affected Commodore's attitude.

One Commodore executive said to us that the reason for this was that 80 columns on a colour television set was effectively unreadable.

And we agree.

However, the percentage of business computers that are going to be bought to be used on a colour television set must be minute.

No doubt that when some of these machines become widely available (and don't expect to see any of them in Australia until the very end of this year, if then) the first thing that's going to happen is that people are going to be working on 80 column options.

PC compatible

Commodore are also going to be launching a new machine which will be IBM PC compatible. They are going to have at least two versions.

One is a portable and the other a desk top.

The portable is based on the Bytec Hyperion which was an extremely well reviewed but badly marketed transportable in America. Bob Drew who tested it says that it is the best compact he has ever tested. That from a man known to be begrudging in his praise. (Bob Drew once referred to an article written by the publisher of this magazine as "the most irresponsible piece of journalism in the last twenty years". Flatterer.)

Strangely, in the initial stages it appears this machine will only be sold outside the United States of America.

The portable will run on the intel 8088 microprocessor (exactly the same as the IBM PC) and will use MS-DOS.

At the same time Commodore will be launching a desk top machine which will have 256K of RAM and dual disk drives. It will use the Unix operating system and will be based on the Zilog Z-8000 16 bit microprocessor.

This machine will create some immediate problems. It will mean, for example, that the 700 – a machine that was designed by Porsche in Germany and seems to have been an ill-fated venture from the beginning – will disappear almost as soon as it has appeared.

Secondly it will mean that one of the features that has distinguished Commodore over the years will, in the case of these models, be dropped. That is the transportability of programs from model to model.

Transportability

It would appear that the programs of the 64 will be transportable to the 164/264/364 series of computers because the eight bit microprocessor on which they are based is merely an enhancement of the one in the 64.

But the new IBM PC compatible transportable and the desk top machine with its unique operating system are another kettle of fish altogether.

They will have a vast amount of software available for them right from the beginning but they will not be compatible in any way with other Commodore machines.

As far as the 64 is concerned we're going to see a tremendous number of new peripherals being released in the near future. There is going to be a mouse – which will make it as trendy as all the other machines – a light pen and, so we are assured on very good authority, a touch screen similar to that on the Hewlett Packard.

The fact that it is generally considered in the trade that the touch screen is a gimmick does not appear to have stopped Commodore. They will also be introducing a twin disk drive for the Commodore 64. We have not been able to asertain whether it will be any faster than the current disk drive which is, beyond doubt, the slowest disk drive in operation for a personal computer anywhere in the world today.

Summing up

To sum up, the future of the 64 seems secure.

The Vic 20 will continue to be sold in Europe and Australia.

A completely new line of machines called 164/264/364 which are intended primarily for a different market than the Commodore 64 will be launched in Australia probably at the end of this year or the beginning of next.

And a portable machine which is IBM compatible will be available on the Australian market some time next year, as will a desk top machine which will be Unix driven and relatively cheap as office computers go, will be launched sometime towards the end of next year.

What is absolutely certain is that the financial success of Commodore will continue for some years to come.

In the microcomputer industry – an industry where fortunes are made and lost overnight – Commodore continues to be one of the greatest success stories. □

A screen with a built-in headache – the portable Commodore

by Gareth Powell

The machine is called 'An Executive Computer'. The rationale behind that title and the design of the machine is that an executive can have one beside his desk and take it home with him in the evenings. This way he can at least look as if he is slaving away for the company at home.

From the outside it is not dissimilar to the Osborne except that it is rather smaller and not lopsided. It has an immensely strong carrying handle which is rather reminiscent of the grips that you use (not me, I remain pale, weedy and interesting) on a Nautilus machine at a keep fit gymnasium.

The Commodore SX-64 is finished in a pleasant gun metal grey plastic and looks extremely professional.

When you undo it the top comes down to form the keyboard. The keyboard has on the right hand side four function keys which by toggling with the shift key have 8 separate functions.

The keys are laid out in the traditional QWERTY format but there are two cursor movement buttons at the bottom right hand side.

In the Commodore tradition, there are two buttons at the top right hand corner of the keyboard one for "Inst Del" the other "Clear Home".

On the left hand corner of the keyboard there is a "Run Stop" key and a Commodore insignia key.

One disk drive

From the front the machine has one built in disk drive but it will shortly be available, in the United States at least, with a second disk drive.

The screen is to the left and it is a small thing in four colours which I dicuss at great length elsewhere.

To the right is an opening control panel which allows you to tune the colour and the sharpness of the picture on the television screen. On top of the machine is a cartridge opening for loading cartridge programs.

SX-64 in the operating position

The machine from the back

There are two control sockets which can be used for joysticks. Next to these is a DIN video outlet followed by another DIN serial outlet which can be used connect to a printer.

Next to that is a user port which can be used to connect yet another disk drive.

The machine has the great advantages of being transportable. It is almost portable. I use portable in the sense that I can carry it around in my brief case all day without feeling knackered.

Transportable means that I can carry it a fair distance without getting an instant hernia. Transportable because it depends upon a main supply.

It is in fact a mobile version of the Commodore 64. It can be used as a complete business machine provided, and only provided, that you use an auxiliary monitor.

Because, as I state elsewhere, the greatest problem with the machine is that the colour screen, cannot, by definition, give you sharp readability if you are over the age of 40. Or under the age of 40 for that matter.

It is not easy to read the words that you put in using a word processing program.

I tested with Easyscript, one of the best word processing programs I know and which I have tested considerably on the 64. It is still a great program and it still works

extremly well.

But, no matter how you fiddle around with the colour control, no matter how many colour combinations that you try for the background and the text, it is still damn near incomprehensible once the screen is full.

Two solutions

There appears to me to be two solutions to this.

One is to use a small portable monitor which defeats the object of the exercise.

The other is to use some form of magnifying glass over the screen as was done with the original Osborne 1.

If this machine becomes immensely popular – and after the review by Erik Sanberg-Diment it seems very likely that it will, then there is no doubt that some bright entrepreneur is going to be offering a clip-on magnifying glass in the very near future.

(I have to report in fairness that Andrew Farrell found this no problem at all. He is totally enamoured with the machine which may be because he has much younger eyes than I).

It's difficult to know exactly how Commodore could have got around this problem within the parameters of the machine. Possibly one way would be to have incorporated a colour killer switch which would have taken out the red and the blue and merely left the green on the screen.

This would have meant far better definition of the characters and the screen would have resembled the standard phosphor green which is widely in use in business.

Splendid machine

Apart from that one single caveat this is a splendid machine which is unique in that it offers full colour in a portable format.

Rereading this review I see that it might be thought that I am going on for too long about the screen problems. On reflection, I don't think so. This is a business machine that will be used with business programs.

Unless you use a supplementary screen or a large magnifying glass its a machine better used for playing games than for doing real work.

When I came to review the Commodore SX-64 I initially intended to write some very harsh words about it indeed.

However, after I had been using it for a while I read in the "New York Times" the comments of one of the industry's major pundits, Erik Sanberg-Diment.

He was of the opinion that it was one of the best portable computers that he had ever operated. However, he was in complete agreement with me in one area.

And that is the difficulty in dealing with the small screen. He said: "One design feature of the Commodore which I have difficulty dealing with is the five inch (measured diagonally) colour screen. The actual viewing area measures three and three quarter by two and three quarter inches, a size to which my eyes do not fit comfortably. Still, the image is reasonably sharp, and for non-portable use it is easy enough to hook up a large monitor".

There I have to fairly violently disagree with him.

The size of the screen is the single biggest drawback of the machine.

If it is used in the text mode it is almost totally unreadable for anyone with normal eye sight. And my eyesight is far from normal. Having spent a life time peering at murky screens covered with strange symbols I need glasses on my glasses to read anything but the largest script.

(A perceptive and malicious reader suggested that was possibly the reason why the first issue of this magazine – now a rare collectors' item – was so full of errors. Not so. I had to practically write the whole damn thing myself until I found some other intelligent Commodore users who could write for it. Having achieved that aim the quality of the magazine will improve. It could hardly do otherwise. But I digress. Back to where my eyesight is bad.)

I use a personal computer for three main reasons – word processing, spread sheet analysis and data bases. I do not use them for games except for review puporses. Tied as I am to a backbreaking schedule of deadlines I have no time to play Zork, or indeed anything else. As a transportable machine for games I am sure that the Commodore SX-64 is without parallel.

Indeed, I intended to head this article "The machine designed for the business executive who plays with himself" until I realised that it could be misunderstood and give offence to readers of what is, after all, a family magazine.

For word processing it is imperative that you should be able to read the screen clearly.

For spreadsheets it is even more imperative if such a modifier can be used. On the Commodore SX-64 this is not easy. After a session of a couple of hours or so I have to take two Panadol and have a long lie down. □

SX-64 – ready to go

Dear Sir

It is excellent to see the appearance of an Australian magazine specialising in Commodore computers. Given the standard set by some other popular Australian computer publicatons, it is perhaps a bonus that you have started out at such a high standard, typos excepted. The droll humour is particularly welcome in what can often be a rather dry subject. I wish you every success and hope you build strongly on such solid foundations.

In addition to a broad compliment, I would like to comment on the EASY SCRIPT article. It seems to me that you made a bit of a chore of loading files. You might like to try this method:

After the program has entered EDIT mode

1. PRESS F4: puts you into DISK mode
2. TYPE +$ and PRESS RETURN: loads the directory into the memory
3. If your desired file is on top of the list GOTO 7.
4. PRESS F1 then D : starts the delete process
5. PRESS CRSR DOWN until you have 'ranged' all the files above your desired file
6. PRESS RETURN: the 'ranged files will dissappear
7. PRESS F1 then L then F2: your files will load

It seems a lot of words but in practise is simple and avoids ?FILE NOT FOUND ERROR.

A subject I would like to see covered in a future edition is the 1541 disk drive. My interest lies particularly in the very high failure rate and methods to improve reliability.

At meetings of the Commodore Users Group (ACT) members have been regularly complaining of disk drive problems so at the first meeting in March a quick survey was undertaken.

Of the 80 members present, 62 had 1541 disk drives. Of those 62, 16 had failed. Of those failures, 15 were due to head mis-alignment.

After discussion with dealers and technicians, it seems that the accepted reasons for these failures is directly related to the units design.

The drives use cams to position the read/write head. The cam is attached to a spindle shaft. Unfortunately, the cam and the shaft are of similar metals. When the drive gets hot with use (very hot when used intensively with data base software) the cam and shaft expand at different rates resulting ina loosening of the fit. If the head is then jarred, there is potential for a change in the head alignment.

Add this design fault to the current trend in protecting software with "bad blocks" which jar the head severely and we have the cause of the problem i.e. using the drive causes it to heat up and then loading a program such as Easy Script or Superbase 64 etc, begins the process towards head mis-alignment.

Obviously, formatting a new disk will have the same effect and the more intensively the drive is used the quicker the problem will occur.

A number of methods to avoid the problem are currently being considered by members, among which are included:

1. A boycott of software protected by bad blocks. This is not likely to have much effect as we are such a small voice in the world.
2. The use of Lok-tight or something similar when head re-alignment is performed. It is too early to tell whether this provides a long term solution, but nevertheless it obviously has a major element of closing the door after the camel has bolted!
3. Fitting a fan to the drive. Rather like aspirin for a cold, this treats the symptoms rather than the disease. It also introduces the question of how to filter the air to avoid dust contamination.
4. Removing the transformer and housing it in a separate box, like the power supply for the 64. This is potentially the best answer as it removes the greatest source of heat generation, but it is fairly dramatic and may be beyond the skills of many users.

Our assumption is that this problem is not a special blight visited on Canberrans but nothing is appearing in the Australian press. Are you aware of similar problems being experienced by other users (groups) and do you have any other suggestions?

I look forward to future editions of the Australian Commodore Review and wish you all the best of luck.

D.J. Brown

Ed. *This problem of disk drives is really going well beyond a joke. The story that is put out by Commodore is that their disk drives are slower than death in order to make them more reliable. This is unadulterated codswallop. My guess is that these disk drives originate from Hong Kong. They were never intended to be made in quantity because Commodore never anticipated the enthusiasm that the 64 would engender. As a result the disk drives are an afterthought. But the time has come for them to get their act together and provide a fast, reliable disk drive at a reasonable price. You will see elsewhere that we are offering real money for anyone who can help us do some conversions. Your wrath is understandable. It is only matched by mine. Gareth Powell.*

Dear Mr Powell,

Having had two recent experiences of long delays in (warranty) repairs, along with several unsuccessful attempts to find out information, I am hoping you will publish my complaint about the excessive time that Commodore is taking these days.

My first experience was back in October last year, when I wrote to Commodore about a new ROM chip for my 1526 printer. The reply stated that a replacement "will be supplied as soon as possible", and mentioned a delay of about 4 weeks. That was six months ago, and I have ONLY NOW received the replacement ROM after my dealer went in personally.

Complaint number two concerns my 1541 disk drive, which misbehaved at the youthful age of ten weeks. It was returned by my dealer on 24th February for repairs. A letter from me and a visit by my dealer on Friday 6th April have still not discovered any trace of it.

I keep hearing rumours of a massive backload of repairs. I know of one other hapless user who had his machine in the repair shop from just after Christmas until late February.

Just what is going on at the Commodore repair shop? Why is a generally fine computer being spoiled by such frightfully inadequate service?

Peter Stanhope
(Secretary Wollongong Users Group)

Ed. *What is going on at the Commodore repair shop is best described as a state of "Chassis and haverack". No one at Commodore believed that their machines would sell in the quantities that they have. Just before Christmas they did not have one single machine in their warehouse.*

Now machines are coming in for repair they simply are not set up to cope. I wish I could be more hopeful but with the massive orders that are coming in from Victoria I wonder, truly I wonder, how in God's name they are ever going to get their repair facility sorted out. One can only hope, pray and write abusive letters.

Dear Sir,

Your first issue of Australian Commodore Review was very good. We are a computer dealer that sells many brands of computers including Commodore. Most of my customers are first time users and have great trouble walking the first few steps. Your magazine seems to fill in the spot. A lot of people do not know what word processors and data bases are let alone what they do. The articles and reviews done on the above proved very informative and I sold many copies of the magazine purely for those two sections.

The only problem I saw was the rather biased view of the writer towards Commodore Australia. I don't believe you see the whole situation, clearly not from the dealer or customer point of view. Let me make clear a few points.

You are correct in saying the Commodore 64 is an excellent machine. But it does suffer from quite a few problems from a hardware and design point of view. The major problem is the speed and reliability of the 1541 disk drive. Why Commodore ever built a drive like that I'll never know. The cost to manufacture the thing must be far more than the computer itself. Some customers of mine and personal friends have had their drives back to Commodore up to four times for services and alignment. The fact that Commodore's spelling program is so slow is the major fault of the drive rather than the program or computer itself.

Why do Commodore insist on making products with serious hardware/design faults? Take the new SX-64.

Great little machine but it still suffers from the slow drive and lacks the option of hooking up a cassette player or a colour television both of which the people buying will want to do at some stage.

Another problem is the lack of any built in commands to take advantage of the colour, graphics, sound, joystick and sprites built into this otherwise fantastic machine. First time users are so confused with all this difficult to remember and to use peeking and poking. Many people believe that this was the reason the Commodore 64 was not put on the government contract.

The manuals that come with the machine are both badly written and in many cases incorrect. Please keep in mind that the Commodore 64 is aimed at the consumer electronics market and that I would estimate that over 70 percent of the people using the machine have never used a computer before and/or are children. We have told Commodore the problems with the manuals, what the mistakes are and even how to fix them. They have done nothing.

Why do Commodore announce things that are not and/or may never be available. Introduction to Basic Part 2 took almost a year to become available. Easy Calc, Easy File, Future Finance, Home Babysitter, Pool, Gorf and Simon's Basic which are all in Commodore's sales brochure have to my knowledge never been available or if they have in amounts so small that they should not have been released in the first placed. Is there a law about this?

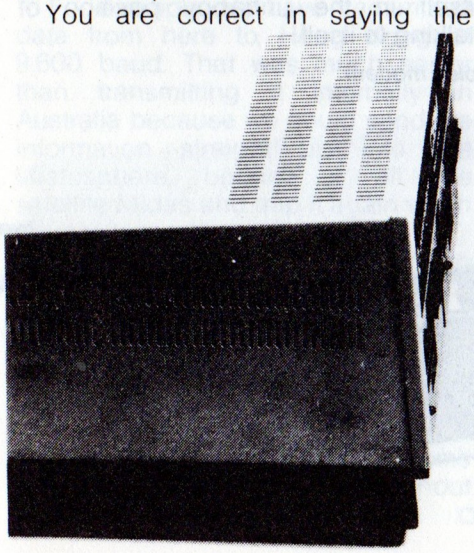
Support from Commodore to its dealers and customers is nil. The average time to get any Commodore product serviced is over eight weeks. Should we as dealers have to swap over a newly purchased 64 for a new one then have to wait and be out of pocket for over two months for the computer or drive to fixed and returned. Should a customer have to wait over two months for a computer to be serviced which is only a matter of hours old. If Commodore is having so much trouble keeping up with service they should simply put more service people on or make the people they have now work week-ends if necessary until the huge pile of faulty equipment is cleared.

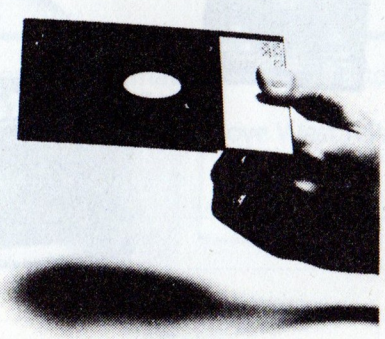
You are by now thinking why do we continue to sell Commodore. Well that's pretty hard to answer. The main reason is simply that despite all its faults the Commodore 64 is a good liitle machine. We have faith in the machine itself rather than Commodore. It's what the people want and it's at the right price and the support from third party venders is very good. We will hang in there until Commodore sort themselves out – maybe.

A Commodore Dealer

P.S. For obvious reasons I am withholding my name and address.

Ed. *These are but a sample of the letters we had on the same theme. That the basic machines are marvellous and that the disk drive and the service are double dreadful. We are presenting the whole batch to Commodore management. Perhaps they will comment in the next issue. Or perhaps not. As the case may be.* □





Data Communication

Data communication is the transfer of information between one location and another. In most cases it means the transfer of data between two computers.

The transfer is normally carried out over existing telephone lines.

For it to work your computer has to have a Modem which stands for MOdulator-DEModulator. This modem translates computer binary – that is all those one's and zero's in a computer program – into spurts of noise at given frequencies and sends it down the telephone line.

The speed at which the modem can send and receive this information is called its baud rate.

A baud is a measurement of transmission speed – 300 baud is the equivalent of 300 bits per second, which is something like 30 characters a second.

To get it into perspective, the standard teleprinter works at 80 baud. So if you hear a teletype operating you can work out that at 300 baud the standard computer is about three and a half times faster.

When a computer is linked through its modem to another computer (which also has a modem) they both have to know that they are continually on the line.

To do this the modem on your computer sends out a Carrier Tone which tells the other modem that indeed your computer is there and will be transmitting.

The modem at the other end sends back its own carrier.

If either of these carrier waves is ever missing from the line then the communication link between the two modems has been broken and it has to be re-established.

Standard language

When you're communicating through modems you have to use a language and the standard language is ASCII (that stands for American Standard Code for Information Interchange). It's used by almost all computers except, of course, Commodore who have their own version. Inserting an interpreter is extremely easy and we will publish one in an early issue of this magazine.

If your modem is set up so it can both transmit and accept information at the same time, it's called full duplex.

When you are operating in full duplex you can carry on, as it were, a conversation with somebody on the computer at the other end of the line.

If your modem is only transmitting or receiving at one time (not both) it's called half duplex.

When you're in the half duplex mode the modems are set up to manage the telephone line so that only one modem is transmitting at a time.

Ready to send

When your computer wishes to send information it lets the modem know by a signal called RTS which stands for Request To Send. Your modem then checks to see if there is a carrier present on the telephone line. If there is a carrier present that means that the other modem is either transmitting or preparing to transmit.

If no carrier is present your modem turns on its carrier to take over control of the telephone line. It then sends back a signal to the computer called CTS which stands for Clear To Send. It's only after all this has happened that your computer starts to pump out the information.

By and large full duplex is used where you are responding immediately to information coming in.

Half duplex is used when blocks of information are being sent between computer and computer. For example, if you are downloading programs which are being sent in from the other end.

When you're operating full duplex mode if the transmission and the receiving frequencies were exactly the same then the modem might find itself in the unhappy position of talking to itself.

A Dataphone II 300 baud duplex modem

Originate and answer

Modems therefore communicate using pairs of frequencies. For example, it will transmit on frequency A and receive on frequency B. This is called the Originate mode and the Answer mode.

Once you have your modem connected to the telephone wire you can then access other computer users and you can also access large data bases.

In Australia the best known is the Australian Beginning which contains in its storage fairly substantial quantities of programs which you can download into your computer.

The Australian Beginning had, indeed, a very rocky start.

But it now appears to have hit its stride and we can expect it to expand rapidly in the near future.

Probably the biggest data base accessed by users is the Source which is owned by Reader's Digest. It contains messages and information on almost every subject known to man. And you can send messages and telexes via your computer.

300 baud, the speed at which most people communicate is still extremely slow. More and more systems are allowing you to use 1,200 baud (both the Source and the Australian Beginning do this), which is four times as fast.

Faster communications

In the near future we will see systems improved to the extent where really high speed data transmission is possible.

For example, we have transmitted data from here to Hong Kong at 9,600 baud. That was much easier than transmitting it internally in Australia because we could send the information straight up into the stratosphere, bounce it off the satellite Midas and trap it again when it got to Hong Kong.

There is relatively little or no interference once you get outside the earth's atmosphere and therefore the effective distance between the two modems was very short and the quality of the line was very clear.

It is quite possible that in the near future we will see in Australia systems which allow transmission throughout Australia at speeds equalling this. □

Buying a printer

If you're in the market to buy a printer there are four ways in which you can travel. Let's look at them one by one.

The first is the thermal printer which creates an image on heat sensitive paper.

Its greatest advantage is that the machine is normally extremely quick and very quiet.

Its greatest disadvantages are that thermal paper is not cheap – about $2.50 a roll – and discolours with age. As well, the figures and letters are not well formed.

However, if you want a printout of a program that you have written then a thermal printer may well be the very machine for you. It's worth noting that the biggest difficulty most beginners have with these machines is loading the paper. We've been doing it for years and we still have problems.

Permanent photocopy

It is also well worth remembering that if you want to convert your printout into a permanent copy then you will need to photocopy the print out. All very easy if you have a photo copier handy. A drag if you don't.

The second way to go is with a dot matrix printer. These have improved massively over the past few years, and have dropped tremendously in price. The quality of the print face depends upon the number of pins which are used by the machine to make each individual letter.

On some early machines, such as the Seiko, there was only one pin.

More common is a six pin machine and now we are seeing twenty four pin machines which produce what the trade loves to call "letter quality" printing.

The great advantage of all dot matrix printers is that they can be programmed to produce a variety of types, they can be extremely quick, and they are relatively cheap.

How cheap?

How cheap is that? Clones of the Epson machine are readily available for something under the $400 mark and you may be able to better that price if you shop around. (Thermal printers using heat sensitive paper are even cheaper – but the initial saving is soon eaten up in the cost of the paper.)

The drawbacks are that if you use a dot matrix printer in its fastest mode the quality of the type deteriorates and the dots forming each letter become separated and readily apparent.

As well, the noise level increases dramatically.

However, for almost every printing job that most readers of this magazine will ever want from a printer then the dot matrix is currently the answer.

For the purposes of this review we will ignore the Commodore range of printers because they are going to be thoroughly dissected elsewhere. Their bugs – and they are numerous – will be listed and solutions given. In a general article on printers we cannot do a full critique of the Commodore printers – that requires space in which to vent our rage.

Dot matrix

The two biggest makers of these dot matrix machines are C. Itoh and Epson. We are of the opinion that Epson are heavily involved in the Commodore printer producing program and as a result we view them with jaundiced suspicion. As a result we tend to favour the C. Itoh because it appears to be inherently more reliable and because it does not waste a page of paper every time you start a new letter – which sadly, the Epson does.

There are many imitations of the Epson available and they all work after a fashion. Frequently they are the same machine with a ducky new name and badge stuck on the front. It is fairly easy to recognise their origin once you have inspected a few printers.

A 5 x 7 character matrix is standard on average dot matrix printers but 9 by 9, 9 x 14 and even higher densities are becoming generally available.

The latest move in dot matrix printers is colour which the ubiquitous Andrew (the Torvill and Dean of Australia) Farrell reviews elsewhere in this issue. To say that he is impressed is to understate the case. The importers, Warburton Franki keep making whimpering noises in the hope that Farrell will return it. To no avail.

Commodore have also announced that they are going to introduce a multi-colour printer. We have seen and, although it is early days yet, the quality of the colour printing left much to be desired. No doubt this will be fixed before the machine is released to the Australian public. No doubt.

Ink jet

Another type of printer is an ink jet printer. These are virtually silent and produce excellent quality print. However the jets have a tendency to clog up and spray ink and their price puts them outside the range of all but specialised word processing systems.

Endangered species

After dot matrix printers and jet printers comes an endangered species, the Daisy Wheel Printer. This is generally an overgrown electric typewriter which produces a quality of printing exactly matching that of the best electric typewriters.

For years it has been the favourite in offices because it made word processed documents look as if they had been individually typed by a typist. There is a sort of strange snobbism about that.

The problem with these printers is that they are quite expensive, relatively noisy, and every time you wish to change a type face you have to stop the machine remove one daisy wheel and insert another. (The term daisy wheel comes from the appearance of the type wheel which contains all the letters of the alphabet. These wheels incidently, are extremely fragile).

In our opinion, within three years there will be almost no daisy printers in use anywhere in the world because coming up beneath the daisy wheel printers are the improved

dot matrix printers. To sum up, the daisy wheel printer will soon be pushing up daisies.

The dot matrix printers have not, as yet, got to the state where the end product looks as clean as that produced by a daisy wheel printer. But it is not far off.

With the impeccable timing that Commodore is known for in the release of its peripherals we have a new daisy wheel printer coming from them towards the end of this year. Its greatest virtue is that it will be relatively inexpensive. But it will be a cheap dinosaur.

The year of the laser

Because tolling the final death knell of the daisy wheel printer is the laser printer. These are just starting to become available and typically will be on sale for something just under $5,000 before the end of this year.

Expect prices to plummet within the next three years.

Laser printers produce a type face as clean as a daisy wheel but at greatly increased speed and without the fragility of the daisy wheel itself.

They can be programmed to use an almost infinite variety of types.

At the moment laser printers are producing type of a density of 300 dots to the square inch but in the relatively near future we will see that density doubled and even quadrupled.

When that happens, the laser printer will produce documents which will look as though they have been typeset by a professional phototypesetter.

We have already tested one of these printers and the graphics and type it produced were the best we have ever seen. It also produced one foolscap page every five seconds. And did it in absolute silence. On ordinary bond paper. Not only would it cope with a wide variety of type faces, it also produced superior graphics as well. The limitation now switches from the printer to the computer.

Performance parameters

The printer that you choose is very dependent on the task that you want it to perform.

Before you make a decision make sure that you have a complete sample of all the type faces that are available on the machine in question.

And that your word processing program and your spread sheet program will interface with the printer easily and readily.

If in doubt, write a letter to the shop where you are buying the printer confirming this point. Then, if it doesn't work out that way, you have a recourse.

Graphics

The only printers that can easily handle graphics are the thermal printers, the dot matrix printers, the ink jet printers, and the laser printers.

A daisy wheel has the greatest difficulty in accepting a graphic dump. Indeed, it is virtually impossible.

Speed

When it comes to speed, dot matrix printers typically produce 60 – 80 characters per second although some of them run up to 120 characters per second or even higher.

Daisy wheel printers typically run from 25 – 50 characters per second.

Thermal printers run happily at speeds of 120 cps and much higher.

No one knows how fast laser printers will eventually go to but the speed currently available is beyond the needs of all but the busiest of commercial offices.

Almost all printers contain a buffer of some sort. These are sometimes quite small but can be 4K, 16K or even 64K.

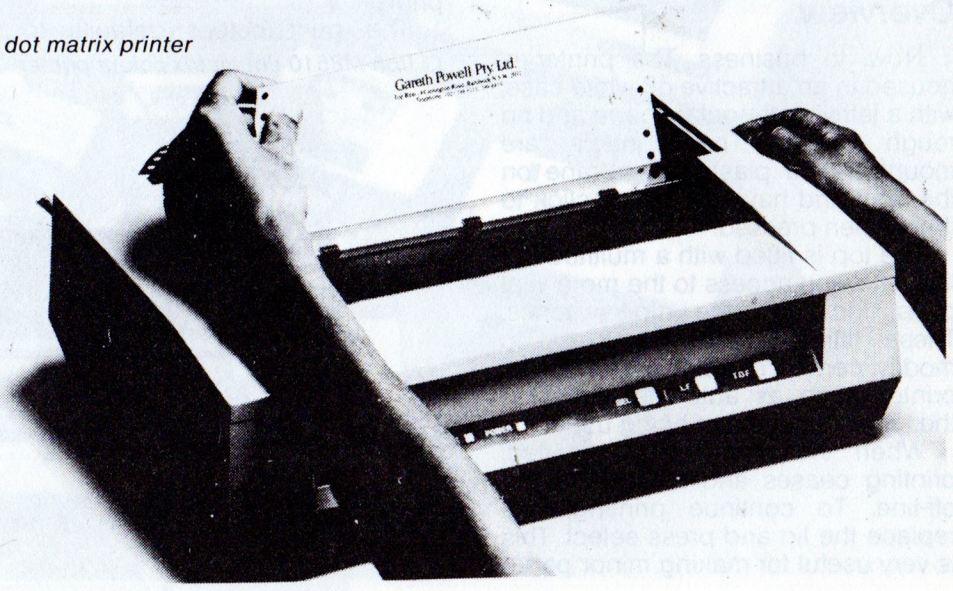
What happens then is that your computer sends all of the information over to the printer in one fell swoop.

The printer gets on with the job accessing the information from the buffer. This releases the computer for other work.

If the printer does not have a buffer it can frequently be bought as an add-on special. But buffers will not, repeat not, handle mailing lists because the machines needs to keep accessing the disk. Naughty salesmen frequently forget to point out this important fact.

After a disk drive a printer is a computers most important optional peripheral. Choose it with care. □

A dot matrix printer



A printer for your Grandmother

by Andrew Farrell

There are a lot of printers available for $500 or so that print one line a second and will do all the average user will ever require. However, for time-conscious hackers and the business world where time is money, this simply will not do.

What I need is a printer that can really work at high speed and still have a few interesting features to keep me amused when the work slacks off.

When I tested Superbase on the Commodore MPS-801 printer, it worked fine, but I could have used up our entire supply of coffee waiting for it to finish.

Fast solution

To the rescue comes the new C. Itoh 8510C colour printer. You may have seen it at the PC show earlier this year and stopped and watched in amazement the multi-colour pictures it was producing.

But is it fast, or as Diana Fisher would say, does it come in pink?

How about 180 CPS, or in layman's terms around two and a half lines per second. (CPS stands for characters per second.)

Overview

Now, to business. The printer is housed in an attractive off white case, with a fairly rectangular shape and no rough edges. The controls are mounted in a plastic membrane on the front and have a positive click to them when pressed.

The top is fitted with a multitude of lids, allowing access to the more vital parts, including the dip switches. These little beasties allow us to modify certain characteristics of the printer, such as auto-line feed and the type character set being used.

When the main cover is lifted, printing ceases and the unit is put off-line. To continue printing, just replace the lid and press select. This is very useful for making minor paper adjustments or changing the ribbon.

A large lever to the top left switches between friction and tractor feed. At the back you'll find the centronics connector and a removable panel for the optional RS-232 interface.

Tractor feed paper enters through a small slot in the rear and friction feed through the usual slot on the top. Very little noise escapes through these points, making printing a relatively quiet job.

See how she runs

Well, now we have a rough idea how it looks, let's have a closer look at how it prints. First the ribbon. Easy, fits first try. The ribbon cassette on this version has three colours; a black and white version of the printer is also available.

The paper was a little trickier, but after a short yarn to our revered and elderly publisher (expert in C. Itoh printers if little else) I discovered that the tractor feed tends to eat cheap paper. No problem, use the friction feed.

With Easy Script, it worked like a dream. The 8510C has a useful 2K buffer so that once the whole file is in the printer's temporary storage area, you can continue working while it prints.

The print colour defaults to a pleasant blue in well formed 8 x 8 or 7 x 9 characters. It has plenty of print modes, from super and sub-script to bit-image colour graphics.

Everything you would ever want to vary is variable and there is also a draft print mode for extra speed and less quality. However, I had one small problem which tended to hinder my progress.

That is the manual. Perhaps it is a direct translation from Japanese. The information is all there, but it's just very difficult to find even during daylight hours. Perhaps someone should explain the 1001 reasons for including an index as an essential part of the next version.

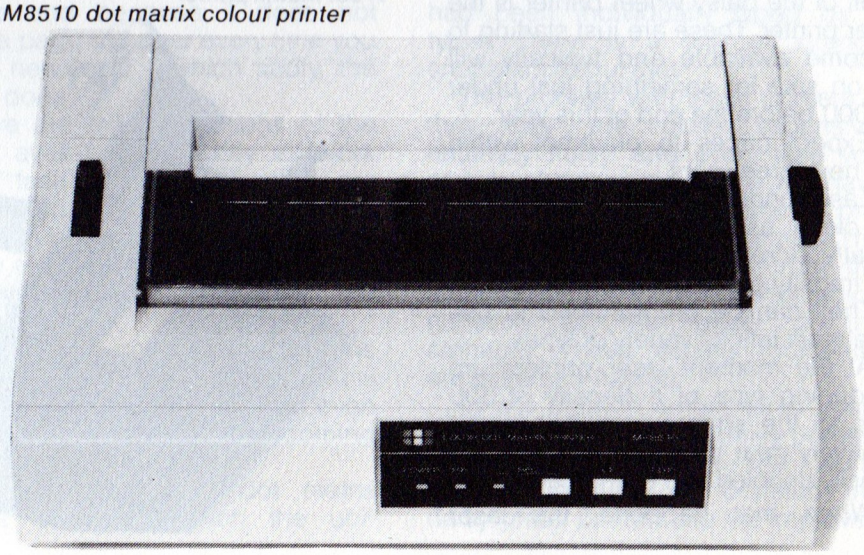
Other features

I really like this printer. I have just discovered it has forward and reverse line-feed, variable margins, a Greek character set and user definable letters.

Overall, it is highly reliable and walks all over most other printers for speed and quality. For the home user, a great colour graphics machine, easy to use and plenty of pace. Business users will love the colour for reports and the near letter quality print for letters.

Coming soon from Warburton Franki at something over $1,000 including tax. □

C. Itoh M8510 dot matrix colour printer



The Vic 20 – a machine for all seasons

Sean Mcsullea is somewhat nutty over the Vic 20. Nothing in itself wrong with that. We think it a splendid machine ourselves. In every issue Sean will be letting the light of his Celtic countenance shine upon the Vic 20, new programs, tips, hints and other jolly things.

Having used a Vic-20 for the past few years, I feel that I have built up a considerable amount of knowledge and would be happy to share it with you by answering any questions you have concerning any aspect of the Vic.

Firstly, I would like to cover a few of the topics that many people seem to have trouble with, the first being the dreaded four line phobia which seems to catch most new programmers.

Have you ever been busy programming and come to the end of the four lines when you have more to enter which has to go on the same line?

Crunching

Well, there is a way to get around that problem. This is done by "crunching" the long commands on the line. Use the cursor keys to go back and change these words to their abbreviated form. For example, you could crunch the word "poke" to [p] [shifted o] or the word "print" to a question mark. After doing so delete the remaining letters and you will notice the extra room left on the end of your line. Also all spaces in your program are totally unnecessary (except within a print statement) and only take up room on your line. After listing the line, all abbreviations will disappear and your line will be printed in full despite the fact that it takes up more than four lines. (The book that comes with the Vic 20 explains all the appropriate abbreviations for the commands.)

Quote mode

Another problem which seems to affect many Vic-20 users is the "quote mode". When within a print

The Vic 20, with a range of optional accessories

statement all the colour and editing keys are substituted with reverse graphic characters: eg, you may have seen that a cursor down command is substituted with a reversed Q. It is therefore possible to make a complete mess while attempting to enter or edit your line. Pressing return will get you out of quote mode and return the use of your cursor controls and so forth, but will also enter the line, in its present state, into memory. However, pressing shift, together with return, will take you out of the quote mode without entering the line into memory. The manual supplied with the Vic neglects to mention this fact and it was purely by accident that I found it.

Also here I have a few peeks and pokes that might interest you and possibly help in the construction of your programs:

Change character colour to the value of C
POKE 646,C
Auto repeat all keys
POKE 650,255
Change text to lower case
POKE 36869,242
Speed up cursor keys to the value of S
POKE 37157,S
Detect whether commodore, ctrl or shift key pressed
PEEK(653)

I will leave you with a mystery program which I am not going to tell you about. Simply enter and run this program for an interesting result that may surprise you.

```
10 print"[clr/home]":
poke36879,25
20 fort=828 to 854:readd:
poket,d:next
30 sys 828
40 data 169,71,141,20,3,
169,3,141,21,3,96,72,8,
173,36,145,41
50 data7,141,134,2,40,
104,76,191,234,234
```

I would be interested in hearing from you about any user groups or meetings established or to be established in the future so that I may pass it on to readers looking for such clubs.

Next month I hope to answer your queries and tell you how to convert keyboard games to work with your joystick.

If you have any questions for me please sent them to:

Australian Commodore Review,
Top Rear, 4 Carrington Road,
Randwick, NSW 2031.

Till next month, keep trying and above all enjoy yourself.

(God bless the lad. What he is willing to do to keep Vic 20 owners happy. It's like a good deed in a cruel world. – Editor) □

The Vic 20

Who's keeping up with Commodore?

The Commodore 64 is designed and priced so that you can pile on the peripherals. Like a disc drive, printer and even a printer plotter. You can own the Commodore 64 AND disc drive and printer for little more than you'd pay for many other computers alone.

With 64K memory, outstanding colour graphics, a music synthesiser to rival the professionals, a fantastic range of games cartridges and full upper and lower case keyboard.

It's outstanding!

C= commodore COMPUTER

Keeping up with you.

Commodore Business Machines Pty. Ltd.
5 Orion Road, Lane Cove NSW. 2066. (02) 427 4888.

Please send me more information on the Commodore 64™

Name _____

Address _____

BMS/CC157 Postcode _____ Phone _____ CM

Executive's shorthand

One of the greatest problems facing users of personal computers is the keyboard. It doesn't appear to be such an insurmountable problem – after all hundreds of thousands of young typists pound merrily away at the keyboard all day long. But it is.

The problem lies in the fact that typing is not an easily acquired skill. (This is no time to go into the fact that the keyboard on the typewriter and the computer were originally designed specifically to make typing difficult and slow, not easy and fast, so that the mechanism wouldn't jam). Typists typically go to full time school for several months to build up to any sort of half way decent speed.

Yes, there are courses where you can learn touch typing using the latest methods.

Yes, there are programs for almost every personal computer that will teach you how to touch type.

But these take time. And time is what most busy executives do not have available in abundance.

Minimising the keyboard

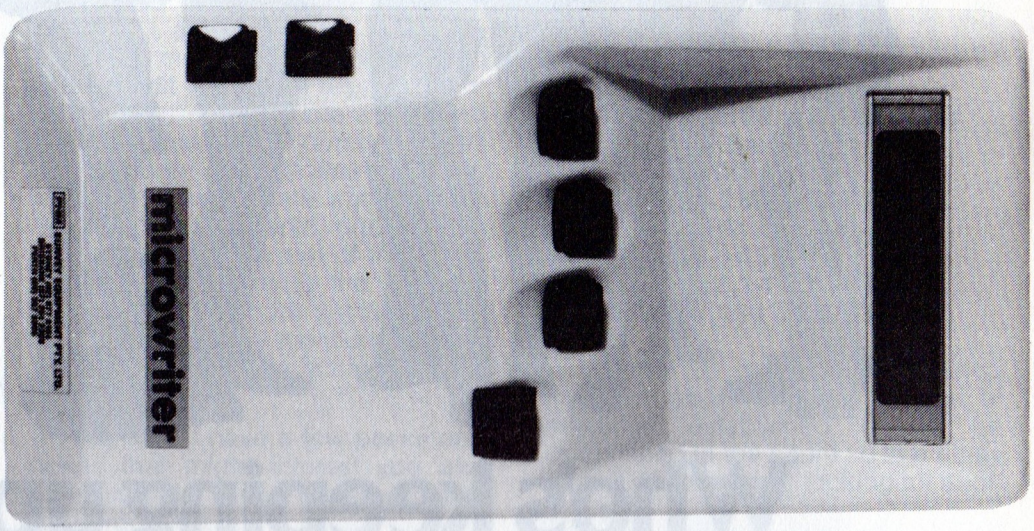
As a result many personal computer manufacturers are now trying to find ways to minimise the use of the keyboard.

The mouse – available through Microsoft for the IBM PC – the touch screen of Hewlett Packard, the voice recognition system of Texas Instruments. Commodore is, of course, going to give us the lot. Not all at once. Not all this year. But probably before the end of next year.

All of these are moves in the right direction but they still leave us with the problem of using the keyboard because none of those solutions totally obviate the need to type some information in at some time.

One answer to this vexing problem is the Microwriter.

I am using one to write this article and my fingers do not at any time stray over the keyboard of my personal computer. Instead, I am sitting in state with my Microwriter on my knee typing away at a speed which rivals that of the ordinary hunt-and-peck typist.



The Microwriter

European origins

The Microwriter has been around in Europe for some years and is widely used by executives who have neither the time nor the patience to retrain themselves as typists. It is the invention of an American, Cy Endfield, who was responsible for the movie "Zulu".

The machine has six buttons which fit very precisely the fingers of one hand. By using these six buttons in various combinations you can type in as many letters, notes, memoranda that you care to.

When the memory is full (which is about after five quarto pages) you can download the material into a microcassette dictation machine and then carry on writing again.

One hundred sheets

On the miocrocassette machine that I have been using – the Olympus Pearlcorder R905 – it is possible to record about 100 sheets of quarto on one side of a cassette.

When I want to transfer the material to my personal computer I transfer it through an umbilical cord with an RS232 plug on each end at a relatively high speed – 1200 baud to be precise.

That's when I am using it in what you might call the remote mode.

However, I also have an adaptor which allows me to connect the Microwriter to the screen of my personal computer so that I can see what I am typing on the big screen. Because the Microwriter only has a small screen which displays 14 characters at once which makes advance editing difficult but not impossible.

Proficiency

The $64,000 question is – how long does it take to become proficient?

It depends.

Learning the basic alphabet can be done in twenty minutes to half an hour. This may seem unlikely, even impossible. But it is quite probably true.

The record for learning the full alphabet is something under two minutes and in half an hour you will be able to write without looking at the crib cards which are thoughtfully supplied as pyschological support. (Worth pointing out that the books of instruction that come with the machine are the best written we have ever seen for any machinery connected with a personal computer).

Full speed ahead

Once you have the basics conquered you ramp up (a new phrase which we heard from an American computer manufacturer) to

full speed.

According to the Microwriter people you should be at the stage where you are writing faster than normal handwriting within a week of starting to use the machine. That doesn't mean a solid week of practice – it just means writing your notes and letters on the machine instead of turning to your ball point pen.

After using the Microwriter for a few weeks you will be up to your final speed, which will be faster than your normal handwriting – perhaps 50% faster, perhaps more.

And, of course, what you write will be completely legible and will load into your personal computer with the greatest of ease.

The Microwriter works from rechargeable NiCad batteries and one full charge will normally last you a week of use. As the machines lie in their cases on the way from England for some time you may find, as we did, that the Microwriter will need charging every day for the first four days before it is up to its full capacity. No great problem.

Replacing the keyboard

Will it ever replace the typewriter keyboard?

Originally I was going to answer "no" and then go on to explain that the Microwriter's major use would be as a personal notetaker and input machine for the busy executive. But I have been playing around with the machine to such a great extent that I have started to rethink that statement.

There is a form of shorthand called Speedhand which uses the characters of the alphabet to represent words. "t" is the, "tt" is that.

Relatively easy to learn and very quick in action. Not as quick as, say, Pitman's or Gregg's, but a hell of a lot easier to learn.

I have written a small routine into a Commodore 64 computer which automatically translates Speedhand back into normal text when it is loaded into the Commodore. However, it is, as yet, full of bugs. When it is debugged we will give it to readers of this magazine for nothing. At no charge.

When this program works properly I will be able to use the machine as a shorthand note-taker, which increases its speed dramatically.

I have found that even using a simplified version I am now using the Microwriter at speeds which are considerably in excess of my normal typing speed. This experiment is still in its early days and I will report on it full in future issues.

But for the moment I believe that the Microwriter is an excellent machine for the executive who does not want to learn to type but who wants to put information into his personal computer.

No matter what I write here you are never going to believe it as simple to use as it is. The only way that you will be convinced is with a demonstration.□

Multiplan on the Commodore 64

One of the best spreadsheet programs is Multiplan. We have had wide experience using the original spreadsheet daddy of them all – VisiCalc – and we think Multiplan is the first major step forward.

The other spreadsheets that have been available to Commodore 64 users so far have effectively been extensions of the VisiCalc program. But Multiplan is something almost totally different.

It was initially produced by Microsoft and has a series of fairly advanced features which are built-in. These include arithmetic and algebraic functions, variable column widths, the ability to link work sheets and very flexible formatting. Even more importantly it will do alphabetic and numeric sorting within the program.

Self documented

Multiplan is one of the new generation programs that is almost totally self documented.

Once you have started to use it, it is possible to use its on-line reference guide for help any time you get in a jam. All of the commands that it uses are in simple English and you can always ask the machine to tell you what the next step should be.

There are some elegant additions to the program which are not available on the normal spreadsheet, especially the ability to put a lock on critical formulas and numbers so that you don't accidently erase them. Anybody who has ever used a spreadsheet extensively will realise how important this facility is.

Multiplan has been reprogrammed for the Commodore 64 by a company called Human Engineered Software who, it is claimed, are the worlds' largest third-party supplier of software and peripherals for Commodore home computers. Although the Commodore version of Multiplan has had to be modified considerably to fit into the Commodore 64 it has lost little of its power and retains nearly all of the features which made it one of the most popular spreadsheet programs in the micro computer world.

Advantage points

Let's look at some of the points to it's advantage. The training guide and reference manual which introduce you to the system are extremely easy to use.

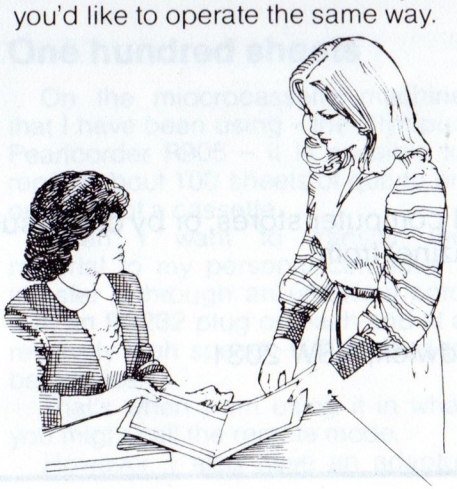
Once you get into the system a collection of help functions and references will ease your forward progress.

You do not need to use peculiar strings of commands or abbreviations to operate Multiplan. You can talk to it in English and, of great assistance this, you are prompted as to the next command you need to use. If you can't understand what that command is, there is a major reference guide built into the program.

Because you can vary the width of all of the columns you'll be able to cram an awful lot more on to one spreadsheet than you can with VisiCalc.

At the same time Multiplan doesn't mind if you type lines of text as headings right across a series of columns. Try doing that with VisiCalc.

Multiplan follows chairman Bill Gates' idea of being "softer software". That means that if you use one command repetitively the program will remember and the next time you use the command it will ask you if you'd like to operate the same way.



English references

Instead of being tied in to using square references when you are setting up your computations you can actually still use English.

Supposing for example you have made a entry which you have called 'Sales' and another entry later on called 'Commissions', when you come to work out the net income from sales you merely type in a formula which is 'Sales' minus 'Commissions' instead of one of those complicated "B24 – D37 * .15" commands that you have use to with other spreadsheets.

If you are using spreadsheets for different aspects of your company you can, at the end, link them all together to give you one master overview. This can be immensely helpful.

Alphabetical or numerical

You can sort your entries either alphabetically or numerically. As a matter of fact we enter all our telephone book entries into Multiplan simply so that we can use this facility.

Every time we get a new telephone number we put the name in and then use an alphabetical sort at the end of the month to give us an alphabetical print out.

It's not the sort of operation that you would normally consider using a spreadsheet for, but Multiplan is so easy to operate we prefer to continue entering our telephone numbers in this way.

Most importantly with Multiplan you can take files that you have used on other spreadsheet programs and transfer them to Multiplan with very few problems.

If you have already built up a fairly large history of your company in one spreadsheet program the probability is that you'll be able to transfer that history over to Multiplan with the minimum of fuss.

All in all an excellent addition to the Commodore 64 suite of business programs. □

The question of a disk drive

by Sean Mcsullea

Should I purchase a disk drive?

Show me a Commodore 64 owner who uses a cassette drive and I'll show you someone contemplating this question. I cannot tell you the answer, as this is basically your choice, but I can tell you the advantages and disadvantages and perhaps make the situation a little clearer.

The first and most obvious of the advantages of a disk drive would be the loading speed. The disk drive is much faster than the tape drive. This is particularly noticeable with commercial programs that come on both cassette and disk, where the tape has to go through the routine of searching for the program and can then take up to 15 minutes to load it.

In comparison the disk drive will locate your program almost immediately and loading time is cut down drastically. Too many people are discouraged from loading a tape program because of the time and trouble involved, especially children.

Greater accuracy

Another point would be that disk drives are more accurate than cassette drives. They very rarely, if ever, have trouble loading programs. As too many of you probably know, the cassette drive is not 100% accurate and on occasion Commodore have been known to unleash hundreds of faulty datasettes on the unsuspecting public.

(Now, now, Sean lad. You mustn't be accusing Commodore of crimes that they may well have not committed. Be charitable. Make allowances. Which of us is perfect? – Editor)

The amount of software produced on disk is about the same as on tape. It is noticeable however that the programs on disk are generally more sophisticated. The reason for this is that a disk drive has the capability to load any program or files it wishes without fast forwarding, rewinding or any of the hassles associated with a tape deck.

The Commodore datasette

The differences between tape and disk could be compared to those between record player and cassette player. The record player has a moving arm which can be placed over any song on the record you care to play and it will play it instantly.

The cassette, on the other hand, will have to be rewound or fast forwarded to the right spot before playing. Many programs use the disk drive in this way.

Active Zork

Zork, for instance, activates the drive after every command to see if your command is valid. Business programs also use this method so that they can store all information on disk and only have one part in at a time. This means that they are not limited to the computer's memory capacity but instead to the amount of room on your disk.

The disk drive does not actually increase the memory of the 64. What it can do is store 170k of information on one disk. The cost of one disk is approximately $4 and can be purchased almost anywhere as almost all personal computers take the same size disks.

So far I have only mentioned the advantages of having a disk drive.

The only advantage of owning a tape deck is of course the price difference. Tape decks, or datasettes as they are called, are considerably cheaper than disk drives. Datasettes sell for about $49 and drives about $500, certainly a substantial difference.

For those of you who do not already own a Commodore 64 or are just starting out, and do not intend using it for business, a datasette will suffice.

You may decide to buy a drive once you have learnt more about the computer and would have more idea at this time as to whether your applications warrant its cost.

Do I need more than one drive?

One disk drive is more than sufficient for most situations. The only application where you may benefit from a second drive would be if you were duplicating disks regularly and time is an important factor. At the moment there is no software on the market which requires a second drive and henceforth no reason to purchase one.

The decision is, of course, yours. But I forecast that in the future we will see the Commodore becoming essentially a disk drive computer. □

A Brother and Sister for your 64

by Bob Drew

Don't worry, I'm not suggesting that you need extra computers to improve your computing power. I am suggesting that there are some excellent aids to further enhance your 64 as a superb word processing package.

I feel that Commodore have been as surprised as anybody at the acceptance of the 64 as a business machine. Nowhere is this shown more in that they seem to have done little up till now to supply to a willing buying public a letter quality printer.

It is rumoured that Commodore are in fact looking to the Juki printer with the view of doing a little badge engineering to come up with the long awaited unit.

(Indeed true. We have actually seen a sample. But don't hold your breath. Editor)

This is a logical step of course as they already market the excellent Easy Script word processing package and all they need is the printer to complete the set.

Great success

In the interim the Brother HR 15 has been used with great success both in Centronics and RS 232 versions. Easy Script is set up to accommodate both versions of the Brother, but I feel that the average user is best served by the RS 232 version.

Most dealers tend to push the Centronics Brother because the set up with Easy Script and the supply of the Centronics cable is a simple matter. I maintain however that if the user is going to use Easy Script and nothing else, well, that's fine, but I would hope that most people can see additional uses of the 64.

If they buy the RS 232 version and use the 1011A interface from Commodore and add to this the Sister Utilities Package, they will have a setup that in the long term will be more versatile over a wider variety of uses.

Utilities program

The Sister Utilities program is designed to help the novice user set up and use the Brother almost immediately.

The diskette contains the following programs:

DOS BOOT and DOS 5.1. The user simply types LOAD"*",8 to have the DOS utility up and running.

The next program is called RS-232 SET-UP – a set of screen instructions with graphics to let the user set up the Brother quickly. It saves time wading through the Japanese-English instructions in the user manual.

BROTHER LISTER gets around the problem of the printer wanting to type 110 characters wide – it allows the user to select any width and even the number of lines per page. It also stops the Brother de-selecting when asked to print certain CBM characters and makes up for the lack of graphics characters by spelling out the cursor and character controls.

The program called TYPEWRITER allows the use of the 64 keyboard as a typewriter keyboard in conjunction with the HR15. It saves you from spending $360 on the keyboard from Brother which does much the same thing.

When the program called HOW TO is loaded as an Easy Script file the user has on screen instructions on how to do underlining, shadow printing etc. The program even shows the user how to control the pitch in multiples of 1/120 of an inch and how to pause to change daisy wheels.

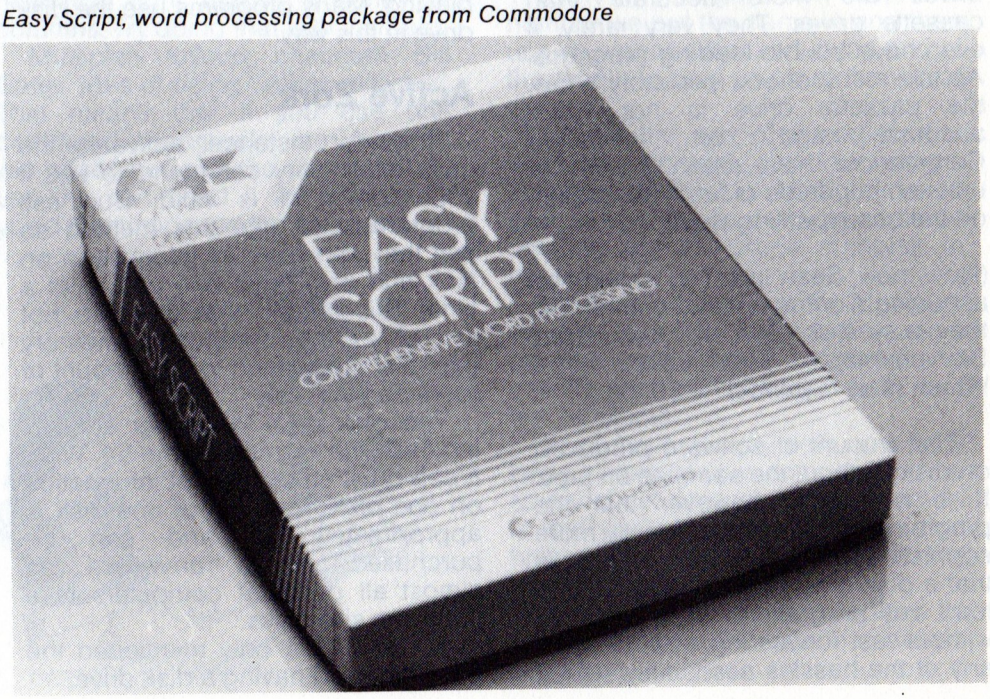
With the quite adequate instruction manual there also comes a diagram of the wiring needed for the connecting cable.

The program was designed and written by Chris Binstead and really does make the Brother a valuable asset for anybody using the printer in a business environment.

For more information on this program contact your local dealer or Pittwater Distributors on 02 939 2858.

(Editor's note. It should be mentioned as a matter of ethics that Bob Drew is not unconnected with Pittwater Distributors. Indeed, he is Pittwater Distributors. Bear this in mind when you read his review). □

Easy Script, word processing package from Commodore



I am not unused to abuse. Rats have to get used to it at an early age. But even I was taken aback by the howls of abuse that arrived on the doorstep shortly after the first issue of this magazine had hit the streets.

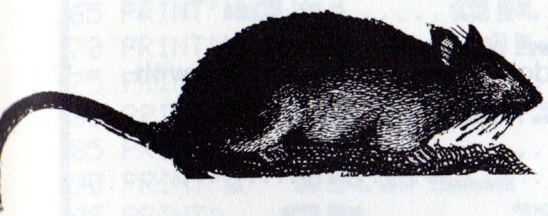
The complaints seemed to cover two fields – disk drives and service.

I have a ratty friend within Commodore itself who tells me things that would never pass the permanently sealed lips of David "Old China Hand" Harvey. He says that the service department is not as smooth working as one would wish (there's diplomacy for you) because Commodore Australia have been caught with their pants down by the success of their sales campaign.

My friend told me that Nigel Shepherd has returned from the trade show in Hanover full of resolve to set things to rights. And that he is asking for suggestions. As always, with low rodent cunning, I am ready to oblige.

Instead of trying to fix together disk drives and printers that plainly have got bugs in them how about removing the bugs in the first place?

That rotund genius of the North Shore of Sydney, Bob Drew, is willing to supply a list of all the bugs in the printer so that they can be rectified at source. Which, as we understand it, is Hong Kong.



An expensive doorstop

The disk drive is another matter.

Accepting for the moment that there is something awfully wrong with that drive – and anyone who doesn't accept it has their eyes closed and their ears stopped up – wouldn't it be a smart move to ditch the little bastard and let it be used for the purpose for which it was designed, an expensive doorstop.

And instead introduce a new disk drive which can access information at speed and with reliability?

Impossible, I hear it cried, in a Scottish accent.

No, it isn't.

This rat knows the back lanes of Hong Kong as well as any other rat and knows that there have been at least five prototypes of disk drives for the Commodore 64 tested in Hong Kong – three based on Shugart technology, two on TEAC.

If this is so, and a Chinese dinner to the person who can prove it is not – why cannot we have these drives introduced into Australia in the near future? Like the month before last.

Diary 64

Next, can I humbly suggest that Commodore invest in a program called Diary 64.

This is a plug-in cartridge which is intended to keep a track of appointments, schedules, birthdays, telephone numbers and days when you should be well out of town before something nasty happens.

This program is ideal for a servicing department. It will tell them when they received the machines, and when they should be ready to go out. It will help them keep a track of the days of the month – time seems to fly so quickly.

As Commodore sell Diary 64 themselves, no doubt they will be able to supply one to the service department at a discount.

Software Galore

In Victoria – a state that produces a superior kind of rodent – all is jubilation because the Commodore 64 quite correctly nosed out the opposition to become effectively the microcomputer of education in that splendid state.

The result is going to be software galore in the very near future.

What this rat would like to know is how much of this software will fit into the curriculum of the Queensland Education Department. Or Western Australia. Or South Australia. Or Tasmania. Or even New South Wales.

This rat's guess is damn all.

Because the jealousy that exists between these departments surpasses all belief.

One would imagine that they are all united in the common goal of providing a better education for the ankle biters of Australia.

No they are not.

In most cases – and Victoria is an honourable exception – they are too busy scoring points off each other.

When this rat's forebears arrived in Australia in the bilge of a trading vessel they were under the false impression that they would find a Federation.

Not so.

What exists is a collection of satrapies (look it up, broaden your mind) that are envious of each other to such an extent that we rats look like a fraternal brotherhood in comparison.

Commodore in the YWCA

This rat was secreted into the Young Women's Christian Association building – a splendid edifice in Sydney – to hear two men from Commodore talk about the future. And they did it very well. One of the better vaudeville acts that I have watched.

No points, however for the audience which was, to say the least, restless. A plump ankle biter near where I cowered fell off his chair. Several others wandered around the audience.

In the middle of the talk a gentleman walked through the audience, went behind the speakers and started dishing out copies of a magazine called, I think, "Peripherals". Or some such title.

In my rat's existence I have never seen such rudeness.

If these gentlemen from Commodore come along in their spare time to speak to an users' club

the least they can expect is that the audience will be relatively polite.

And that the chairman will keep a grip on the proceedings.

Commodore fanatics in Sydney may suffer from bad disk drives, they may suffer from bad printers – but their biggest problem as far as this humble rat can see is their bad manners.

Perhaps "Peripheral" can start a column on etiquette. It is sorely needed.

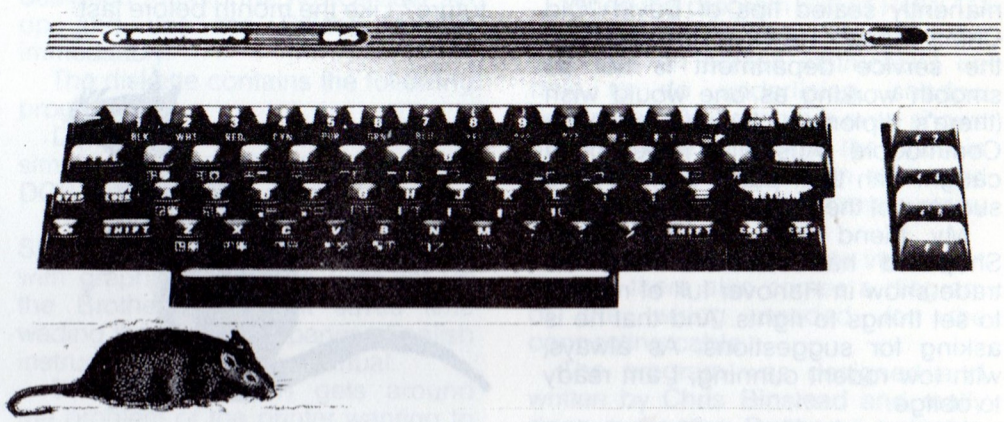
If anyone is wondering why David "Old China Hand" Harvey was not one of the speakers I can inform them that he was busily preparing for his black belt – if that is the phrase I am looking for – in one of the more obscure Oriental arts of self defence. Defence from who, this rat wonders? And a thundering chorus of replies comes back.

Genuine $200 reward

We know that somewhere in the United States a series of successful modifications have been done to to Commodore 64 disk drive to increase its speed by five times and, at the same time, improve its reliability.

This story has reached us from several sources and we believe.

Therefore, in the interests of sanity and a faster disk drive we will give $200 to the first reader who can point us in the right direction so that we can get hold of one of these turbocharged drives and offer the modifications to the horde of eager readers waiting out there. □



Maze Man

This program is reproduced from "Zap! Pow! Boom!" by Mark Ramshaw, distributed by Pitman Publishing, Melbourne.

You start off in a maze filled with dots in the top left corner, although you don't actually appear until you begin to move. As you move through the maze eating dots you gain points.

Soon the maze monsters will be after you and you must take evasive action. If they eat you the game will end, as it will if you eat all the dots.

Eating one of the large red cherries means you can go and eat the monsters for extra points. But after a while they will get over their shock and come after you again. They are coloured purple when you can eat them.

W moves you up,
A left,
D right, and
X for down.
Good monster hunting!

```
10 POKE36879,13:CO=30720:SC=7680:CL=38400:POKE650,255
15 PRINT"                              "
20 FORI=7702TO8164STEP22:POKEI+CO,6:POKEI,97:POKEI+21+CO,6:POKEI+21,225
25 NEXT:POKE8164,252:POKE8185,254
30 FORI=8165TO8184:POKEI+CO,6:POKEI,98:NEXT
35 PRINT"....................."
40 FORI=7703TO8143STEP22:POKEI+CO,1:POKEI,46:POKEI+19+CO,1:POKEI+19,46
45 NEXT:FORI=8144TO8162:POKEI+CO,1:POKEI,46:NEXT
50 PRINT"      .      .      "
55 PRINT"  ..  ...........  "
60 PRINT"  .   .   .     .  "
65 PRINT"   .....  .........  "
70 PRINT"     .  .    .    "
75 PRINT"  ...............  "
80 PRINT"  .    .    .    .  "
85 PRINT"   .  .  .....  "
90 PRINT"     .  .      .  .  "
95 PRINT"      .         .  .  "
100 PRINT"   .  .  .    .  .  .  "
105 PRINT"    .  .     .  .  .  "
110 PRINT"  ...  .   ....  "
115 PRINT"  .   .     .   .  "
120 PRINT"  .  . .........  .  "
125 PRINT"  ...  .    .  .  "
130 PRINT"    ......   .  .  "
135 PRINT"  ......  .  .  .  "
140 PRINT"   .    .  .  .  .  "
145 PRINT"  "
150 DIMX(2),Y(2),P(2),C(2)
155 FORI=0TO2:P(I)=32:X(I)=9+I:Y(I)=12
160 NEXT:Y(1)=13
165 C(0)=2:C(1)=5:C(2)=7
170 DIMA(2),B(2):FORI=0TO2
```

```
175 A(I)=INT(RND(1)*3-1):B(I)=INT(RND(1)*3-1):NEXT
185 P=7703:S=10:F=0:Q=0
200 FORI=0TO2
205 GETA$:IFA$=""THEN230
210 D=(A$="A")-(A$="D")+((A$="W")-(A$="X"))*22
215 IFPEEK(P+D)=46THENS=S+10:Q=Q+1:GOTO225
216 IFPEEK(P+D)=81ANDD<>0THENF=1:S=S+20:TI$="000000":GOTO225
217 IFPEEK(P+D)<>88ORF=0THEN224
218 FORPE=0TO2:IFSC+Y(PE)*22+X(PE)<>P+DTHEN223
219 S=S+50
220 Y(PE)=12:X(PE)=9+J:P(PE)=32
221 IFJ=1THENY(J)=13
223 NEXT:GOTO225
224 IFPEEK(P+D)<>32THEND=0:GOTO230
225 POKEP,32:P=P+D:POKEP+CO,3:POKEP,81
230 PE=PEEK(SC+(Y(I)+B(I))*22+X(I)+A(I)):IFPE=32ORPE=46ORPE=81THEN300
235 X=P-SC:Y=INT(X/22):X=X-Y*22
240 B(I)=0:A(I)=0
241 IFF=1THENB(I)=(Y(I)<Y)-(Y(I)>Y):A(I)=(X(I)<X)-(X(I)>X):GOTO246
245 B(I)=(Y(I)>Y)-(Y(I)<Y):A(I)=(X(I)>X)-(X(I)<X)
246 PE=PEEK(SC+(Y(I)+B(I))*22+X(I)+A(I))
247 IFPE=32ORPE=46ORPE=81THEN350
250 B(I)=0
255 PE=PEEK(SC+Y(I)*22+X(I)+A(I))
260 IFPE=32ORPE=46ORPE=81THEN300
264 A(I)=0:IFF=1THENB(I)=(Y(I)<Y)-(Y(I)>Y):GOTO270
265 B(I)=(Y(I)>Y)-(Y(I)<Y)
270 PE=PEEK(SC+(Y(I)+B(I))*22+X(I)):IFPE=32ORPE=46ORPE=81THEN350
285 A(I)=INT(RND(1)*3-1):B(I)=INT(RND(1)*3-1)
290 PE=PEEK(SC+(Y(I)+B(I))*22+X(I)+A(I))
295 IFPE=32ORPE=46ORPE=81THEN250
299 A(I)=0:B(I)=0
300 IFRND(1)<.5THEN345
301 X=0:Y=0
305 IFB(I)<>0THEN320
310 Y=1:IFRND(1)>.5THENY=-1
315 GOTO325
320 X=1:IFRND(1)>.5THENX=-1
325 PE=PEEK(SC+(Y(I)+Y)*22+X(I)+X):IFPE=32ORPE=46ORPE=81THEN335
330 Y=-Y:X=-X:PE=PEEK(SC+(Y(I)+Y)*22+X(I)+X):IFPE<>32ANDPE<>46ANDPE<>81THEN350
335 A(I)=X:B(I)=Y:GOTO350
345 IFRND(1)>.8THEN235
350 POKESC+Y(I)*22+X(I),P(I):POKECL+Y(I)*22+X(I),1
351 IFP(I)=81THENPOKECL+Y(I)*22+X(I),2
355 Y(I)=Y(I)+B(I):X(I)=X(I)+A(I):P(I)=PEEK(SC+Y(I)*22+X(I))
356 IFSC+Y(I)*22+X(I)=PANDF=0THEN1000
360 POKECL+Y(I)*22+X(I),C(I):POKESC+Y(I)*22+X(I),88
361 IFF=1THENPOKECL+Y(I)*22+X(I),4
365 NEXT:IFTI$>"000015"THENF=0
366 IFQ>216THEN1000
370 GOTO200
1000 POKE650,0:FORI=1TO2000:NEXT
1005 PRINT"■■SCORE"S  □
```

New Commodore games

Program Name: Gothmog
Program Type: Adventure
Cost: $49.00
Form: Disk only

Gothmog is full of pirates and castles and you are, of course, searching for the treasure. But a naughty person has accused you of being in league with a Thief and a Cutthroat who are also after the treasure. You, honest foolish person that you are, want to return it to local authorities to clear your name.

At first appearance Gothmog looks like any other adventure game on the Commodore 64. This is not so.

The game is played not only with the keyboard but also with the joystick.

For example, when you meet the enemy, be it a dragon, thief or swamp demon, the game changes from keyboard control to the joystick and play changes to the arcade type game.

At this stage you may only use such weapons as you have already accumulated. For example, you can only shoot your opponent if you have already gathered appropriate weapons – like a shotgun and bullets.

The graphics in this area leave a little to be desired but are good enough to be fun to play. The idea is outstanding but has the possibility of being a lot more entertaining if programmed to the 64's full capacity.

The game does not compare with the intelligence of games such as Zork or Underworld of Kin because it sometimes takes up to three or four attempts to find a combination of words that it understands. Gothmogs vocabulary exceeds 80 words, but it seems to be very fussy about the way these words are used. You soon become aware of the correct way to enter your commands but at first it is something of a drag.

Gothmog comes with a huge 16 page manual which is very impressive in its presentation and content.

It is designed to teach the beginner the basics of adventure gaming and also provide the experienced adventurer with playing tips and ideas. Because of the manual, I recommend this program to the beginner.

Theme	****
Entertainment	****
Ease of use	**
Use of graphics	**
Value for money	***

Program name: Perplexian challenger
Program type: Arcade game
Cost: $49.00
Form: Disk only

With a name like Perplexian challenger a prospective software buyer is left with no idea of the nature of the game at all. It may be an arcade game, a board game (of some sort) or even an adventure game.

In fact it is an arcade game. (A game is classified as an arcade game when it uses the joystick to control movement and generally requires fast reaction).

The game is similar in design to Atari's Star Raider. The whole game revolves around what you can see out of the front of your ship. You have no physical character on the screen but instead the joystick controls the ship you are piloting.

If you move the joystick to the left everything on the screen bends to the right and vice versa.

Like too many games nowadays it is set in that over used area, Space. There just is not enough of it to go around.

Your enemy are tiny space ships which you must guide into the centre of the screen and then fire on with your lasers. Meanwhile they are firing at you. When hit, you will not die immediately but your shields will be weakened.

At the bottom corner of the screen are your status figures which indicate your amount of fuel, availability of laser power and your shield's energy. These can be replenished by recovering energy pods that the aliens occasionally jettison before exploding when hit by your lasers.

Overall the graphics in this game are excellent, especially the effect of the oncoming stars during the hyperwarp phase which takes you from level to level.

Sound is also used to a great extent and enlivens the game considerably. Only one fault could be said of Perplexian Challenger and that is it only has one mode of play which becomes increasingly difficult as you pass through the levels and does not change very much from the first level.

The game may become tiring after long periods of play due to this but is still a very enjoyable game.

Theme	****
Ease of use	***
Entertainment	****
Use of graphics	*****
Value for money	***

Program name: Cyberworld
Program type: Real time adventure
Cost: $49.00
Form: Disk only

A real time adventure is an adventure where time keeps ticking away while the game is waiting for your input, Deadline is a good example of this. Cyberworld is another.

The game is divided into three parts each with a separate goal.

Your first task is to take over the enemy's ship and return it to your world so that your people may learn from its design and apply its technology in the building of their own ships.

Once this is done your second task is to help fly these new ships and defend your planet from the invading Zaxxars. If you can manage to do this you are then sent on a mission to clean up the galaxy of all pirates, magazine publishers and other undesirables.

Each section in this game is totally different.

The first is joystick operated. You control a figure with your joystick and must do battle with all kinds of robots, obtain a security pass and make your way to the security bridge. After killing all the robots you can fly the ship home. Not easy.

The second level becomes more of an arcade game and you are required to defeat nine waves of

aliens with your laser before continuing on.

Success at this level will take you through to level three which is totally different again. Your keboard operates the control and the game becomes one of strategy.

For example, to move you would be asked "distance/trajectory". You enter the distance in quadrants and the trajectory in degrees. This makes the game a bit more challenging and requires more thought than before.

Overall the Cyberworld is quite entertaining but don't plan on having a quick game.

You will have to wait just short of ten minutes for it to load and you must turn the disk over five times during this period. A monstrous imposition on the player's goodwill and patience. This game would be suited for someone who likes a challenge and enjoys variaton within a game. Cyberworld is practically three games in one.

Theme	***
Entertainment	****
Use of graphics	****
Value for money	***

Hover Bovver

Reviewed by Andrew Farrell

When one writes a game, one always includes several thousand aliens which must be obliterated from the sky! Ah yes . . . the familiar old theme of computer games, which has received a fair hammering from a few concerned individuals, is at last receiving some attention from the programmers.

Jeff Minter, for those of you not familiar with the man, has written several other games which have enjoyed much success world wide. For him, Hover Bovver is a wide diversion from his normal style.

In fact, it would rate highly as one of the more passive games around, except that most people are so confused by the concept that they cease to understand the objective.

Mowing grass has never really seemed a likely subject for a game to me, but believe it or not it can be fun. Yes, you have my permission to read that last sentence again as it may appear a little out of place.

Well, here we are mowing grass, now how do you turn that into a game. Easy. Brilliant music, colourful graphics and a few strategically placed hedges and flower beds. You will also be harassed by your next door neighbor from whom you borrowed the mower without asking.

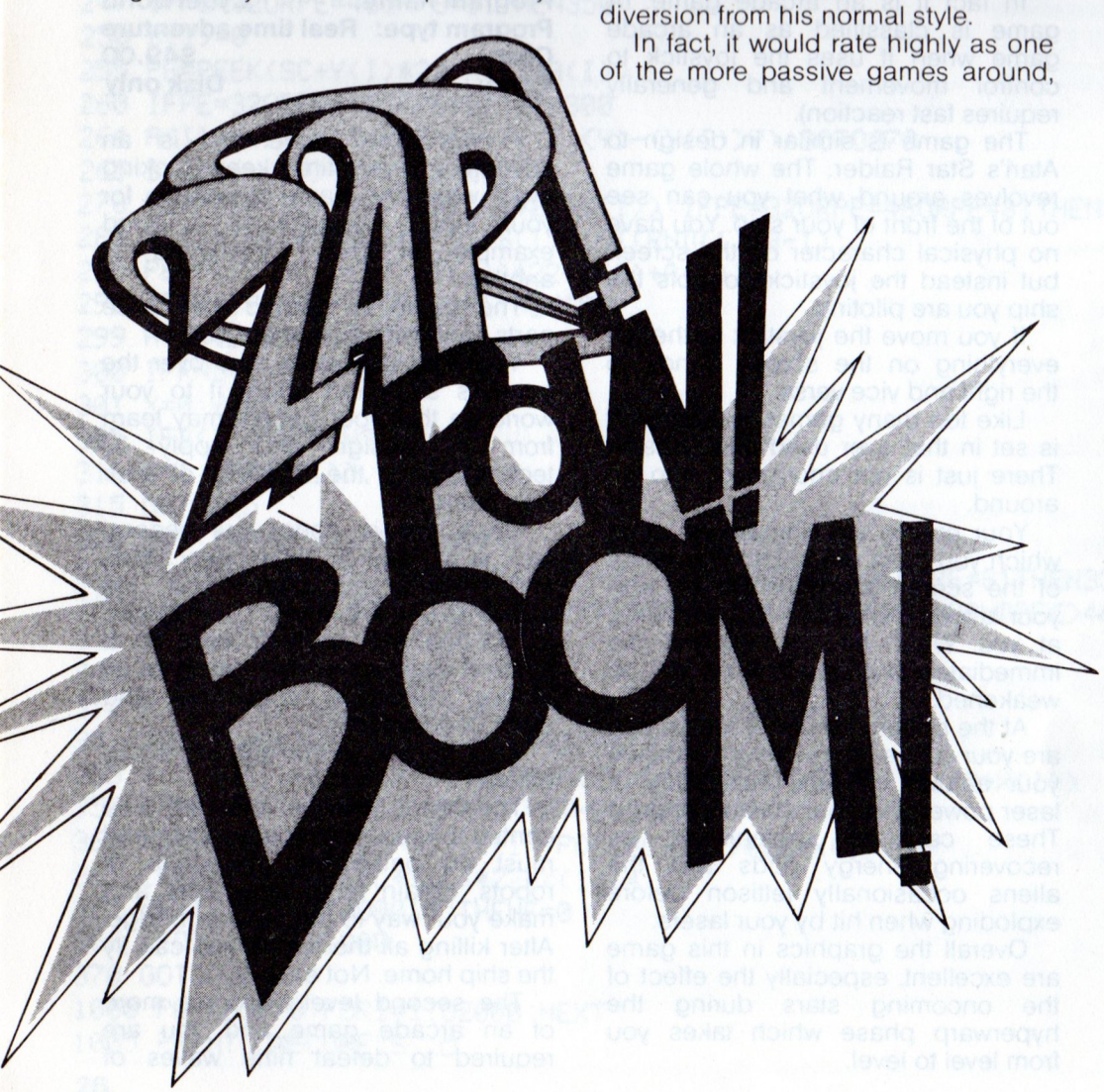
Luckily you have three neighbors, so if the first is quick to grab his mower back, you can always try the next. Rover, the pet dog, is a great help in repelling the enraged gardeners, although even he loses interest soon and is more of a hindrance than a help.

During play, the screen is an aerial view of your typical English country garden, of which there are 16 to plough your way through. Between each attempted mow, Gordon Bennet, whose part you are playing, fetches his neighbors mower from an even more typical english country house.

Thus, the famous tune, "An English country garden", plays soothingly in the background. A well composed display of the 64's music potential.

The accompanying instructions to play Hover Bovver are very well written and include tips on play and a full explanation of the game's finer points. Two players may play alternatively and the top five high scores are displayable.

I think this is a great game, although in this instance, much of it depends on personal preference. Nevertheless, check it out next time at the local computer store.



Game: **Hover Bovver**
Price: **$29.95**
From: **Progressive Software**

Originality:	*****
Graphics:	*****
Music/Sound:	*****
Impact:	***
Addictiveness:	****
Value:	****

Do I play it?: yes! □

An insight into writing adventures

Andrew Farrell is an expert on writing games and has a few of his own on the market. One is a very popular adventure game for Commodore cassette, "The Underworld of Kyn". He is also in the process of putting the finishing touches to an arcade game called "Forest Raiders" which promises to be another chart topper. This article is part one of a series that explains the art of computer game writing, an enjoyable and sometimes lucrative hobby.

Since the dawn of time, way back in the dark ages, man has always enjoyed a little mystery and adventure. The main problem with this pastime is that it usually involves some kind of danger, such as being devoured by a large man-eating beast, or becoming lost in some vast waste land in Tahagheria (about 300 km west of Brakcoit).

As man became more advanced he invented tools to help him with his quest to discover new continents and life forms. Eventually, one unsuspecting explorer stumbled across a computer (pronounced com'pyoot'err) and decided this would be an ideal environment to simulate the terrors of dark caverns and the thrill of finding lost treasures without the impending dangers.

Within the space of several years a large number of these complex simulators were produced. Today they understand complete sentences and occasionally display graphic pictures of the player's surroundings, a few have even been said to have animation and sound.

What a mammoth task for thy humble programmer. Well, if we scale things down a little anyone can write their own living adventure game.

Le Map

The best place to start is with a map and perhaps a good description of all the nasties and goodies your intrepid adventurer may discover. I bet you're trying to remember where you have a piece of graph paper. Disgraceful. Be sure to wrap your garbage in it and then collect a few large sheets of BLANK paper.

To help confuse our helpless explorer the map must contain the odd hidden twist, as very few paths I have ever walked are straighter than a dog's hind leg. Unfortunately, graph paper does not lend itself to inserting strange connections between each room or box.

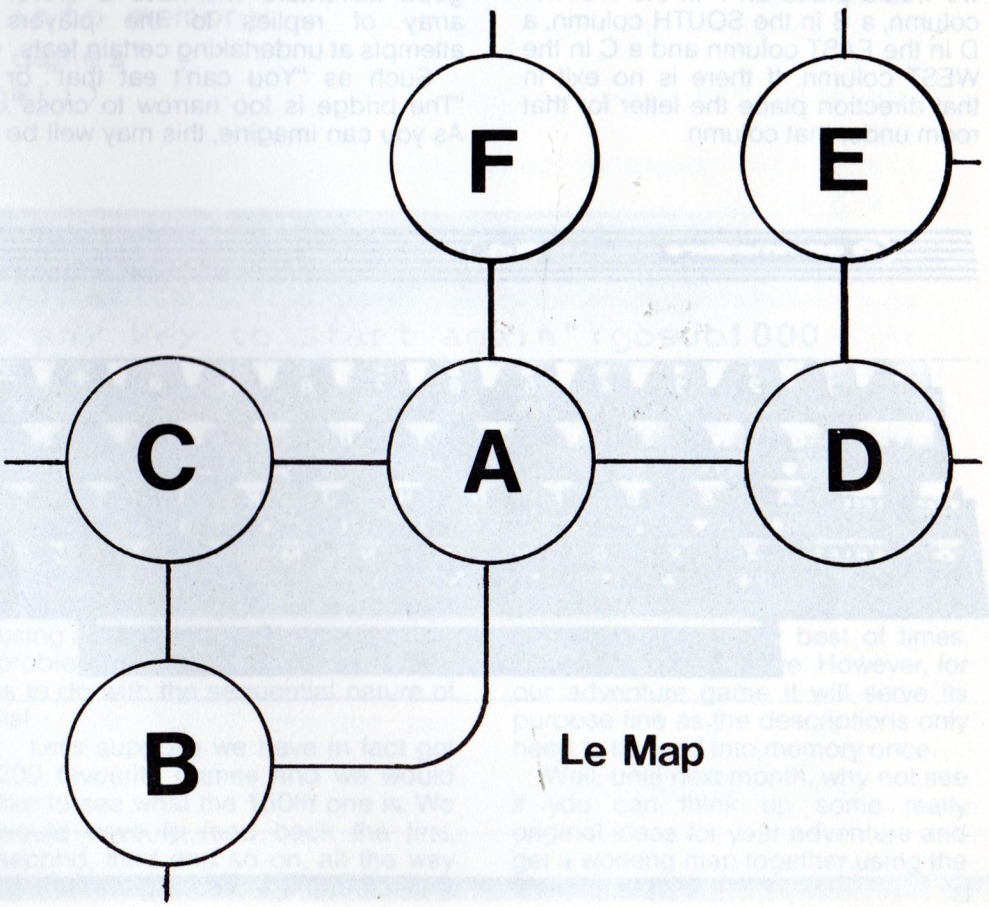
The easiest way to accomodate abnormalities is to simply draw a circle for each room and connect them in a similar fashion to the map illustrating this article. Don't forget, we are trying to keep this job simple, so just stick to the directions North, South, East and West for the time being.

Now, go draw yourself a nice map, containing not more than forty rooms. Of course, if you're feeling really enthusiastic add all the rooms you like, but remember you'll have to think of descriptions later on.

Help!

How do we tell thy stupid computer that room A connects to room B if we go south? However, there is a slight problem because as we go north from room B we'll end up in room C. Confused? Have another look at the map.

See how there is a twist or curve in the path from A to B. For this we need a special way of encoding or storing our map in our program. Firstly place a letter from A to Z in each room.



Le Map

Ahah! Problem number one, there's only twenty six letters in the alphabet. Time to grab your manual and turn to the page which says ASCII and CHR$ CODES. Now in all rooms above Z (i.e. in the twenty-seventh, twenty-eighth etc rooms) place the ASCII characters proceeding the letter Z.

On Commodore machines this would be the '[' (left bracket), '/' (pounds sign), ']' (right bracket) etc. Having done that, making sure not to repeat any letters you'll now need a sheet of lined paper.

Divide the sheet into five columns and label them ROOM, NORTH, SOUTH, EAST and WEST respectively. In the first column under the heading ROOM, place all the letters with which you have labelled a room. (This will usually be just the letters A to Z.)

Now for the tedious section. Working across the page place the letter of the room you will reach if you travel in the direction at the top of that column from the room at the left of that row.

For room A on the example map we would place an F in the NORTH column, a B in the SOUTH column, a D in the EAST column and a C in the WEST column. If there is no exit in that direction place the letter for that room under that column.

Room H would only have one exit. F in the east column. All the other columns would contain a H. Using this technique we can create fairly complex maps and using more columns, add directions such as northeast or up.

Le Variables

Having collected all the necessary descriptions of objects and rooms we can start setting up the main body of our program. First of all, let's agree on a few BASIC variables to be used.

To make alterations as simple as possible, these will include the number of objects and rooms used. Each object must also have a place of resting and two descriptions, one brief and one verbose.

The room descriptions will usually be stored separately to the main program as a text file. For cassette users, I suggest a separate tape be used for this so as to eliminate the chance of wiping out your hard work.

Apart from the room and object descriptions there is one other large collection of text we must store. Any good adventure will have a clever array of replies to the players attempts at undertaking certain feats.

Such as "You can't eat that" or "The bridge is too narrow to cross". As you can imagine, this may well be a rather long list so perhaps we should also store those in our text file.

Why put them in a text file when you could just as easily put them in data statements in our program? Well, there's two good reasons. Firstly, using data statements is going to waste a lot of space as each reply or description will have to be stored twice.

When the string or text is read into a variable from the data statements it is now in memory in two places. What a waste. Secondly it is much easier to edit the descriptions if they are not stored on line numbers which may only be 80 characters long.

Using a text file we can store descriptions up to 255 characters long and possibly even edit them using a word processor.

Text Files

Now, what on earth is a text file? Well it's simply a way of saving a whole pile of letters and numbers in sequence or one after the other. Thus the term SEQuential text file, which means text which is stored sequentially.

For example, if we wanted to store a list of all the best games we have on cassette, it could easily be done using a text file. Try the following program for size.

```
1 rem program to demonstrate
2 rem use of a text file..
3 rem by andrew farrell
4 rem
5 poke53280,0:poke53281,0
10 print"{CLR}{GRN}please enter your six favourite games{CUR DN}"
20 fori=1to6:print"game "i;
30 input g$(i)
40 nexti
50 print"{CLR}insert a blank cassette and rewind to"
60 print"{CUR DN}where you wish to record from"
70 print"{CUR DN}then press any key"
80 gosub1000
100 rem record list on cassette
110 close1:open 1,1,1,"games"
120 fori=1to6
130 print#1,g$(i)
140 nexti:close1
200 print"{CLR} finished.. now rewind tape to the start"
210 print"{CUR DN} then press any key"
220 gosub1000
400 rem read list back into memory
410 close1:open 1,1,0,"games"
420 fori=1to6:input#1,g$(i)
430 nexti
440 close1
500 rem print list
510 print"{CLR} your list was..{CUR DN}"
520 fori=1to6:printg$(i):next
530 print"{CUR DN}press any key to start again":gosub1000
540 run
1000 poke198,0
1010 getr$:ifr$=""then1010
1020 return
ready.
```

All going well you should have prompted with a message to enter your six favourite games. The program then saves that information in lines 100-140 and after another message to rewind the cassette, lines 400-440 will read back your list and display it.

A fairly trivial example, but it works and is the basis of what we will be using a little later on. One of the basic problems with this method of storing is to do with the sequential nature of list.

Let's suppose we have in fact got 200 favourite games and we would like to see what the 150th one is. We would have to read back the first, second, third and so on, all the way up to the 150th before we could view.

A little slow at the best of times, even using a disk drive. However, for our adventure game it will serve its purpose fine as the descriptions only need to be read into memory once.

Well, until next month, why not see if you can think up some really original ideas for your adventure and get a working map together using the techniques. □

Character magnifier

This program illustrates the way in which the DECIMAL character data is used to define the shape of each letter of the alphabet displayed in the giant-sized Pixels.

```
1 REM**********CHARACTER MAGNIFIER**********
2 RESTORE:PRINT"■"
3 POKE36879,25
4 DATA A,B,C,D,E,F,G,H,I,J,K,L,M,N,O
5 DATA P,Q,R,S,T,U,V,W,X,Y,Z
6 REM***DRAW GRID*****
7 READA$:IFA$="Z"THEN RESTORE
10 FORI=0TO7
20 FORJ=0TO7
30 POKE7797+22*I+J,250
35 POKE7797+30720+22*I+J,3
40 NEXTJ
50 NEXTI
55 REM**********GET CHARACTER DATA**********
60 FORY=0TO7
65 P=PEEK(32768+8*(ASC(A$)-64)+Y)
70 REM**********BINARY CONVERSION**********
75 X=0
80 IFP>=128THENP=P-128:GOSUB200
85 X=X+1
90 IFP>=64THENP=P-64:GOSUB200
95 X=X+1
100 IFP>=32THENP=P-32:GOSUB200
105 X=X+1
110 IFP>=16THENP=P-16:GOSUB200
115 X=X+1
120 IFP>=8THENP=P-8:GOSUB200
125 X=X+1
130 IFP>=4THENP=P-4:GOSUB200
135 X=X+1
140 IFP>=2THENP=P-2:GOSUB200:
145 X=X+1
150 IFP>=1THENP=P-1:GOSUB200
155 NEXTY
160 FORK=1TO15:POKE36875,160+ASC(A$)-K
165 POKE36878,15:POKE36876,160+ASC(A$)-K:NEXT
170 FORI=1TO150:NEXT:POKE36878,0:GOTO7
200 POKE7797+30720+22*Y+X,8:RETURN
READY.
```

The character A$ is read from the DATA statements in line 4 and 5 by line 7. Line 65 calculates the SCREEN CODE value of A$ by subtracting 64 from the 'ASC' value. Look carefully at both the ASCII and screen code tables at the back of the user manual . . . notice that such a simple mathematical relationship does not exist for all character values. Fortunately, we are only interested in the ALPHABETICAL characters, which have ASCII codes from 65 to 90, and SCREEN codes from 1 to 26.

The variable 'Y' steps through from 0 to 7, thus stepping the value 'P' through each of the 8 character memory locations for the character represented by A$.

In binary form, each Pixel which is turned 'ON' is represented by a binary '1'- Pixels which are turned 'OFF' are represented by a binary '0'. This information is translated directly from the character ROM to the video output in normal circumstances, but in this program it is necessary to PEEK into the memory and obtain a DECIMAL value, which then must be translated back into BINARY. This occurs in lines 70 to 150 after each value of 'P' is obtained. The diagram below may help you to understand the binary conversion.

128	64	32	16	8	4	2	1

Each bit in a row is assigned a DECIMAL value, as shown. The bit furthest to the left has a value of 128, the next bit to the right has a value of 64, the next 32, each bit has a value half that of the bit to the left. If a Pixel is ON, the corresponding bit has the decimal value shown above. If the Pixel is OFF, the value is ZERO. The ON values are aded together to produce the decimal equivalent of the Pixel row. Lines 70 to 150 carry out the exact reverse of this operation. Look carefully at line 80.

The following principle is used:
IF THE VALUE P IS GREATER THAN OR EQUAL TO 128, THEN THE BIT CORRESPONDING TO 128 MUST BE ON.

Think about it! Imagine for a moment that all the other Pixels are turned ON . . . every time an ON bit is found, subroutine 200 fills in the appropriate element of the large grid which was drawn on the screen in lines 10 to 50. Lines 160 to 170 provide a little musical entertainment, which can be modified or deleted if you so desire.

Apart from its value in demonstrating VIC character construction, think about some other applications for this program, how about an Alphabet trainer for the children? Remember that the data statements can be changed to give any sequence of letters you like. □

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