

The Australian **COMMODORE** **REVIEW**

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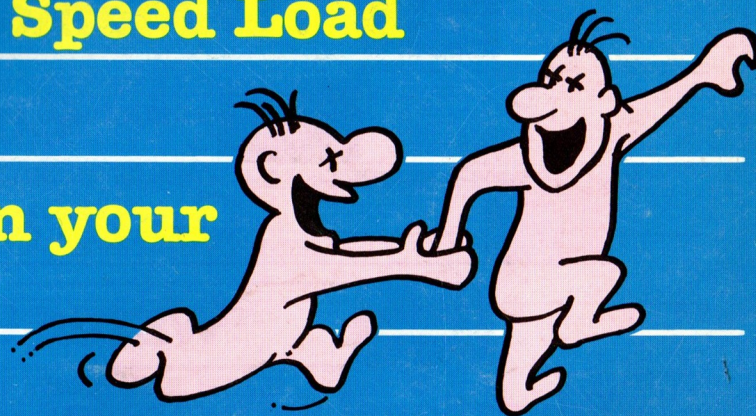
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Editorial

Dealers: Friend or Foe

As Editor of this magazine I spend a lot of time talking to both Commodore dealers and Commodore owners. I also spend a lot of time listening to some pretty rough criticism about dealers' means and methods in handling customers.

It is unfortunate that the vast majority of Commodore dealers are as fresh on the computer scene as some of their customers. They may lack expertise in handling problems and as a result tend to avoid handling them. Considering the margins involved in selling computers, it is a wonder that any dealer, with or without the necessary knowledge, could ever afford to support anybody, let alone their own families.

But that is laughable, I hear you say. Indeed many people are under the impression that Commodore 64s

are sold with a 100% mark up, and to quote one recent letter are sold by "a bunch of rip-off merchants trying to get rich quick". If I asked all the computer dealers in Australia who got rich quick to phone me tomorrow, I think the phone would be quite dead.

Many people believe they should be able to obtain everything at the absolute cheapest price and still receive all the usual service and backup. They think software is overpriced, so are peripherals, so are ribbons and paper and so on. I am not about to justify some of the margins that some people do make on some items. However, it should be noted that dealers are in business.

The main concern of a business is to make money. Likewise, software houses, distributors, software authors and so on are also in business. If we all stopped making money tomorrow

by selling everything at rock bottom prices there would be no business, no support, no software, no use in owning a computer. People do have to make money to continue their existence on this tiny planet. What I am trying to get across here is that we should not despise everyone who makes a buck out of us just because we would rather have parted with less.

If businesses stop making money there is no development, no advancement, no forward motion. The bottom line is that there is no work for more than just the few front line people you see at the shop.

I hope you have enjoyed this little bitch. I don't do it very often, but I believe that if something is not said about the attitude many are developing, the whole computer industry will start to go downhill

Andrew Farrell

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RAM RUMBLINGS

Commodore hits the stage!

It seems there is no end to the number of applications you can use a personal computer for!

Professional musicians, stage lighting technicians and discotheque owners are no exception.

Kosmic Concert Sound & Lighting have released two devices. The first item, called a "MIDI", links music synthesisers and drum machines to a Commodore 64 or SX 64 portable computer.

"MIDI" stands for Musical Instrument Digital Interface. It allows complex sequencing of musical passages with multi-instrument synchronisation. This means a lone musician can sound like a band, and a band can sound more professional than ever before.

The MIDI plugs into the cartridge part of the Commodore computer, and the electronic musical system is then plugged into the MIDI. The unit, which is smaller than a paperback book, has a built in program, which appears on the screen the moment the Commodore is switched on.

The computer can record track after track of sound on sound. It allows program changing, sequence, analysis of program parameters and performance notation, plus tape recorder synchronisation.

For the musician who is performing live or recording music, attaching the Commodore and MIDI offers huge advantages leading to more efficient recording and better composition and writing.

It can also save the performer from forgetting what music s/he played, and what sound was used to play it.

For discotheque owners the Starlighter may be an ideal solution to lighting problems. The unit consists of a Commodore Vic-20, modified to control a full set of theatre lighting and the program enables you to store 40 preset scenes. This number can be upgraded to 120 different lighting arrangements.

The Vic-20 is connected to a special dimmer rack which controls 40 lights (or pairs of lights).



The operator can control every scene, and then record each setup into the computer's memory for re-use.

The intensity of each light is displayed on the screen in percentages.

Instead of tying down a lighting engineer for each and every performance, the unit allows the engineer to program the wanted setups into the computer, which can then be handled by almost anyone.

This makes the unit ideal for lighting in a chain of discotheques, for example. One engineer can do all the settings, and a junior or the DeeJay (or "Veejay", nowadays) can easily control the system.

Current professional 24-channel lighting control desks cost about

\$2,600 while 36-channel desks cost \$3,500. But these have to be run into a dimmer rack. Thus the cost for a 30 channel system is about \$5,300.

The Commodore Vic-20 controlled system with its 40-channel dimmer rack costs around \$5,000.

Information on the "MIDI" music interface or the "Starlighter" light switcher is available from KOSMIC Concert Sound and Lighting, PO Box 10, Bentley, WA 6102. Telephone (09) 361 1681 or 361 8981.

Commodore 64 For Queensland Schools

The Queensland Education Department has extended its range of contracted educational computers with an endorsement of the

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RAM RUMBLINGS

Commodore 64 micro-computer for use in State schools.

It is the fourth State Government Education Department in Australia to acknowledge the Commodore 64 as an educational computer since it was first launched in Australia a little over 18 months ago.

Commodore's Managing Director, Mr Nigel Shepherd, said the inclusion of the Commodore 64 on the Queensland Government's list of approved educational computers was a major breakthrough for Commodore.

"Educators are now realising the potential for computers in the classroom - as a teaching aid as well as a separate curriculum course," he said.

"The children of tomorrow's workforce will be required to work with a computer as a normal tool in their working lives.

"Enthusing them about computers, and bringing to them an understanding of the computer - as a labour-saving device, is critical at a time when they are adjusting their values to encompass the society they are to build.

"Computers are being viewed, by children, as friends.

"They are being enjoyed by children - as an entertainment medium as well as a learning aid and a work tool."

Mr Shepherd said there were already more than 350,000 Commodore computers in use throughout Australia.

"That provides teachers with an opportunity to extend their classroom into the home - to involve parents in the educational processes more than ever before.

"Homework will, generally speaking, become an enjoyable activity because of the creative ways in which the lessons can be presented."

Mr Shepherd said Commodore's inclusion in the Queensland Education Department's approved computers listing meant that the State's 214 secondary schools and 1,048 Primary Schools could purchase the Commodore 64 with the knowledge that it had met all the tests set for it by the Education Department.

He said the decision by the

Government to endorse the Commodore 64 confirmed the company's decision to establish a Brisbane office, complete with a service department, to meet the growing demand for computers in Queensland.

Mr Shepherd said Commodore was appointing education dealers throughout Queensland to meet the special needs of educators in all areas of sales, product support and service.

"It is a deliberate move by us to encourage the development of local computer expertise in the community, particularly rural or semi-rural communities, through local dealerships," Mr Shepherd said.

"In this way, we contribute towards the stability of employment in non-urban areas as well as encouraging the development of technology in regions outside the major metropolitan zones."

K mart opens Commodore computer shops

K mart, Australia's leading discount department store, has opened specialist Commodore computer centres in its 101 stores across the country. From November 5 all K mart and Super K marts will stock a range of Commodore hardware and software and specially trained staff will be able to answer most questions.

Difficult technical questions will be referred immediately to Commodore personnel on a telephone hotline, which will also be used to order any equipment temporarily out of stock. Equipment will be ordered on a 10% deposit and Commodore is usually able to deliver within five working days.

Special orders for peripheral equipment and a wide range of educational, business, home management, and recreational software can be selected from Commodore's catalogue, which will be freely available at K mart.

Commodore has put together three special packs which are expected to sell very well and, like all other merchandise at K marts and Super K marts, they will be sold at discount prices. □

A program that works for its living - Electronic Card File

by Gareth Powell

Many programs that are called databases are nothing of the sort. They are jumped-up card files which have been manipulated to make them look like databases, although they do not fulfil even the basic essentials of that name.

It is a refreshing change to test a program which states quite clearly and accurately what it can do in the title. The program is Electronic Card File from Pittwater Distributors. And its title describes precisely what it is - an electronic card file.

There has always been a fair amount of evidence available to show that most users only bother with about 20% of a complex database program. The other 80% goes unused simply because it is too difficult to learn, too intricate to handle easily.

With the Electronic Card File you should be using at least 80% of the program almost from the word go, because it is easy to understand and simple to manipulate.

The best way to think of the program is as an information and retrieval storage system. It is exactly like a real life card file, in which you enter information upon a series of linked subjects. But unlike a real life card file, with the Electronic Card File it is not your fingers that do the walking, it is the computer.

This program differs from most in that the people responsible have enclosed an audio training kit in the form of a cassette tape to get you started. The tape is friendly, easy to understand and never condescending.

Having heard the tape, I have come to the conclusion that an audio cassette is an almost essential adjunct to any program to be used in business, simply because the more senses that are involved in learning how something works, the easier it is to grasp the concept.

Program disk

Basically the program works through one program disk. You load

this at the beginning of a session and then switch to your work disk for recording and saving information.

On the program disk are five samples. The first is a sample designed especially to be used in conjunction with the training kit. It is purely a training program, and once you have the hang of the system you will not need it any more. Then comes a mailing list, a record collection, a video collection and an asset register.

These are, of course, samples, and you can modify them to suit your specific needs.

For example, I could not care less about video. But I do have a very

extensive library of computer books that I need to keep under some sort of control.

I started off by putting them physically in alphabetical order. Then I tried grouping them by subject. Now I have them on the Electronic Card File and can track down a title in an instant. Not that this will always be totally helpful.

For example, I see that three of my books on writing graphics programs for the Commodore have been borrowed by Andrew Farrell. When asked for their return he smiles an innocent smile and denies having



borrowed them in the first place. But at least I know who has nicked them. Before I would have suspected the office cat, Hilary.

Work disk

The work disk, ideally, confines itself to one card design and one report/label page. If you like, you can create up to ten template card layouts and ten report pages on one disk which you can call, with remorseless logic, a template disk.

I don't see much point in this, as designing the card layouts and the report forms is extremely simple if you follow the quite clear instructions. It might be useful if you were using the program pretty well continuously, but I truly can't see that happening. Nevertheless, the facility is there if you want it.

Each card can hold up to 930 characters.

Taking the average word as equalling six characters, that equals over 100 words, which is far more than you ever write on a file card. The number of cards you can hold on one disk depends totally on the number of words you are saving in each file card.

If you use the full 100 words you will get something around 130 cards. If you only use seven words for each report you can squeeze on 3,000. Both silly examples but they give you a rough idea of the potential capacity of one disk.

Clear instructions

The way the programmers have put the whole package together shows that they clearly understand the problems of dimwits like myself. For example, under "Planning Your Card and Input" they say:

"Take an old-fashioned pencil and paper and jot down a list of the information you wish to store.

"Rough out the design of the card you would be happiest with, making sure that you put information that you want to refer to quickly in a spot that your eyes go straight to.

"Give some consideration to the way you want the information put into Report Form.

"If you will be doing mathematical calculations, work out where on the

Card the totals are to be shown. This is important as these areas need to be highlighted to help in ease of use."

(The next recommendation should be written in letters of gold and hung over the desk of everyone who is filing information, no matter what method they are using.)

"Don't keep information just for the sake of it, there are no prizes for having a Card so cluttered you can't make head nor tail of it."

(That is one of the great computer truths, and if the program teaches you nothing else it will have been well worth its retail price of \$139.)

"Do a couple of trial layouts before you make a serious attempt at your design.

"If your Card has data that is accessed frequently, consider putting that on the top of the Card and the input, such as name and address, that is a 'constant' factor at the bottom of the card. You will find that your day to day use of the card is a lot easier because you do not have to cursor down through this 'constant' information to get to the changeable data."

All sound robust good sense. It characterises the way that this program is written and operates – as a working tool, a means of making the Commodore 64 into an efficient information retrieval machine.

Are there any complaints?

One, just one. The book of instructions is typewritten in an extremely small typeface. If you are over forty and your eyesight is not of the best then you may have some slight difficulty. But this is a trifling complaint. The simple fact is that Electronic Card File is one of those stout, utilitarian programs that actually do something, that make the computer into a useful tool rather than an interesting games machine.

I commend it. □



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Asylum runs in 48K on the Atari, Commodore 64 and IBM PC computers. See your local software dealer.

But can they be trusted?

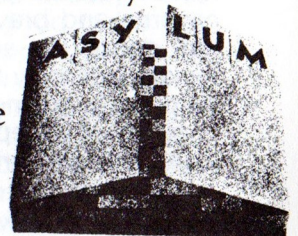
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Neptune's Daughters

by Phil Campbell

Distributor: OziSoft
Format: Turbo Load Cassette
Computer: Commodore 64

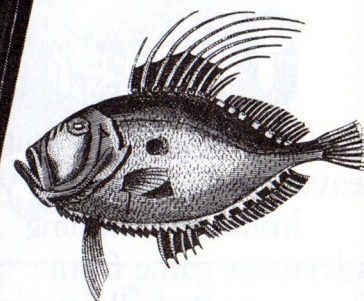
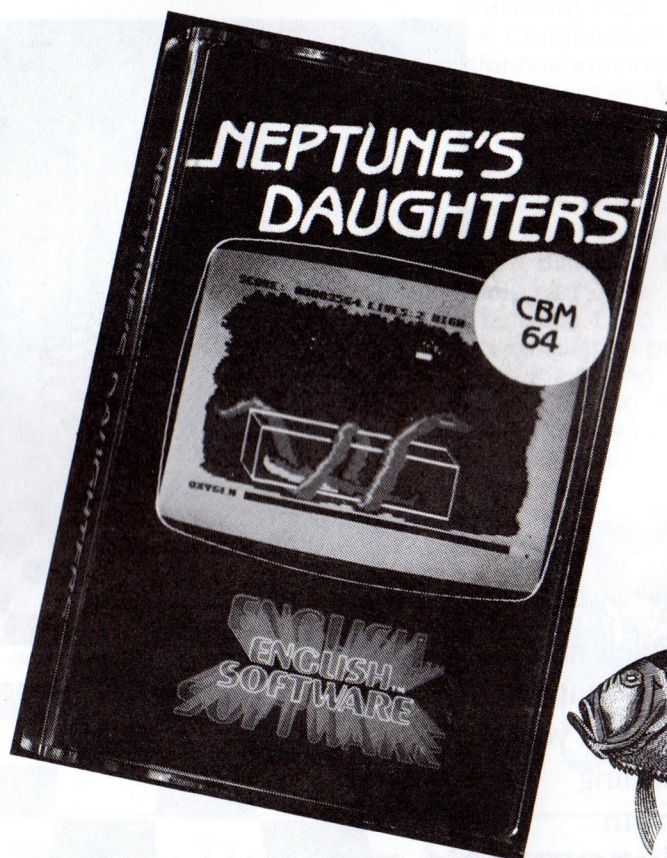
Neptune's Daughters is one of the more interesting games to come my way in the past few months, and scores a high rating for both originality and addictiveness.

First impressions are important, and I instantly warmed to the fact that the cassette label is not covered with over-imaginative artist's impressions which may or may not relate to the game inside. Any game worth its salt should be unashamed to display an accurate photograph of the screen graphics on the outside. Of course, my favourable reaction has nothing to do with the fact that the photograph on the front of Neptune's Daughters shows a naked watery princess entwined by a wicked looking Sea Serpent. Sea Serpents just don't turn me on at all.

As video games have grown in sophistication, instructions have become more and more necessary. The short story style instructions which I usually find so irritating have surfaced once again. But I guess I'll just have to learn to live with such rubbish as "...But all is not lost...our intrepid aquaman, absorbing oxygen through the gills on the side of his neck, comes to the rescue. Travelling through underwater caverns and braving the hazards of the deep, he seeks his favourite female with only the aid of his trusty harpoon." Looking on the bright side, I guess it keeps a few B-grade science fiction writers off the dole.

In play

A variety of challenges are in store in your quest to free the delightful princess from the clutches of the wicked water snake. First on the agenda is a swim through craggy underwater caverns infested with deadly sucker plants and killer octopii, then comes a battle with the



even more deadly converging amoeba swarms.

Each stage of your quest, of course, must be completed before your oxygen supply is exhausted, although the amoebae emit oxygen bubbles which may be caught and added to your supply. This is rather difficult, but failure to catch at least one or two will leave you very short of breath!

To rescue the princess you must harpoon five crabs and feed them to the serpent, who then has his afternoon nap on a nice full stomach. After he dozes off it is a simple matter to duck off with the cute shiela. After a successful mission, you swim into the sunset for a brief honeymoon before facing up to the prospect of even more nasty octopii, sucker plants and amoebae.

Graphics and audio are both executed rather well, although I am rather curious as to why a continuous smooth scrolling technique was not used. Each section of the game is

played in a stationary frame, which scrolls to the next screen when you reach the exit point. Strange, but only a minor quibble. Sound effects are very appropriate, with just the right watery quality, although they can get a little tedious after the first few hours.

Conclusion

Neptune's Daughters is an enjoyable and challenging game. It has enough addictive qualities to ensure that it will not be immediately mastered and thrown into the back of the cupboard. On these grounds alone, Neptune's Daughters deserves a place in your collection. □

Ratings:	(/10)
Originality	6
Graphics	7
Sonics	7
Challenge	8
Addictiveness	8
Value	7

The Grappler CD Printer Interface

by David Brown

Today I had the pleasure to be invited to use the Grappler interface. I love new toys so I was delighted.

My introduction was the manual, some 32 pages. As it was not my device I felt compelled to read it before all else failed. It is very American and typically patronising—I was congratulated for buying “these best interface money could buy”, supported by comments like “isn’t it eezee”. (How do you type Americanish?) While this offends my typically British education, I still found the manual to be reasonably efficient and relatively easy to follow, with the reservation that I knew what I was doing. It may be a bit more obtuse for a complete novice to printers (who it is presumably aimed at?).

One major deficiency concerns the dip switch settings. For reasons only known to the editors, they refer to the switches being OFF and ON in the text but use the terminology OPEN and CLOSED in the explanatory table. If you are not electronically inclined you may not know that a closed circuit is ON. Even if you are, the equivocation is increased by the explanation of switch 5, dealing with Automatic Line Feeds. It says that an Open circuit is ON for auto line feeds. Translated, this means that if the switch is OFF a line feed will be generated. Still, this is a minor point and the rest of the documentation is much clearer.

When it came to road test time I chose to use Easy Script. As the computer was connected to a Gemini Printer I had plenty of files that made good use of the printer’s features already available.

The interface was set in emulation mode (ie acting like a Commodore 1525 printer) so a reasonable place to start was to set Easy Script up to expect a Commodore printer. The output was normal, ie the letters were in the case written, but the escape

codes sent to the printer were ignored.

The next test was to set Easy Script up on Other/Serial mode. The output was very interesting. Upper case was printed correctly but lower case was printed in graphics. Great for aspiring James Bonds, but not so good for communication. The control codes to the printer were also still being ignored.

The answer was to use the secondary address command within Easy Script. After sending ‘sa4’ the output was perfect. This effectively locks the interface into transparent mode, allowing Easy Script to do all the conversions and letting the escape codes get through to the printer. The manual talks about using text mode for word processors such as Wordpro 3 plus. This can be done from the dip switches or using the secondary addresses. The explanation is not terribly clear and it was not tested.

Having negotiated the perils of Easy Script, it was time to try the screen dump facility. This is the really exciting aspect of the Grappler. Imagine being able to type in half a dozen characters and have a high-res picture appear on the printer. Essentially, that is all there is to it.

The manual explains fairly clearly that to have the screen dump facility, the Grappler makes use of cartridge memory. They could also have mentioned \$8000 or 32768 (decimal) which may have triggered a memory cell in a few more users. What they are saying is that if a program uses this location and above it won’t work if you have the Grappler in screen dump mode. This may not seem too drastic but it includes Easy Script, all Geoff Minter’s software, all cartridges and anything that uses a SYS 32768.

To use the facility you must change the position of dip switches 1 and 2. Here the designers excelled themselves. To get at the dip switches requires a narrow instru-



Picture 1. In negative

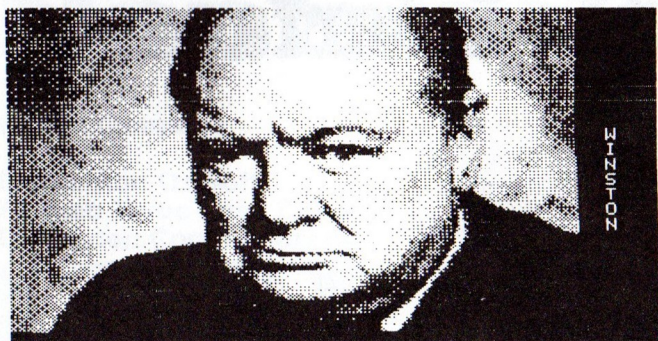
ment (they suggest a biro but I prefer a jeweler’s screwdriver because there is no chance of gunk dropping off) inserted through a narrow hole in the side of the interface. Now in reasonable operation these are the only switches that would be regularly moved. Where were they placed? Furthest away of course! They are accessible, but if the bank was turned around they would be so easy to reach.

A quick read of the graphics commands indicated that they were initiated by using a command in the form PRINT “CTRL/Ax” where CTRL/A appears as reverse A on the screen and x is one or more characters representing special functions. Files, they claim, can even be loaded off disk and dumped directly. This sounds almost too good to be true but it works. The Grappler loads a file from disk directly into the area of memory it uses for screen dumping. I had a few “Doodles” with me to test. As the documentation used Winston Churchill as an example I selected it also. The command was simply: PRINT “CTRL/AD:DDWINSTON”

[RET]
where DDWINSTON is the file name.

The file whirred, the red activation light glowed and then . . . nothing! A further reference to the manual revealed all. Another command was required.

PRINT “CTRL/G” [RET]



Picture 2. In positive



Picture 3. Positive emphasised

and there it was in all its splendour, a picture of Winston quickly appearing on the Gemini, nicely centred on the paper.

It was not quite perfect though. Because of the way it was digitised, it was in photographic negative. No problem for the Grappler. PRINT "CTRL/AGI [RET]" and a further Winnie appeared, this time as a positive.

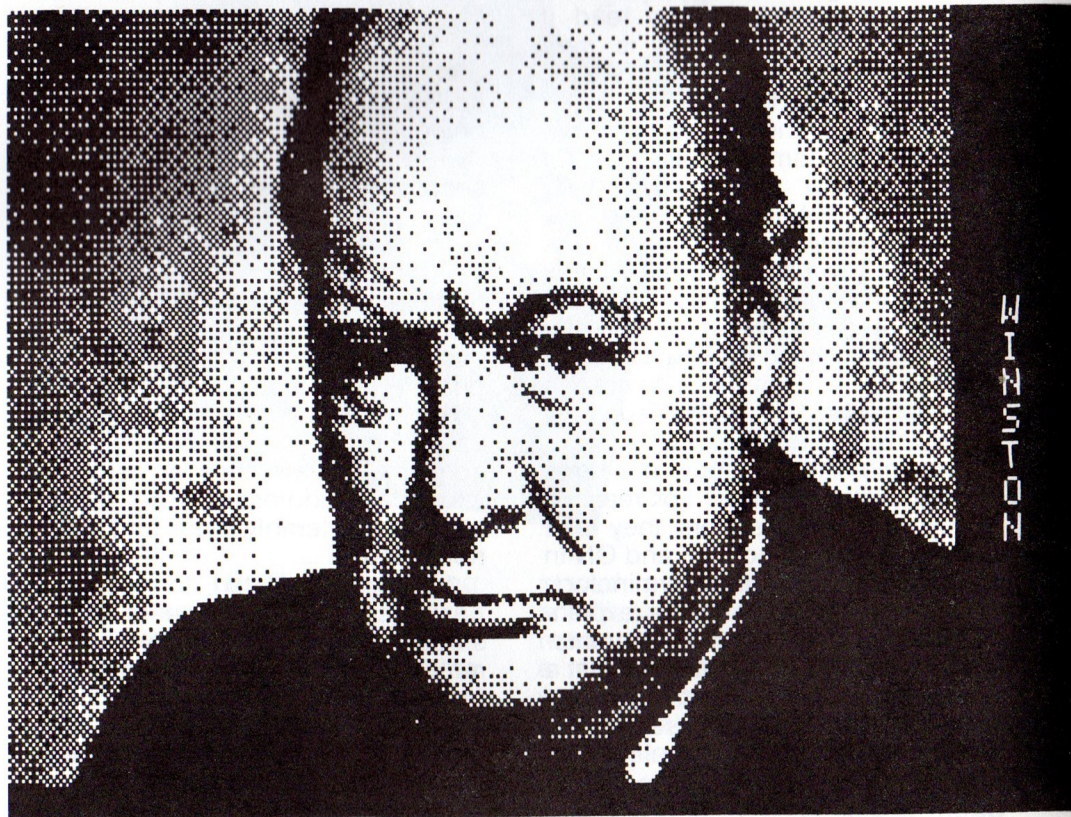
Nothing appeared impossible, so a little experimentation seemed in order.

PRINT "CTRL/AGIE" [RET] produced the same picture in emphasised mode. The quality was superb. As the Gemini in this mode slightly overlaps the dots, no striping at all in the picture could be detected.

A final fiddle - PRINT "CTRL/AGIED" [RET] printed double sized. The picture had now been turned sideways, but was still printed centred. This time the screen dump took quite a while, perhaps two minutes. But the printer was really working hard so I suppose that is reasonable.

The manual also talked, somewhat vaguely, about dual and quad density graphics. It was not tested but should be just as straightforward.

With screen dumps so simple, there remained only one last challenge. Fans of Strip Poker will be familiar with Suzie and Melissa. To date they have resisted all my efforts to reproduce their good points on paper. Perhaps this device would break down their reservations? Unfortunately, they resisted even the charms of the Grappler and remained chaste. The output only resembled their fine form with the utmost imagination.



Picture 4. Emphasised double size

Before leaving screen dumps, it should be mentioned that text can also be dumped to the printer. The format is virtually identical, only S substituted for G. In this mode you also get the command printed out. It can be done from within program mode so a simple word processor could be synthesised.

The next test was LISTing. I use the PRINTRON (Australian CARDCO Ⓢ) and am quite satisfied in all respects except the incorrect aspect when reproducing Commodore low-

res graphics. Can the Grappler do better? Yes, with reservations. Some of the symbols are moved up or down one dot in relation to each other. This is quite apparent with the square bracket [] symbols. The other conversions, for colour, cursors and function keys are printed in the accepted fashion of a keyword abbreviation. Unlike the PRINTRON, the Grappler does not support reverse field printing.

My final test was to use it with my favourite package, Multiplan. This

spreadsheet has been extended to nearly every mainline computer and as a consequence makes using a new machine a pleasure. Significant output can be generated after only a minor learning curve to pick up slight machine idiosyncrasies. How would the Grappler perform? In standard emulation mode the P P commands immediately had my worksheet materialising on the printer.

With only minor nits picked, the Grappler passed my tests on its ear.

A feature of the Grappler I have yet to mention is that it is designed so cleverly that no ports are lost and no flimsy wires are running across the work area. It fits directly into the cartridge port and the serial bus but as both of these are duplicated on the Grappler, the disk drive, or Commodore printer and a cartridge are able to plug into the body of the Grappler. This means that cartridge word processors, eg HESWRITER, could still be used.

While I have not experienced it, two local User Group members have mentioned a problem if the Grappler is used for extended periods (3-4 hours) with a cartridge piggy-backed into it. In both cases the video output degraded to garbage. This was fixed after the system had been powered down.

My feeling is that this is not a fault in the Grappler, but rather due to excessive power use. I cannot prove it, but the combination of four chips in the Grappler with the chip in the cartridge might use more amperage than the 64 can cope with over an extended time. If you are contemplating purchasing, this might be worth exploring with the dealer. If the 64 does lose all its smoke (computers run on smoke - when you see smoke escaping, you know it will soon run out) who will pump it up?

In summary, I am extremely impressed with the capabilities of the Grappler. The documentation is generally clear and comprehensive, the LISTing facility is good, use with wordprocessing software is straightforward and the screen dump facility is nothing short of stunning. Whether this is worth the mega dollars currently being charged is another question. Nevertheless, this is an excellent product. □

Getting the most out of Speed Load

by Peter Norman

Below are some tips that may help the more experienced user.

When using Speed Load the device number in a LOAD statement will default to 8 instead of 1. Therefore LOAD "program" will load from disk. Note: Cassette operation is suspended while the cartridge is in use.

Due to a peculiarity with the C64, switching out the cartridge (to enable full use of RAM) switches out BASIC as well. This means that BASIC must be transferred to the RAM underneath.

This can cause problems with those programs that load right up under BASIC. These programs may load okay but when loading is complete the C64 tries to return to BASIC (which is now corrupt), causing the C64 to crash.

To help in this regard, POKE 753,55 before you load your program. This ensures that the BASIC ROM is switched IN after the load. Note however that now the cartridge will also be switched in, causing problems with BASIC programs. With machine code programs that have code under BASIC ROM, it is highly likely that they will switch out BASIC (and the cartridge) once the program is executed.

Should you wish to switch out the

Speed Load cartridge (and BASIC) before executing your program, POKE1,54.

NOTE: The normal value in location 753 is 54. This location only effects what happens after a program load is complete.

Using SHIFT/RUNSTOP on the SX64 when the unit is first switched on may not work due to a conflict between the DOS and Speed Load. To overcome this problem ensure that the first program on the disk is no larger than 1 block (eg: make up a simple boot loader).

Once a program has been loaded into the SX, subsequent uses of the SHIFT/RUNSTOP should work normally.

If you have a switchable expansion card for your 64, you may disable Speed Load by switching off the cartridge and typing SYS 64789.

Eureka Software is constantly making improvements to its products. Updated versions of Speed Load may be obtained by sending in your old cartridge plus \$15 + \$4 postage and handling.

Should you wish to be notified when new versions of Speed Load or new products are available please write to Eureka Software, PO Box 310, Niddrie, Vic 3042. □

Have you seen the other Gareth Powell Computer Magazine ?

The Australian Apple Review

Available from newsagents and computer stores, or by direct subscription (\$18 for six issues, \$36 for 12 issues from

Gareth Powell Pty Ltd

Top Rear, 4 Carrington Rd, Randwick, NSW 2031

Of terrors and triumphs

by Andrew Farrell

Murphy's condensed dictionary of computerspeak states that an adventure game is a binary encoded magnetically transmitted terminal disease which slowly destroys the nervous system. Eventually it leads to extended periods of deep concentration, uninterrupted by subliminal influences. Many sufferers now rest in peace in some damp dark cavern miles beneath the earth's surface.

Symptoms for this rampant disease include introversion, skipping meals, losing sleep and often being discovered beneath piles of crumpled paper scrawled with unintelligible jargon about some lost Egyptian civilisation.

If at this stage I have not managed to intimidate you into remaining a highly strung arcade addict, read on with haste. You are about to discover the true meaning of adventure and fantasy without the dangers and mishaps.

History

Adventure games have been with us for many years. The first main frame computers, Goliaths of the 1960s, were often seen dispensing long descriptions of the Colossal Cave, one of the golden oldies. An informant from IBM Australia tells me that adventure games were banned from their picobytes of memory many yarons ago. Indeed they are a recognized time waster and space waster, taking up most of your computer's memory to store the various intricate decision making routines within the game.

Today they have grown into disk based giants that devour hours of your time in a few brief moments of play. Today you can enjoy full colour pictures, if you are that way inclined, or even a little orchestral accompaniment. More on the bells and whistles of these modern marvels a little later.

What is an adventure game?

Strictly speaking an adventure game is a computer program that allows you to manipulate and examine objects, explore surroundings and in some instances communicate with any characters you encounter, with the objective of reaching some goal.

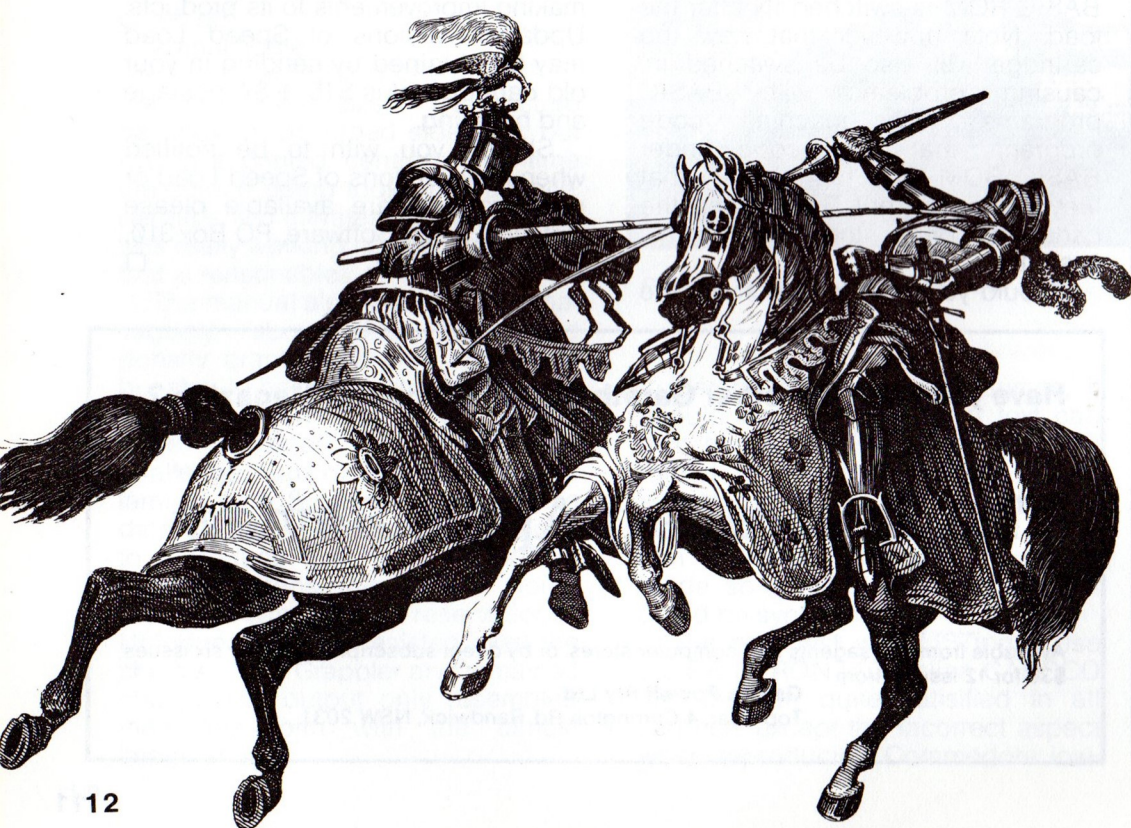
In some adventures the goal may be undefined, to be discovered during the first few minutes of play. In others it may be short and simple; rescue a captive, collect some treasures or escape the labyrinth. More complex scenarios may include solving murders or controlling weather conditions.

The player directs the computer, which acts as if it were you standing in whatever situation is described by short phrases or commands. Simple adventures may only understand a small vocabulary of words and may only accept those words two at a time. However, most of the more elaborate adventures understand over 500 words and will decipher short phrases such as: "Get the lamp and then light it" or even "Remove all the straws except the red straw".

It is difficult to convey the joys of discovering the lost tomb of king Tut at three in the morning, or destroying the last two guards between you and freedom from the prison below. Completing an adventure game is far more satisfying than defeating a horde of aliens that hover to and fro in almost random patterns. An adventure really is an adventure, complete with exciting discoveries, close shaves with "death" itself, and brilliant triumphs against overwhelming odds.

Variations

Not all adventures are the same. Not only does the plot change, but also the manner in which it is presented.



The joys of adventure gaming

At the lowest level the game will display short descriptions of each location, perhaps only three or four words long. The commands then accepted may be crude and almost insulting to one's intelligence.

At the other end of the scale are versions which make the mind boggle with vivid descriptions and complex problems to solve. The difference is much the same as that between a soppy paperback and a good armchair thriller.

Some adventures also incorporate graphics. These sometimes detract from the overall impact, but when they are well designed often add a further degree of realism. Personally I prefer an all text adventure. The mind, when prompted with the right stimuli, has the ability to imagine scenery that could never be reproduced on a computer screen. I think powerful words and brilliant descriptions defy the ability of crude chunky graphics to convey an interesting atmosphere. Just when you thought you knew how it all looked, the mind's eye is scarred by these motley pictures.

Not all will agree with my philosophy; however, one adventure company certainly does. I refer, as anyone who has ever played their

games will have guessed, to Infocom.

Real time graphics

For arcade players who would like a bit of action in their adventure games, real time graphics adventures are all the rage. Although they are not often classed as such, many so-called arcade games are in fact a varied approach to an old theme. A typical example of this kind of game would be Impossible Mission, which is full animated graphics. Yet the

computer allows you to reach a specific task by manipulating objects. In this case you must search various pieces of furniture and computer hardware to collect all the sections of a large puzzle. The game may be mapped although it plays a little differently each time.

Other older examples would include Castle Wolfenstein and Cops & Robbers. Both these games had various rooms, or locations, within which there were objects you could in turn manipulate to achieve a goal. □

User Group Grapevine



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

Sydney

Sydcom 64, PO Box 586,
Mona Vale, NSW 2103.
Time: 2nd Tuesday of each month at 6.30 pm.
Place: YWCA (4th Floor).
Contact: Secretary, Michael Stead on 99 9370 (between 4 and 6 pm).
Activities: Monthly newsletter - "Peripheral".

New South Wales

Southern Districts CUG,
3 Lucille Crescent,
Casula, NSW 2170.
Time: 1st and 3rd Wednesday of each month at 6.30 pm.
Place: API Hall, Kurrajong Rd, Prestons. (Next to 2FC Tower).
Contact: Lex Toms (02) 602 8691.

Queensland

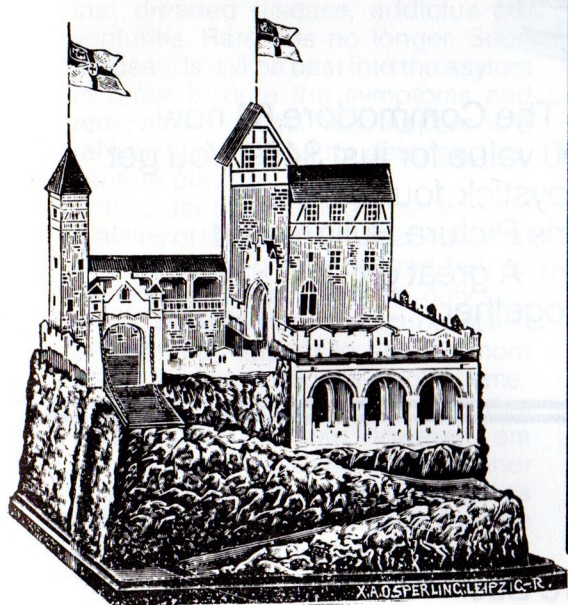
CCUG (Q), PO Box 274,
Springwood, Qld 4127.
Time: 1st Tuesday of each month at 7.30 pm.
Place: Milton State School.
Activities: Monthly workshop and newsletter.

ACT

Commodore User Group (ACT)
PO Box 599, Belconnen 2616.
Time: 1st Monday of each month at 7.30 pm.
Place: Melba High School.
Time: 3rd Monday of each month at 7.30 pm.
Place: Woden Town Centre Library.

Western Australia

Western Australia Commodore
Computer Users Association
- WACCUA,
PO Box 31,
Leederville, WA 6007.
(09) 381 2988
Time: 1st and 3rd Monday of each month. □



It's Not How Little It Costs,



It's How Much You Get.

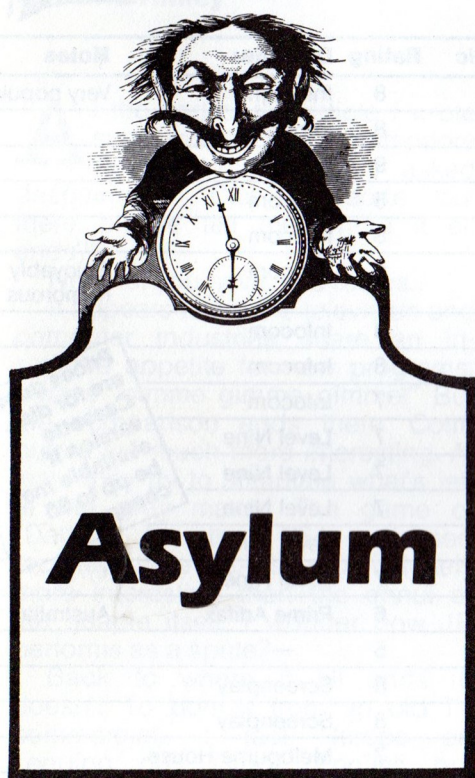


At last, the world's number one selling computer in a pack. The Commodore 64 now available in a family pack at a very affordable family price. \$700 value for just \$499. You get the powerful Commodore 64, plus datacassette and joystick, four software programs: Money Manager, An Arcade Game, Rolf Harris Picture Builder and Introduction To Basic (a teach yourself program). A great gift for the whole family who work and play together.

commodore
COMPUTER
Keeping up with you.

Contact your nearest Commodore dealer or Commodore Business Machines:
Sydney: (02) 427 4888 Melbourne: (03) 429 9855 Brisbane: (07) 393 0745 Perth: (09) 478 1744

Sneak Preview:



As a rule I do not enjoy maze games. But *Asylum* is much more than a maze. As a rule I do not thrive on adventures with graphics. However, *Asylum's* graphics are a little different from the usual ones.

In *Asylum*, you are suffering from that dreaded disease, addictus adventuritis. Rare it is no longer. Soon thousands will be cast into the asylum in order to cure the symptoms and remove the cause. Yes, *Asylum* is a rehabilitation centre for deranged adventure players.

In order to be brought back to the realities of life they must deal with what lies within the grey walls and behind the sliding doors. There is only one way to win and that is to escape. At first *Asylum* may appear to be little more than a twisted variation of an old theme.

Perhaps some may discover that that is indeed the case. However, I am still trapped in its depths. The sooner this game arrives in computer stores across the country, the sooner I will be able to get some help in escaping.

Starting

Asylum begins by describing in fairly blunt terms your predicament. Next you are presented with a well designed three dimensional view of the maze. The cursor keys will now move you about the many corridors which must be mapped in order to explore every dark corner.

As you move forward the maze scrolls towards you in a very realistic manner. Turning left or right causes a similar form of scrolling to take place, which is a great novelty at first, although later it tends to lead to much confusion.

Various inmates are encountered during play. These include a psychologist, a plastic surgeon, a Hollywood producer and a hypochondriac. Whenever they are confronted, a brilliant colour picture of them is loaded from disk in a surprisingly brief amount of time.

Similarly, there are doors which when opened lead to cells or rooms depicted by three dimensional pictures. All the action takes place at an almost alarmingly high speed.

Below all these amazing pictures is a brief text description of the current situation and the usual prompt for user input. Commands may be entered in sentence form, although the program did become a little confused at times about some of our attempts at communicating with it.

The vocabulary is fairly large for a graphics adventure. One annoying aspect was that some words were instantly transferred to another, quite different, meaning. An example of this was "throw" and "drop". Surely throwing a delicate object would produce quite different results from simply dropping it. Likewise throwing an axe should also have a very different result from just letting it slump to the ground. Trivialities, you say? Perhaps.

Typing "HELP" occasionally displayed a hint, and some of these proved very helpful. Others were just blatant giveaways of tasks you would



never otherwise discover the means for. When a hint could not be given, a brief menu was displayed. At any time the function keys could be pressed as an abbreviation for many of these menu options, including one to list the vocabulary, another for a glimpse at some of the pictures in the form of a slide show, and for those of us who are sick of typing "INVENTORY", just press "F7".

Conclusions

Warped as the plot may sound, *Asylum* was enjoyable to play. Some of the inmates were most annoying, as were some of the twists in the maze. In a future issue we will probably be publishing the map I managed to scrawl on a large sheet of graph paper. Until then wait patiently until *Asylum* comes to your street. Please don't ring for tips, unless you can give us some. □



THE AUSTRALIAN COMMODORE REVIEW

ADVENTURE GAMES COMPARISON CHART

Name	Format	Price	Distributor	Text/Graphics	Sound/Music	Rating	Designer	Notes
Zork I, II, III	D	25.00	Commodore	Text	—	8	Infocom	Very popular
Starcross	D	25.00	Commodore	Text	—	8	Infocom	
Deadline	D	25.00	Commodore	Text	—	9	Infocom	
Suspended	D	25.00	Commodore	Text	—	8	Infocom	
Witness	D	59.95	Imagineering	Text	—	8	Infocom	
Planetfall	D	59.95	Imagineering	Text	—	8	Infocom	Enjoyably humorous
Sorcerer	D	59.95	Imagineering	Text	—	8	Infocom	
Enchanter	D	59.95	Imagineering	Text	—	8	Infocom	
Infidel	D	59.95	Imagineering	Text	—	7	Infocom	
Lords of Time	D/C	29.95	Ozi Soft	Text	—	7	Level Nine	
Adventure Quest	D/C	29.95	Ozi Soft	Text	—	7	Level Nine	
Colossal Adventure	D/C	29.95	Ozi Soft	Text	—	7	Level Nine	
Snowball	D/C	29.95	Ozi Soft	Text	—	7	Level Nine	
Dungeon Adventure	D/C	29.95	Ozi Soft	Text	—	7	Level Nine	
Underworld of Kyn	D/C	29.95	Ozi Soft	Text	—	6	Prime Artifax	Australian
Aztec Tomb I, II	D/C	24.95	Ozi Soft	Text/Graphics	—	5	—	
Asylum	—	—	Ozi Soft	Text/Graphics	—	8	Screenplay	
Institute	—	—	Ozi Soft	Text/Graphics	—	8	Screenplay	
Hobbit	C	39.95	Melbourne House	Text/Graphics	—	7	Melbourne House	
Sherlock	C	—	Melbourne House	Text/Graphics	Music	8	Melbourne House	Frustratingly un-bug free
Himalayan Odyssey	D/C	28.95	Mountain Valley	Text/Graphics	—	6	Mountain Valley	Australian
Volcanoe of Raka Tua	D/C	28.95	Mountain Valley	Text/Graphics	—	6	Mountain Valley	Australian
Mystery Island	D/C	28.95	Mountain Valley	Text/Graphics	—	6	Mountain Valley	Australian
Castle of Mydor	D/C	28.95	Mountain Valley	Text/Graphics	—	6	Mountain Valley	Australian
King Solomon's Mines	D/C	28.95	Mountain Valley	Text/Graphics	—	6	Mountain Valley	Australian
Scroll of Akbar Khan	D/C	28.95	Mountain Valley	Text/Graphics	—	6	Mountain Valley	Australian
Oasis of Shallmar	D/C	28.95	Mountain Valley	Text/Graphics	—	6	Mountain Valley	Australian
Critical Mass	D	49.95	Imagineering	Text/Graphics	Sound	7	—	Has picture problems
African Safari	D/C	29.95	Ozi Soft	Text/Graphics	Sound	4	Ozi Soft	
Ultima II	D	—	Imagineering	Text/Graphics	Music/Sound	9	Lord British	
Ultima III (Exodus)	D	—	Imagineering	Text/Graphics	Music/Sound	10	Lord British	Best by far!

Prices quoted are for disk. Cassette version if available may be up to \$5 cheaper.



Commodore Addict

- part two

by David Hinley

At the end of the article I wrote some months ago (Commodore Review Vol 1 No 5) I asked despairingly "Can someone out there please tell me where it all ends?"

None of you have, you rotters.

It appears to me the television and computer industries share an insatiable appetite for new programs; always "gimme gimme gimme!" But the comparison ends there. Computers are much more interesting. At least they try to stimulate what's left of the grey matter. The game of "Dallas" for the C64, released recently in the USA, sounds infinitely more interesting than the ennui of the soapie itself. I wonder how JR performs as a sprite?

Back to where it all ends. It doesn't. To borrow from an old TV commercial, it just "keeps on keeping on". Crook English but accurate comment.

I now have a disk drive. I saved for a while; became impatient, borrowed the rest and staggered home with something else to plug into one of the naked sockets. I won't go into how awful the manual was, and I didn't fall into the trap of waiting for the GREEN light to go off before I extracted a disk. "Been there, done that!" you all cry. Like all computer hardware, it needed things; a place to live and disks.

My parents came to the rescue with the former. I gave Dad a secondhand ZX-81 for his birthday; he's only just forgiven me. Mum never has. She's found out what it's like to be a computer widow. I was having a moan shortly after the arrival of the 1541 about lack of space, and how I thought the computer table in the latest K Mart catalogue looked ideal. It wasn't even a hint, but they asked me if I'd like my Christmas present in advance. Less than 24 hours later and after much fumbling with Allen keys (it was a kit), I had it built. It's not

too wobbly. I had several bolts and a bit of wood left over. This wasn't supposed to happen. ALL males are NOT born carpenters. (Hint: if you want to enlist the financial aid of relatives, get one hooked.)

I chugged along merrily for some time, transferring all my mostly copied-from-magazines BASIC programs from cassette to disk. I even managed to go for some time without actually buying anything, except for a database program which I couldn't resist.

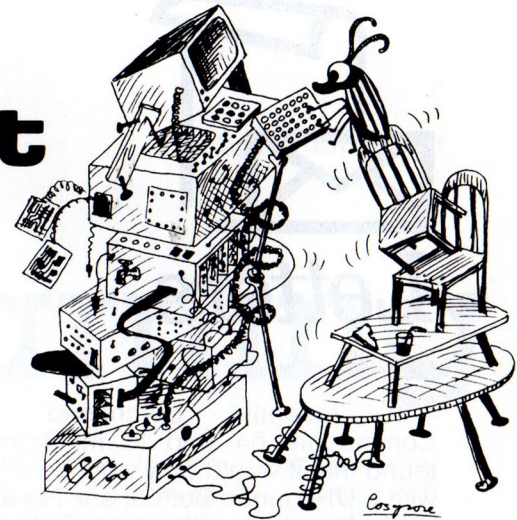
I keep on reading and hearing about the slowness and unreliability of the 1541. I've never had problems, and to me it's faster than a speeding bullet compared to cassette. My brother-in-law (who's going to read this so I'd better watch it) has had his for over 12 months. He smokes like a chimney and drinks litres of coffee within arm's length of both computer and disk drive. He uses his much more than I and has never had problems.

Then last week I bought a public domain disk, packed with all sorts of interesting programs, including not one but two word processors (neither of which I can get to work properly with my RS-232C printer), a fabulous music program, a hideously complicated sprite editor and all sorts of things for checking disks, the 1541 and masses of other goodies, all for \$20. The smaller word processor alone would have been worth the money if I can ever get it to work with my printer.

The 100 page plus manual said there was a monitor program that could copy machine code cassettes to disk. The only snag being that the monitor itself was in MC.

Let me tell you right now that PRINT, GOTO, INPUT and some other BASIC terms are all I care to cope with. I wanted to know about MC about as much as I want to be fluent in Urdu.

Yet here I was, confronted by



racks of MC cassettes, some of which take forever to load, and with a program that the manual says can copy them to disk using the monitor. That manual said all sorts of things about high and low memory; much importance was attached to something called hexadecimal - which sounds like a spell cast by someone with a PhD in pure math. Apparently the number 10 which follows 9 is not 10 at all but OA. Oh, there's more, much more.

I avoided the computer for several days - it took me that long to get over the headache obtained from reading the manual. Then I made a mad dash for the computer, loaded the program, entering a SYS command to run it, instead of the familiar RUN. Another bloody number to remember.

I got a funny looking black screen with all sorts of green numbers on it which looked like a CIA code. Where was the friendly blue on blue screen with the reassuring message from Commodore and the comforting READY? And why was there a full stop before the cursor? I went away to make a cup of coffee, mowed the lawns, trod on the cat and kicked the dog. You can tell I'm not at all brave and adventurous, and I loathe having to read manuals.

I did get the hang of it after a while, and managed to copy to disk about half my MC cassettes.

I have to admit, though, that the more I find out about the C64 the more fascinated I am by the machine's capabilities. I'm very fond of music, and am always amazed by the capabilities of the sound chip. But never, never, EVER will I program anything more complicated than a mournful beep.

I'd much rather become fluent in Urdu. □



Letters

Dear Sir,

I recently purchased a Commodore 64 and to my horror found that it would only work on a TV with a UHF tuner. Both of our TVs are VHF only and as I don't intend to go to the expense of buying a monitor, I wonder if you could put me in contact or supply me an address of a company that makes VHF modulators for the Commodore 64.

Philip Smith
Victoria.

Ed: Pittwater Distributors have a black box available that will do the trick for around \$70. Phone (02) 939 2858.

Dear Editor,

I have some problems in getting the "Weekend Australian Program" to run, as printed in the March Volume 1 issue.

The major problem may be associated with line 2460 which appears to have some maths signs missing.

Would you please advise if any misprints appeared in that article or if the program will not run on a Vic 20 with a 16K Ram cartridge fitted.

S. Rusiniak
Narre Warren.

Ed: There were a few misprints which are outlined below. The program should work fine on a 16K Vic 20.

Corrections to Racing Program:

1. Insert a line:

1270 IF T=0 THEN T=.001

2. In line 2460 insert two plus signs:

2460 IF X=3 THEN SC=-3.2 +
W*1.156 - D*.009 + 2*.000002

Dear Mr Farrell,

Can you possibly tell me if there is available in Australia a Chess program to suit the Commodore 64.

I would be happy with either

cassette or cartridge, or even an "enter it yourself".

P. Spierings
Norlane, Vic.

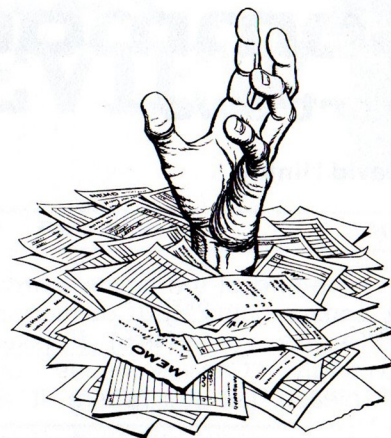
Ed: How brave even considering the possibility of entering a chess program yourself! Corgi and Bantam market a chess program which is available from most Commodore dealers. If you have trouble locating a copy, try calling them on (02) 709 2022.

Dear Andrew,

In reply to a reader's letter in your September/October issue, you stated that you liked letters with plenty of questions; hopefully you don't mind constructive criticism either. Anyway, here goes.

Firstly I am what you would term a "tenderfoot" when it comes to mastering my 64 and so I have read your magazine with interest in order to pick up all those helpful hints or otherwise regarding my Commodore system. At present I have a Datasette and a 1525 printer, but have been contemplating the purchase of a 1541 Disk Drive, although I have noted that almost every time the 1541 comes under review by your magazine it has been the target for much criticism. Although agreeing that you should be objective, surely there are also many Commodore owners who have not had any problems with the Drive. In fact, I know several owners of the 1541 who are very happy with their Drive, apart from the lack of speed.

Secondly, although still coming to grips with the programming aspect of the 64, I am always interested in trying the programs that you print as a regular feature of your magazine, however, here the trouble begins. Not being experienced in programming, I find it difficult to read the programs in the way they are presented - especially when reverse mode is used as part of the program.



Surely it would be possible to print these programs using helpful descriptions such as "press CTRL and C five times" or whatever so that we can all load these programs with ease. I am sure that most of your readers would find this a real advantage and so in turn would help you to realize the aim of your magazine.

Now, could you please tell me how I can obtain back issues of your magazine that I have missed? Having discovered it through a friend I have ordered it on a regular basis from my local newsagent, but he seems to be unable to obtain back issues.

By the way I have written this letter using "Write Now" which is a word processor put out by Ozi Soft. Being in cartridge form I have found this to be an excellent word processor considering I don't have a disk drive and can only type with one finger!

Finally, I must say that I do enjoy the overall content of your magazine and look forward to each issue. Please keep the good work going.

M.J. Richards
Stratford, Vic.

Ed: Regarding back issues, just drop us a note saying which you want and enclosing a cheque or postal order for \$3 per issue.

Program listings are normally listed using our CARDCO G+ interface, thus making them very readable. (See listing explanation in this issue.) However, occasionally contributions do not arrive in a form that allows us to do this. In all cases we will continue to drum into our graphic artist not to reduce program listings. □

climbing the ladders to learning

by Gareth Powell

All of us have complained at one time or another about the relatively high cost of software. We have all said that something should be done about it. And then done nothing.

Now McGraw-Hill in Australia have actually done something about the problem and produced a series of software educational programs which are the cheapest programs of their kind we have ever seen anywhere.

In truth, cheap is the wrong word. They are inexpensive. And of an extremely high quality.

The programs have now been launched in both disk and cassette form. The programs, published under the generic title Ladders to Learning, were conceived, written and manufactured in Australia. They are truly a world's first.

McGraw-Hill is a company which specialises in information in the widest sense of that word. The aim of the exercise was to produce an

educational series which supplements and complements but does not replace school education.

Solid education

Australian parents have always been concerned about how they could best help their children obtain a solid education. Until McGraw Hill launched their new series the programs available were all on the expensive side and, in many cases, difficult if not impossible to obtain. And it is sadly true that some programs boosted as being educational are badly conceived and inelegantly written.

The new series is having the widest possible distribution through major stores throughout Australia. The first batch of 40 titles is for use on the Commodore 64, which says much for the quality of the computer and the perspicacity of McGraw Hill.

The recommended retail price is \$11.95 for the single cassette version, which is probably going to be the one most parents buy, and \$14.95 for the double cassette and the disk version. The initial titles cover everything from reading skills to geography, up to a fairly advanced level of mathematics.

Sound and colour

The maximum use has been made of colour and sound, with the result that you learn by playing.

It will give you some idea of the power of attraction of these programs that I sat and played them when the Melbourne Cup was being run and refused to be interrupted by a mere horse race.

The second 40 titles are already in preparation and are aimed a little higher in the educational scale.

Next year McGraw-Hill will release programs for a fairly wide range of

computers. Its idea of the scope for educational programs starts with kindergarten and continues right through to the boardroom.

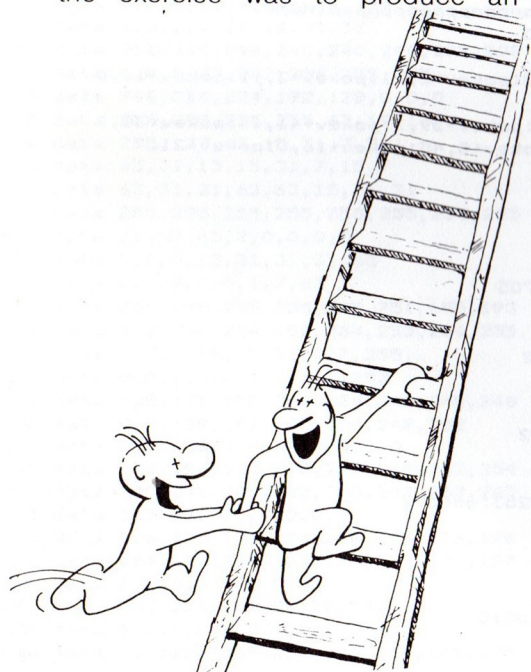
The decision to enter into this computer publishing program was only made 18 months ago, and to produce such a range in that time is no mean feat. Much of the credit must go to Sharon Ottery, the company's software product specialist, who has a background in both book publishing and computers.

The contents of each of the programs has been prepared by an expert in that area, and the actual programming with its extensive use of graphics and sound has been left in the hands of professional programmers.

Education first

McGraw-Hill made the decision at the outset never to let the programming override the educational direction of each program. Each program was continuously vetted during its development by a group of teachers to make sure it fitted into the general educational curriculum of Australia.

In the next issue we will publish an interview with the intrepid band of heroes who thought of the idea and went through innumerable knock-backs before they found safe haven in the arms of McGraw-Hill. □



Scuba Treasure

Slowly the flow begins. Here is a program for the Commodore 64 from Mark Hancock.



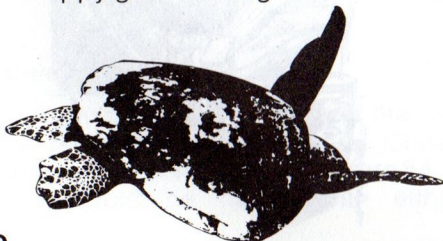
You are the scuba diver. You have to get past the shark, go through the cave and get the gold.

The gold has to be taken out in two separate lots (which means two trips). Once you get the gold, you take it back and put it in the container beneath the boat. The screen will flash once, when you put the gold inside. You can get scratched to death by the cave or eaten by the shark. You can also die if the air runs out.

The controls are W=up, A=left, D=right, S=down. I find these are easy to control. There are three levels (easy, medium, hard). The shark gets faster as the level gets harder. The other factors are affected like this:

	No. of times you can be cut	Amount of air
Hard	12	4½ mins
Medium	19	6½ mins
Easy	26	9¼ mins

Happy gold hunting!



ready.

```

1 goto3500
2 f=f-co
3 poke(20-int(f))*40+1103,16:poke(20-int(f))*40+1103+54272,1
4 iff<.3then2700
5 x1=x1+xd:pokev+2,x1:ifx1>129thenxd=-xd:poke2041,197
6 ifx1<6thenxd=-xd:poke2041,198
10 k=peek(197)
11 return
12 print"{CLR}{GRY1}":poke53280,7:poke53281,14:f=20
13 fori=12544to12551:pokei,0:next
14 poke53272,(peek(53272)and240)+12
15 fori=12288to12592:reada:pokei,a:next
16 v=53248:fori=832to1022:reada:pokei,a:next
17 fori=12608to12734:reada:pokei,a:next
18 restore
20 printtab(33)"{C/UP}swsddep"
22 printtab(20)"{C/UP}sdjjcdcjddjcccepppppp"
24 print"{C/UP}{WHT}gggggggggggggggggg{GRY1}sepppppppppppppppppp{GRN}p"
25 print"{C/UP}{YELO}↑{GRY1}hepppppppppppppppppp{GRN}p"
26 print"{C/UP}{YELO}↑{GRY1}sepba11ttblpppppppppppppp{GRN}p"
28 print"{C/UP}{YELO}+{GRY1}vpba11tpppppppppp{GRN}p"
30 print"{C/UP}{YELO}!##{GRY1}fppxswmpppppppp{GRN}p"
32 printtab(10)"{C/UP}{GRY1}hcjdeppu np[swmtppppp{GRN}p{GRY1}"
34 printtab(10)"{C/UP}nppppppp[ mpppx1lppp{GRN}p{GRY1}"
36 printtab(11)"{C/UP}mtblpppp[ nppujdcw1lp{GRN}p{GRY1}"
38 printtab(15)"{C/UP}mpppx oppppppujy m{GRN}p{GRY1}"
40 printtab(11)"{C/UP}hcwsvppppf nppppppppx n{GRN}p{GRY1}"
42 printtab(11)"{C/UP}opppppba vppppppppi o{GRN}p{GRY1}"
44 printtab(11)"{C/UP}fppppbk fptbzzmb@zk o{GRN}p{GRY1}"
46 printtab(11)"{C/UP}vptba sjdeb he{GRN}p{GRY1}"
48 printtab(10)"{C/UP}fpb sdepbk swscwscdep{GRN}p{GRY1}"
50 printtab(9)"{C/UP}hepx fpppi fpppppppppp{GRN}p{GRY1}"
52 printtab(8)"{C/UP}seppi opppx fpppppppppp{GRN}p{GRY1}"
54 printtab(7)"{C/UP}fppppf mpppf npppppppppp{GRN}p{GRY1}"
56 printtab(6)"{C/UP}heppppf fpppi vpppppppp{GRN}p{GRY1}"
58 printtab(5)"{C/UP}repppppx opppx jzzzz@za mp{GRN}p{GRY1}"
60 printtab(5)"{C/UP}qzz@@1tbk npppf n{GRN}p{GRY1}"
62 printtab(5)"{C/UP}vpppujdcjwsjcdcc np{GRY1}"
64 printtab(5)"{C/UP}rcjdcwscj djepppppppppppppppppx{YELO}#{GRY1}s="
66 print"ep"tab(5)"npppppppppppppppppppppppppppppppp{HOME}"
68 poke2023,16:poke56295,11:pokev+28,3
79 x1=24:y1=222:x=60:y=94:h=0:t=0:g=0
80 poke2041,198:pokev+40,1:pokev+38,12:pokev+2,x1:pokev+3,y1:pokev+16,0
88 pokev,x:pokev+1,y:pokev+31,0
90 poke2040,13:poke2042,15:pokev+38,0:pokev+39,7:pokev+41,13:pokev+30,0
91 pokev+23,4:pokev+29,4:pokev+4,24:pokev+5,45:pokev+16,0:pokev+21,7
92 pokev,x:pokev+1,y:ifx>=254then800
93 ifx<24thenx=24
94 ifpeek(v+31)<>0thengosub1800
95 ify<72theny=72
96 gosub2
99 ifpeek(v+30)=3thenpokev+39,2:goto2705
104 ifx<59andy<104thengosub1400
105 ify>240theny=240
135 ifk=10thenpoke2040,14:x=x-2:goto92
140 ifk=9theny=y-2:goto92
145 ifk=13theny=y+2:goto92
150 ifk=18thenpoke2040,13:x=x+2:goto92
151 goto92
800 pokev+16,1:rx=2
810 pokev,rx:ifrx<=1thenpokev+16,0:x=253:goto92
815 pokev+1,y
830 ifpeek(v+31)<>0thengosub1800
835 ify>223thengosub2300
840 gosub2
885 ifk=10thenpoke2040,14:rx=rx-2:goto810
890 ifk=9theny=y-2:goto810
    
```


Redefined characters on your Commodore 16

by Andrew Farrell

Commodore 16 owners are now a growing throng, hungry for information on their new wonder machine. Well, here comes the landslide of articles on HOW TO do all those amazing things the manual doesn't mention.

You will have noticed we are dealing with redefinable characters first. I'll explain what they are in just a moment, but to whet your appetite a little more, here are some of the other features we will be covering.

- * Smooth scrolling the entire screen.
- * Accessing sound with machine code.
- * Using screen windows in your own programs.

We welcome any reader contributions on other topics, including any neat programs you've designed.

What are they?

When you first turn on your Commodore 16 a predefined set of characters becomes available for you to display on the screen. These characters include upper and lower case, graphics characters and reverse characters. In day to day life these may be ample. However, when you start exploring the true potential of this machine you'll quickly want more.

Perhaps you need a Greek alphabet, or some special mathematics symbols, even a monster for your latest game. The possibilities are limited by your own imagination, providing you know how to get all the pretty shapes you need. Some would resort to drawing them on the Hi-Res screen. This is very space consuming and doesn't allow the shape to be animated or moved about the screen too easily.

An easier way is to redefine the standard character set that we



started out with. The standard set is stored in ROM, so the first step is to tell our computer not to look at the ROM set. Then we have to tell it where to look instead. Last of all we have to put our new character definitions in that area of memory.

Characters

Before we rush ahead any further, it is important to understand what a character is and how we can define our own. Each character (a letter, number or special symbol) that appears on the screen is made up of 64 tiny dots. These dots are set up as an eight by eight matrix. By turning these dots on and off it is possible to control the way the character appears. In all there are 255 of these characters we can define.

Let's experiment

To understand exactly what is going on here, let's experiment a little. Type in the following short program and when you run it, watch closely what happens.

```

10 poke 65298,192
20 poke 65299,56
30 ba=56*256
40 for i=0 to 7: read a:poke ba+i,a:next
45 print"[clr home] @ @ @ @ @"
50 getkey r$
    
```

```

60 poke65298,198:poke65299,208:
end
70 data255,129,129,129,129,129,129,
255
    
```

If all goes well you should now be looking at five boxes at the top of your screen. Line 45 actually printed five '@' symbols which we redefined in line 40. The reason your Commodore 16 knew about this change was those tricky POKES in lines 10 and 20.

Graphics and sound on the Commodore 16 are controlled by the TED chip, which sits from locations 65280 (\$FF00) to 65343 (\$FF3F). The first two pokes into this area of memory tell the computer to look at RAM for the character definitions instead of ROM and where the new character definitions will start. This value is multiplied by 256 to give the actual base address of the character definitions in line 30.

Line 60 simply reverses our previous POKES back to normal and line 70 is the data for our character. This data is obtained by adding the bit values for each row together. Since there are eight rows we need eight pieces of data to construct a character.

Here's how we find the values:



This process may be greatly simplified by using a character editor. Such a program is in the pipeline and will be appearing in the Commodore Review shortly.

Making space

Our first example only displayed one redefined character on the screen that didn't seem to have any detrimental effects on the way everything was organised. Well, here comes the crunch. By telling the computer to look at our redefined set we lose all those nice characters we are so used to looking at. Secondly if we just redefine our characters and march on regardless, we will find that strange things start happening after a while.

To explain we need to see how memory is organised in the Commodore 16.

system storage	\$0000-\$07FF 0000-2047
colour attributes	\$0800-\$0BFF 2048-3071
screen memory	\$0C00-\$0FFF 3072-4095
program space	\$1000-\$3FFF 4096-16383
no memory fitted	\$4000-\$7FFF
BASIC ROM	\$8000-\$D7FF
Character ROM	\$D000-\$D7FF
I/O, Kernal	
Banking routines	\$D800-\$FFFF

A little over simplified, but you probably get the general idea. Your program sits from locations 3072 to 4095 in memory. Not a lot of space, yet enough for most needs at this stage. You'll notice that towards the top of memory the character ROM sits snugly between several other vital

parts. It takes up exactly 2K of memory. Our new area for the character set will also take up 2K. If you go back to our experiment earlier on you'll see that this 2K of space was defined by the variable BA. Line 25 reads BA=56*256. That is page 56 in memory times 256 bytes per page. This will give us the actual memory location where our character set will sit.

Some simple maths shows that this is in fact from 14336. Now back to our memory map and OOPS! Location 14336 is smack bang in the middle of your program area. Well,

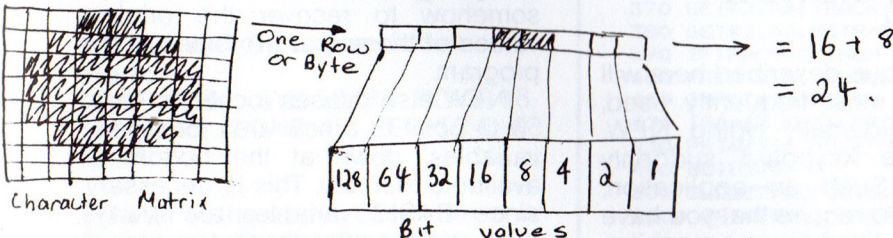
it's sort of toward the end. Variables are stores in that same area of memory so to sort things out we had better tell the computer to use somewhere else. This is done by changing the top of memory pointer and then performing a CLR command.

We can now add to our program:
5 POKE 56,55:clr

Have fun with graphics characters until next month. Please send in any problems, amazing discoveries or interesting programs to the Commodore Review as soon as possible. □



Insert 1



Ball: character data 24, 60, 126, 126, 126, 60, 24.

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Rescuing Lost Files

by Peter Gummer

One of the most infuriating things that can happen to a programmer is to destroy hours of work by accidentally eliminating a program. This can all too easily occur while scratching unwanted files on disk, especially if the pattern-matching options are used. It can also occur while entering a program at the keyboard, either by the keyboard unexpectedly locking up or the programmer thoughtlessly entering the NEW command. This article describes how to recover a file should either of these situations occur on the VIC or 64.

Recovering a scratched disk file

The listing accompanying this article is a program for recovering scratched 1541 disk files. Using it is quite straightforward, so I'll only mention in passing such points as need to be made, while describing how the program works.

First of all the user is asked for the name and type of the file that has been scratched, storing these responses in the variables NAME\$ and TYPE. The type can be one of four options: [P]rogram, [S]equential, [U]ser or [R]elative. Line 80 then waits for a key to be pressed before beginning the rescue operation. (Note the method used to pause here: it is a more flexible alternative to the familiar GETA\$:IFA\$«" THEN80.)

The loop between lines 140 and 280 searches through the disk directory on track 18 with the USER1 command, until the file name that you input is found. The file name is still there, even though it doesn't show up in directory listings. Scratching a file leaves the entire entry for that particular file intact, with the sole exception of one byte. This is the first byte of the entry, which contains a different value depending on whether it belongs to a sequential, program, user, relative or scratched file.

If the filename is found, lines 310 and 320 check that the file really was scratched. If so, lines 330 and 340 put the value of TYPE into the first byte, using the BUFFER-POINTER and USER2 commands. This now permits your file to be included in directory listings. However, it isn't safe yet from being overwritten by the next file saves on this disk: you still need to write to the BAM (Block Availability Map), so that the blocks actually occupied by your file can be reallocated to it.

This is accomplished by the loop at lines 370 to 440, which follows the pointers from one block of the file to the next. As each new block is found, the BLOCK-ALLOCATE command in line 400 attempts to reallocate it in the BAM. This process is eventually halted by one of two possible events: either a pointer to a non-existent track number 0 is encountered (in which case the file has been recovered); or else the attempt to reallocate a block results in error message #65, meaning the block is already allocated (and your file has been overwritten).

The time taken to do the job depends on the length of the file to be unscratched and the number of files in the directory. But even very long files should take no more than 60 seconds to recover.

Before utilising this program, please test it on an unimportant disk. This will ensure that any errors made while typing it in won't have a disastrous effect on your disks.

Reversing the NEW command

The technique described here will probably be most frequently used, not after accidentally typing NEW, but after the keyboard suddenly goes dead. Such an application, however, would require that you have a reset switch fitted to your machine, enabling you to cause a cold start without having to turn the power off.



Both NEW and the cold start seem equally disastrous for your program: that is, they seem to wipe it from memory. But fortunately, like scratching a disk file, only a few crucial locations are actually changed. As far as concerns your program, the most important locations consist of two bytes at the very beginning of the program, plus the Start-of-Variables pointers at memory locations 45 to 50 (these are documented in the memory maps in the Programmer's Reference Guides).

The very first two bytes of any BASIC program line are important: they point to the start of the next line. Likewise the first bytes of a program just tell the computer where to find the second line during a RUN or a LIST. But typing in NEW replaces those first two bytes with zeroes: these are signals that the end of the program has been reached. So if we are going to reverse NEW, we have somehow to recover the original values of those first two bytes of the program.

NEW also causes locations 45 to 50 to point to a new area for storing variables, down at the bottom of available memory. This is necessary, since BASIC variables are always kept straight after those two zeroes that indicate where the program ends. Fortunately, this doesn't mean

that your program is immediately overwritten by any variables lying around when NEW is typed. NEW, after all, also gets rid of the variables along with the program. So provided no variables are used afterwards, the program will not be corrupted by them.

Therefore, two things must be done to recover from NEW or a cold start. First, fix up the two initial bytes of the program; second, set the variable pointers to the correct spot, just above the real end of the program. Of course, several books and magazines have published machine language routines which do just that. Also, some extended BASICs, such as Simon's BASIC, feature a command especially to do the job. But they all raise the problem: what if I don't happen to have any of them loaded into the computer when disaster strikes?

The problem is solved by the following lines. Choose the correct line for your computer, and use it to recover your NEWed program:

For Commodore 64:

```
POKE 2050,1: SYS 42291: POKE 46,
PEEK(35): POKE 45, PEEK(781)«2:
CLR
```

For unexpanded VIC:

```
POKE 4098,1: SYS 50483: POKE 46,
PEEK(35): POKE 45, PEEK(781)«2:
CLR
```

For VIC with 3K expansion:

```
POKE 1026,1: SYS 50483: POKE 46,
PEEK(35): POKE 45, PEEK(781)«2:
CLR
```

For VIC with 8K expansion or more:

```
POKE 4610,1: SYS 50483: POKE 46,
PEEK(35): POKE 45, PEEK(781)«2:
CLR
```

In all of the above cases, there is about a 1% chance that the computer will respond with ?ILLEGAL QUANTITY ERROR. If this happens,

type in one more line (the same for all machines):

```
POKE 45, PEEK(781)-254: POKE 46,
PEEK(46)«1: CLR
```

But I hear some people saying,

"So what? The reset switch I bought describes another method, with one fifth of the typing!" Unfortunately, that method, involving one POKE and typing in a line number, only half does the job. You will be able to LIST your program, but you can neither

```
1 REM RECOVER SCRATCHED 1541 DISK FILES
2 REM PETER GUMMER AUGUST 1984
10 POKE53280,12:POKE53281,15
20 PRINT"CLR}{C/DN}{GRY1}{RVON} RECOVER SCRATCHED FILES
30 INPUT" {C/DN}NAME OF FILE";NAME$
40 INPUT" {C/DN}TYPE OF FILE";TYPE$
50 NAME$=LEFT$(NAME$,16):TYPE$=LEFT$(TYPE$,1):TYPE=0
51 IFTYPE$="S"THENTYPE=129
52 IFTYPE$="P"THENTYPE=130
53 IFTYPE$="U"THENTYPE=131
54 IFTYPE$="R"THENTYPE=132
60 IFTYPE=0THEN40
70 PRINT" {C/DN}{C/DN}{RVON} HIT ANY KEY WHEN DISK IS IN DRIVE "
80 WAIT198,1:GETA$
100 OPEN15,8,15:REM COMMAND CHANNEL
110 OPEN2,8,2,"#":REM DATA BUFFER
120 REM SEARCH DIRECTORY FOR FILENAME
130 SCTR=1:REM BEGIN AT TRACK 18, SECTOR 1
140 IF SCTR=255 THEN PRINT"FILE NOT FOUND":GOTO600
150 PRINT#15,"U1:"2;0;18;SCTR:REM READ A BLOCK INTO THE BUFFER
160 ENTRY=-1:S=SCTR
170 GET#2,A$:GET#2,A$:SCTR=ASC(A$)
180 REM EXAMINE EACH ENTRY IN THIS BLOCK
190 ENTRY=ENTRY+1:IF ENTRY=8 THEN 140
200 PNTR=5:GOSUB1000
210 FOR BYTE=1TOLEN(NAME$)
220 N$=MID$(NAME$,BYTE,1)
230 IFN$="*" THEN BYTE=16:NEXT:GOTO300
240 GET#2,A$:IFA$=CHR$(160) THEN 260
250 IFN$="?" THEN NEXT BYTE
260 IFN$<>A$ THEN BYTE=16:NEXT:GOTO190
270 NEXT BYTE
280 GET#2,A$:IFA$<>CHR$(160)ANDA$<>CHR$(0) THEN 190
290 REM FIX DIRECTORY ENTRY'S FILE TYPE
300 PRINT"FOUND ";NAME$:PRINT
310 PNTR=2:GOSUB1000:GET#2,A$
320 IFA$>CHR$(128) THEN PRINT"FILE WAS NOT SCRATCHED":GOTO600
330 GOSUB1000:PRINT#2,CHR$(TYPE);
340 PRINT#15,"U2:"2;0;18;S:REM WRITE BUFFER BACK TO DISK
350 REM REALLOCATE THE FILE IN THE BAM
360 PNTR=3:GOSUB1000
370 GET#2,A$:TRACK=ASC(A$+CHR$(0))
380 GET#2,A$:SCTR=ASC(A$+CHR$(0))
390 IF TRACK=0 THEN PRINT"FILE RECOVERED":GOTO600
400 PRINT#15,"BLOCK-ALLOCATE:"0;TRACK;SCTR
410 INPUT#15,A:REM CHECK FOR ERROR #65 (BLOCK NOT AVAILABLE)
420 IFA=65 THEN PRINT"SORRY, IT HAS ALREADY BEEN OVERWRITTEN":GOTO600
430 PRINT#15,"U1:"2;0;TRACK;SCTR:REM NEXT BLOCK OF FILE
440 GOTO370
600 CLOSE2:CLOSE15:END
1000 PRINT#15,"BUFFER-POINTER:"2;ENTRY*32+PNTR:RETURN
```

READY.



RUN NOR SAVE it, since it fails to reset the variable pointers.

Then how does the present version work? There are two basic stages. The first involves POKEing a number other than zero into the second byte of your lost program. This sets things up for a SYS to a machine language routine that exists permanently inside the BASIC ROM of both the VIC and the 64 (albeit in different places). This routine has a name: we'll call it LNKPRG, because its job is to build those pointers that link one program line to the next. By a simple SYS to LNKPRG, the first two bytes of the program are returned to their proper values.

This is about as far as the method that comes with the reset switch goes. The second stage of this article's method involves POKEing to the variable pointers in locations 45 to 50. But how do we know what to POKE there? The answer is again LNKPRG. One side-effect of SYSing to this routine is that it leaves the value we need to POKE into location 46 lying in location 35: so we POKE 46, PEEK(35). It also happens to leave nearly the correct value for location 45 in 781: so POKE 45, PEEK(781)«2. (For the machine language programmers out there, 781 is a mirror-image of the .X Register. It is set whenever a machine language subroutine returns to BASIC.) Finally, we fix up the other variable pointers, from 47 to 50, with a simple CLR, so leaving our program as good as NEW... or should I say OLD?

In conclusion, it should be emphasised that neither of the techniques described in this article is likely to work if you've already saved something else on the disk, or if you've used any variables since entering NEW. Hopefully, this article will be as useful in helping people understand how their computers work, as it should be in salvaging their "lost" programs. □

New Commodore 64 cold and warm start routines

by Peter Gummer



This article describes how to prevent everything going back to normal on the Commodore 64 after a cold start. A cold start is what occurs every time you turn the computer on or after you enter the command SYS 64738.

It also happens if you use a reset switch fitted to your computer to get out of a locked up keyboard. The screen goes blue, any programs are wiped from memory, and everything is reset to its default value.

It is possible, however, to choose a different sequence of events. This is because the first thing the computer does during a cold start is to check whether a cartridge is plugged in. More precisely, the cold start routine checks on whether memory locations 32772 to 32776 contain the characters "CBM80". If these characters are found, the computer forgets about what it would normally do: rather, it jumps to a routine indexed by memory locations 32768 and 32769, and does what it finds there instead.

The program accompanying this article takes advantage of this. After RUNNING it, a new cold start routine will have been POKEd into memory beginning at 32768, including those all-important characters, "CBM80".

Now try pressing your reset switch, or enter SYS 64738. The new routine will do everything normally done by a cold start, except for one thing: the screen will turn white instead of blue. Because this is only a short demonstration program, nothing more interesting than this occurs. However, it would be very easy to make the computer perform some other activity, such as recovering the program in memory instead of NEWing it. For example, commercial programs like Easy Script protect themselves from piracy by using this same method.

In addition to redirecting the cold start, "CBM80" redirects warm starts as well. A warm start is what occurs when you hit STOP/RESTORE. For these, "CBM80" causes the computer to jump to a routine indexed by locations 32770 and 32771. The possibilities here are perhaps even more interesting than for the cold start. However, I've once again settled for just making the screen change colour: whenever the RESTORE key is hit, the border changes.

Notice that the effect occurs without the STOP key being pressed, even though we tend to think of RESTORE as having no effect



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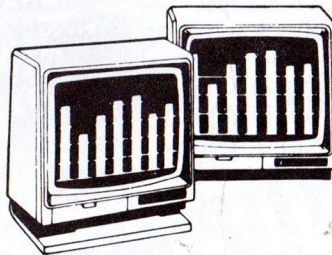
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WF/Z5A

An improved screen editor for the Commodore 64

by Peter Gummer

The Commodore 64 has an excellent editor, which allows you to cursor around the screen and to insert and delete characters with great ease. However, in the year that I've owned my 64, there've been times when I wished I could go to the bottom of the screen as easily as I can get to the top with the HOME key.

I've also had occasion to wish for an insert mode which doesn't require you to press the INSERT key, such as is found in many word processing programs.

The program accompanying this article fulfills these and other wishes. It is written in machine language, but is printed here in the form of a BASIC loader program.

After typing in the entire program, check that there have been no mistakes in entering the DATA statements by typing RUN 50000. This will perform a checksum, informing you if you've made any typing errors. Once the data is OK, you can delete the lines from 50000 onwards and save the program to tape or disk. Then try running the program. It will POKE the machine language into the unused memory area beginning at 49152. The new editor will then be activated when you enter SYS 49152.

This new Commodore 64 editor is identical to the machine's standard editor, but adds new capabilities, accessed mainly through the function keys. It works by intercepting the IRG (Interrupt ReQuest) which the 64's inbuilt timer generates every sixtieth of a second, and which normally does things like check on which key is being pressed at the moment.

One problem with adding new capabilities to the computer is that it can slow down running programs. For this reason, I've decided to disable these new functions whenever the cursor is not flashing. In other words, the only time you can use them if a program is running is during an INPUT statement. This means really very little loss, since there is no reason for wanting to use them at any other time anyway.

The REMarks at the beginning of the loader program describe each of the new functions. Note that the RESTORE key also behaves a little differently from normal. This is to overcome another problem with utilities that use the IRQ interrupt, namely, that hitting STOP/RESTORE returns everything to normal. In fact, far from being disabled by STOP/RESTORE, this new screen editor goes so far as to prevent the colours

from returning to their standard combination of boring blue.

Hopefully, this improved editor will become something that you load into your computer as frequently as disk users load in the DOS Wedge. It would also be interesting if people found applications which involve incorporating it into larger programs. □

```

10 rem *** enhanced screen editor ***
12 rem *       for commodore 64       *
14 rem * by peter gummer - oct 1984 *
16 rem *                               *
18 rem * new facilities are:          *
20 rem * f1: list program from the *
22 rem * line number under cursor *
24 rem * f3: run program              *
26 rem * f2: new insert mode on     *
28 rem * f4: new insert mode off    *
30 rem * f5: tab 5 spaces            *
32 rem * f7: cursor to bottom-left *
34 rem * f6: clear current screen *
36 rem * line                        *
38 rem * f8: clear from cursor to *
40 rem * screen bottom              *
42 rem * ctrl-backarrow: erase the *
44 rem * character after cursor    *
46 rem * space-bar: pauses list or *
48 rem * run until pressed again *
50 rem * stop-restore: normal, but *
52 rem * colours stay unchanged *
54 rem * ctrl-restore: disables *
56 rem * the above facilities *
58 rem *                               *
60 rem ***sys*49152*to*re-enable***
100 for i=49152 to 49627
110 read a:pokei,a
    
```



without STOP. Also, even though the colour changes aren't visible with STOP/RESTORE in this program, it is perfectly possible to cause a different sequence of events to occur, just as it was with the cold start.

Although you may be interested in using this technique in a program, there is one drawback: any routine located around 32768 lies inside the normal BASIC programming space, and will probably be clobbered by any program you run. Unfortunately, the "CBM80" message cannot be moved if it is to have any effect. This

means you must limit the highest address used by BASIC with the commands: POKE52,128:POKE56,128. That means less room for your BASIC program to use...but it would be a great place to put sprites!

For those who like peeking at the computer's internals with a monitor, the Kernal routines which enable these little acts of magic can be found at \$FCE2 and \$FE48. Similar things also occur inside the Vic 20: Vic owners may be interested in seeing if the same tricks can be performed on their machines. □

```

10 rem *new*cold*start*and*warm*start*
20 rem *       for commodore 64       *
30 rem * peter gummer november 1984 *
40 rem * * * * * * * * * * * * * * * *
100 for i=32768 to 32821
110 read a:pokei,a
120 next i: end
32768 data 9,128,48,128,195,194,205,56
32776 data 48,142,22,208,32,163,253,32
32784 data 80,253,32,21,253,32,91,255
32792 data 88,32,83,228,32,191,227,32
32800 data 34,228,162,252,154,169,1,141
32808 data 32,208,141,33,208,76,134,227
32816 data 238,32,208,76,94,254
    
```


PROGRAMMING

```

120 next:print"{CLR}{C/DN}{C/DN}sys49152{HOME}";:new
49152 data 120,173,20,3,141,50,192,173
49160 data 21,3,141,51,192,169,122,141
49168 data 20,3,169,192,141,21,3,169
49176 data 56,141,24,3,169,192,141,25
49184 data 3,169,13,141,32,208,169,15
49192 data 141,33,208,169,11,141,134,2
49200 data 88,96,49,234,255,0,0,32
49208 data 72,138,72,152,72,169,127,141
49216 data 13,221,172,13,221,48,48,32
49224 data 188,246,32,225,255,208,18,32
49232 data 197,193,32,21,253,32,163,253
49240 data 32,24,229,32,0,192,108,2
49248 data 160,32,159,255,173,141,2,201
49256 data 4,208,12,32,197,193,32,83
49264 data 228,32,138,255,108,2,160,76
49272 data 114,254,165,204,240,40,165,197
49280 data 201,60,208,74,162,0,160,0
49288 data 202,208,253,136,208,250,32,159
49296 data 255,165,197,201,60,208,247,32
49304 data 159,255,165,197,201,60,240,247
49312 data 169,0,133,198,240,40,165,215
49320 data 201,6,208,20,32,159,193,160
49328 data 29,32,174,193,160,20,32,174
49336 data 193,169,0,141,141,2,240,14
49344 data 174,52,192,208,12,165,215,41
49352 data 96,240,6,32,133,193,108,50
49360 data 192,173,135,2,141,54,192,165
49368 data 206,141,55,192,165,216,141,53
49376 data 192,165,215,201,133,208,34,32
49384 data 197,193,166,209,164,210,134,122
49392 data 132,123,32,121,0,32,107,169
49400 data 32,19,166,32,212,193,169,13
49408 data 32,210,255,32,96,166,76,195
49416 data 166,201,134,208,9,32,197,193
49424 data 32,89,166,76,174,167,201,137
49432 data 208,8,169,0,141,52,192,32
49440 data 159,193,201,138,208,6,141,52
49448 data 192,32,159,193,201,135,208,20
49456 data 32,159,193,169,29,162,5,134
49464 data 198,202,157,119,2,16,250,232
49472 data 134,212,134,216,201,136,208,6
49480 data 32,159,193,32,212,193,201,139
49488 data 208,5,166,214,232,208,10,201
49496 data 140,208,31,162,25,202,32,255
49504 data 233,181,217,9,128,149,217,228
49512 data 214,208,242,200,132,212,132,216
49520 data 132,211,152,32,210,255,169,39
49528 data 133,213,108,50,192,32,210,255
49536 data 173,52,192,208,25,160,148,32
49544 data 174,193,164,211,177,209,201,32
49552 data 208,12,164,211,173,54,192,145
49560 data 243,173,55,192,145,209,96,173
49568 data 53,192,5,212,240,248,32,172
49576 data 193,76,146,193,160,157,165,212
49584 data 72,165,216,72,169,0,133,212
49592 data 133,216,152,32,210,255,104,133
49600 data 216,104,133,212,96,165,206,174
49608 data 135,2,160,0,132,207,200,132
49616 data 204,76,19,234,24,162,24,160
49624 data 0,76,240,255
49628 rem
49650 rem
50000 rem * * * * checksums * * * * *
50010 fori=49152to49311:reada:b=b+a:next:ifb<>19666then50050
50020 fori=ito49471:reada:b=b+a:next:ifb<>40129then50050
50030 fori=ito49627:reada:b=b+a:next:ifb<>63421then50050
50040 print"data ok":end
50050 print"error in data before line";i:end

```

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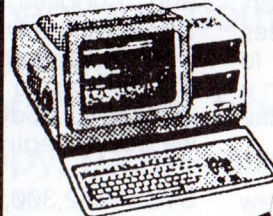
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Line transfer routine for the Commodore 64

by Peter Gummer

A part from renumbering the lines in a program or merging one program with another, one of the most tedious tasks on an ill-equipped computer can be moving a group of lines from one part of a program to another. Frequently, programmers would rather leave lines in an illogical order and patch them together using GOTOs, rather than undertake the job of listing the lines and changing their numbers one by one, to move them where they really should be.

The accompanying program is a BASIC loader for a machine language routine designed especially for moving groups of lines around. Running the program places the routine in memory at 49152. Then, whenever you need to transfer lines from one part of a program to another, the job will be done within a few seconds by entering the following command:

```
SYS 49152,first line,last line,new starting line
```

This will relocate all lines between the first two numbers entered, so that they now are positioned beginning at the third number. The new lines will be numbered in steps of 1. For example, if you wish to move lines 300 to 470 in a program so that they begin at line 600, you would enter the following:

```
SYS 49152,300,470,600
```

The lines would then be located from line 600 onwards.

This routine offers the option of leaving the old lines where they were or of deleting them. By not deleting them, the routine can be put to a different task of producing multiple copies of a group of lines. This can be useful to save typing in a lot of

lines which are very similar to each other.

Another use for this routine would be to delete a number of lines at one go. This could be done by making the third number the same as the first and choosing the delete option. However, the lines you wish to delete would have to be numbered in steps of 1 for this to work. For example, if we wished to delete lines 300 to 470, we would begin with the following:

```
SYS 49152,300,470,10000
```

This assumes that the program does not already have lines from 10000 onwards. The lines would now have been moved after line 10000 in steps of 1. Now enter this:

```
SYS 49152,10000,10020,10000
```

If the moved lines didn't go past 10020, choosing the delete option will have completely removed the unwanted lines.

When using this routine, there is just one thing to be careful of. Just as when moving lines the tedious way you have to be careful not to overwrite any existing lines, so also this routine overwrites any lines which already have a number it wants to use. Always renumber lines which may be in danger, before calling the transfer routine. □



```
10 rem ****line*transferring*utility****
20 rem *   by peter gummer 1984   *
30 rem * transfers range of lines in *
40 rem * a basic program to another *
50 rem *   part of the program   *
60 rem * example of syntax:       *
70 rem * sys49152,10,90,1000 moves *
80 rem * lines 10 - 90 to line 1000 *
90 rem *****
100 b=0:for i=49152to49360
110 read a:b=b+a
120 poke i,a:next i
130 ifb(>)25281thenprint"error in data"
140 end
49152 data 32,156,192,134,172,132,173,32
49160 data 156,192,134,174,132,175,32,156
49168 data 192,134,253,132,254,169,183,160
49176 data 192,32,30,171,32,96,165,173
49184 data 0,2,133,2,165,172,133,20
49192 data 165,173,133,21,32,19,166,160
49200 data 3,177,95,133,173,133,252,136
49208 data 177,95,133,172,133,251,230,172
49216 data 208,2,230,173,136,177,95,240
49224 data 64,200,56,165,174,241,95,200
49232 data 165,175,241,95,144,51,200,177
49240 data 95,153,252,1,208,248,200,165
49248 data 253,133,20,165,254,133,21,32
49256 data 167,192,230,253,208,2,230,254
49264 data 165,2,201,89,208,174,165,251
49272 data 133,20,165,252,133,21,160,0
49280 data 140,0,2,32,167,192,76,36
49288 data 192,120,32,83,228,88,32,96
49296 data 166,165,43,133,95,165,44,133
49304 data 96,76,195,166,32,253,174,32
49312 data 107,169,166,20,164,21,96,24
49320 data 104,105,1,141,2,3,104,105
49328 data 0,141,3,3,76,162,164,13
49336 data 68,69,76,69,84,69,32,84
49344 data 72,69,32,79,76,68,32,76
49352 data 73,78,69,83,63,32,78,157,0
```


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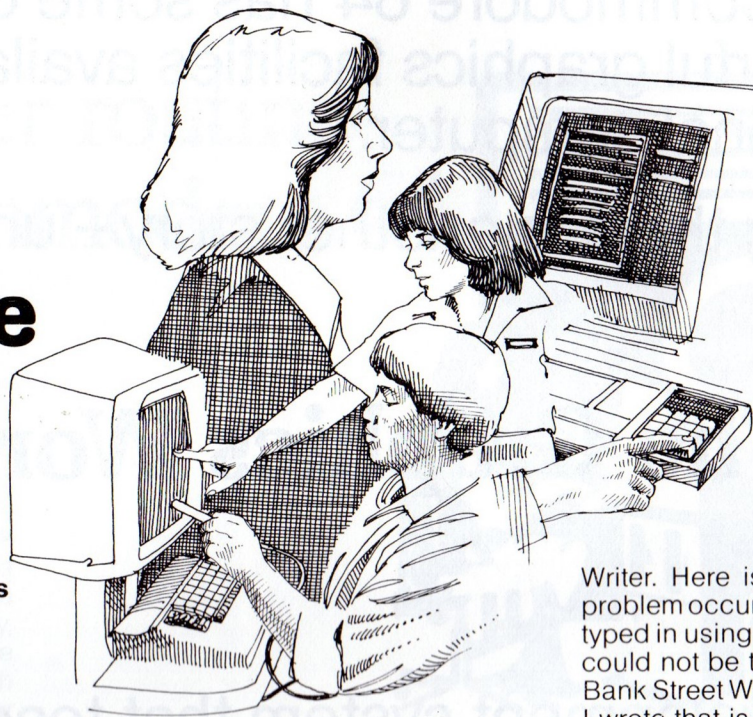
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Children writing Adventure Programs on C-64

by Neil Williams of Howard Springs School, Northern Territory.



We decided to end off this our first year of computing at Howard Springs with the children writing their own adventure games. We conceived this as an exercise in writing using a computer as the stimulus to get the children to write. Our aim was to promote writing, not to promote programming, of which none was expected of the children. The idea came initially from the principal (Ray Hopkins) after he read a number of articles in computer magazines about children using a word processor to create Twist-a-Plot type stories. After discussions with me (mainly centering on the logistics of the exercise) the idea was presented to the rest of the staff, and three teachers followed it up, saying they wanted their children to be involved. I eventually has three groups: a grade Seven group, and two grade Six groups.

Text-based adventure

After some reading and searching through book stories on my part, I decided that the best way to tackle the exercise was to try to get the children to write a very simple text-based adventure. Writing a Twist-a-Plot would be far too complicated a task to perform in the time available. I found an excellent book, "Commodore 64 Adventures" by Mike Grace, which helped me enormously to understand how adventures are constructed. An understanding of adventure games and adventure game programming is

required by the teacher before attempting this task, and if you are considering attempting this yourself then I would strongly recommend that you get this book or one like it.

I decided that a base program should be written which would take from the disk a file for every location and every peril that the children wanted to make (a listing of this base program is included). The files would contain all the text to appear on the screen. I also decided to use Bank Street Writer to create these files. This was mainly due to the fact that it was the word processor we had and we didn't want to buy another simply for this exercise, however we were able to make them work (more on that later).

Group exercise

The children were put to work in groups with the stated intention that this was to be a group exercise. They had to construct a detailed map of their adventure and write a description for every location on their map. This took varying lengths of time to accomplish. The grade Seven group was the fastest as they were given as much time on the task as they needed, while it took one of the grade Six groups three weeks of fairly solid work to get all the descriptions written.

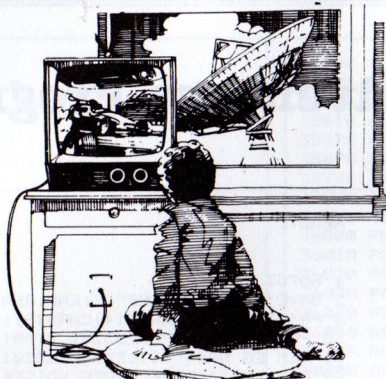
Once the descriptions were finished they needed to be placed on the disk on files through Bank Street

Writer. Here is where the first major problem occurred. Although they were typed in using Bank Street Writer, they could not be taken off the disk using Bank Street Writer, but with the routine I wrote that is in the sample program attached (lines 2000-2160). When a word overruns the end of a line in Bank Street Writer it is automatically placed on the next line. This would not be happening in my subroutine. Using this Bank Street Writer feature resulted in the words being printed on the screen without a space between them and the text changing from lower to upper case. This problem was alleviated by pressing RETURN at the end of each line. Of course this is not the normal practice in Bank Street Writer, but remember that the output is not onto a printer using Bank Street Writer but onto the screen using BASIC. The kids took a while to get used to this, but after several goes at it and seeing the results on the screen they were able to adjust fairly easily.

The second problem I encountered was to set up a system whereby I was able to recall the correct file following each movement from one location to another. I overcame this problem by using a grid 10 by 10 on which a map of all the locations was placed. Thus every location has a number on this grid. As well all the locations were connected to the north, east, south, and west using the array PO which was initialised from the data lines 60000-60100 (the last three digits of the line number corresponding with the location number on the grid) e.g.

1 line number DATA north, east, south, west

Thus every location was numbered and if you were able to go in a particular direction you wrote in the



number of the new location on the data line, if you were unable to go in a direction then the number was set to 0, e.g.

60005 data 0,6,0,4

would mean from location number 5 you could go east to 6 and west to 4 but not north or south as they both had 0 in their respective places. When the descriptions were typed in using Bank Street Writer, they were given a name and a number eg SPACE56 which stood for SPACE being the name of the program and 56 being the location. Of course the locations used on the base program had to be adjusted for each adventure so that they related to each particular map.

I used the same array and data line system for colour coding each location eg:

60205 data 12,12,144

stand for border and background colour of 12 (light grey) and cursor colour of black (chr\$(144)).

I decided to use very few words in the adventures and very simple perils. The approach I used was for there to be a particular object which needed to be carried in order to overcome each peril (e.g. a galactic drive would get you through a black hole). The children wrote a victory file and a defeat file for each peril. Thus, when you entered one of the locations where a peril existed the program would check to see if you were carrying the correct object. It would then display the appropriate message and carry out the appropriate action. This involved some programming on my part but much less than if I had tried to write a highly interactive adventure.

This approach meant that a minimum of time was spent with me programming all sorts of tricks and most of the time was spent with the children creating adequate descriptions of the locations and the perils (which were also placed on file using Bank Street Writer).

This exercise has been one of the best things we have done in computing this year. I have had many satisfying sessions when I have the entire room full of children typing in their descriptions and critically analysing their own writing. Here for the first time in the year was a room full of children using the computer as a tool and not as some magical machine which will solve their problems.

I would recommend this exercise to anyone. The programming effort from the children is minimal and from you is really fairly easy. We will certainly be making this an annual event at Howard Springs.



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EDUCATIONAL/ADVENTURE

Adventure Programs on C-64

READY.

```

1 GOTO3
2 SAVE"@0:ADVENTURE",8:END:REM USED IN PROGRAM DEVELOPMENT (TYPE IN RUN2)
3 PRINTCHR$(9)CHR$(14)CHR$(8):REM SET TO LOWER CASE AND LOCKED
30 POKE53280,2:POKE53281,2:PRINTCHR$(5)"@":REM TITLE COULD BE PLACED HERE
31 REM EG NA#="TITLE":GOSUB2010
49 REM INITIALISE THREE VOICES OF THE SOUND CHIP
50 VO=54296:W1=54276:W2=54283:W3=54290:A1=54277:A2=54284:A3=54291:S1=54278
51 S2=54285:S3=54292:H1=54273:H2=54280:H3=54287:L1=54272:L2=54279:L3=54286
97 REM***
98 REM INITIALISE THE PO(POSITION),CL(COLOUR)ANDOB(OBJECT)ARRAYS
99 REM***
100 DIMPO(100,4):DIMCL(100,3):DIMOB(9):DIMOB$(9):DIMDE$(9)
110 RESTORE:FORX=1TO10000
120 READA$:IFA#="LOCATIONS"THENX=10000
130 NEXT
140 FORX=1TO100
150 READA,B,C,D
160 PO(X,1)=A:PO(X,2)=B:PO(X,3)=C:PO(X,4)=D
170 NEXTX
180 RESTORE:FORX=1TO10000
190 READA$:IFA#="COLOURS"THENX=10000
200 NEXTX
210 FORX=1TO100
220 READA,B,C
230 CL(X,1)=A:CL(X,2)=B:CL(X,3)=C
240 NEXTX
250 RESTORE:FORX=1TO10000
260 READA$:IFA#="OBJECTS"THENX=10000
270 NEXTX
280 FORX=1TO9
290 READA,B$,C$
300 OB(X)=A:OB$(X)=B$:DE$(X)=C$
310 NEXTX
400 BO=53280:BA=53281:BS#="NAME":REM 'NAME' IS USED ON BSW FILES
1950 FORL=0TO24:POKEL1+L,0:NEXT
1960 GOTO3000
1970 REM***
1980 REM TAKE SCREEN FROM THE BSW FILE
1990 REM***
2000 N1#="":N2#="":NA#=BS#+STR$(P)
2010 NB#="":FORX=1TOLEN(NA#)
2020 N1#=MID$(NA#,X,1)
2030 IFASC(N1#)>=4BANDASC(N1#)<=57THENN2#=#N1#:GOTO2060
2040 IFASC(N1#)=32THENN2070
2050 N2#=CHR$(ASC(N1#)+128)
2060 NB#=#N1#+N2#
2070 NEXTX
2080 IFLEN(NB#)<13THENNB#=#NB#+CHR$(32):GOTO2080
2090 OPEN15,8,15
2100 OPEN5,8,5,"@:#NB#+",P,R"
2110 INPUT#15,A$,B$,C$,D$
2120 IFVAL(A$)=0THEN2140
2130 PRINTA$,B$,C$,D$:END
2140 GET#5,DU$:IFSTTHEN2160
2150 PRINTDU$:GOTO2140
2160 CLOSE5:CLOSE15:PRINTCHR$(13):RETURN
2970 REM***
2980 REM SET POSITION
2990 REM***
3000 P=46:GOTO3020:REM SET STARTING POSITION
3010 P=P2
3020 PRINT"@":POKEBO,CL(P,1):POKEBA,CL(P,2):PRINTCHR$(CL(P,3))
3030 REM***
3040 REM ROOM FOR SOUND SUBROUTINES TO BE HEATD DURING LOSADING
3050 REM***
3060 GOSUB2000
3065 FORL=0TO24:POKEL1+L,0:NEXT
3070 REM***
3080 REM PRINT OBJECTS
3090 REM***
3100 FORI=1TO9:IFOB(I)=PTHENPRINTDE$(I)
3110 NEXTI
3170 REM***
3180 REM PERIL POINTERS
3190 REM***
3470 REM***
3480 REM DIRECTIONS
3490 REM***
3500 PRINT"@ YOU CAN GO ";
3510 IFPO(P,1)>0THENPRINT" NORTH";
3520 IFPO(P,2)>0THENPRINT" EAST";
3530 IFPO(P,3)>0THENPRINT" SOUTH";
3540 IFPO(P,4)>0THENPRINT" WEST";
3550 PRINT". "
3570 REM***

```


EDUCATIONAL/ADVENTURE

```

3580 REM INSTRUCTIONS
3590 REM***
3600 PRINTCHR$(13);I$="":DU=0
3610 PRINT"/\|_/_/_/ > ";
3620 PRINT"*";
3630 GETDU$:IFDU$="" THEN3630
3670 IFASC(DU$)>64ANDASC(DU$)<90THEN3710
3675 IFDU$=CHR$(32) THEN3710
3680 IFDU$=ANDDU$=CHR$(13) THEN3630
3685 IFDU$=CHR$(13) THENPRINT" ":GOTO3600
3690 IFDU$=ANDDU$=CHR$(20) THEN3630
3695 IFDU$=CHR$(20) THEN3750
3700 GOTO3630
3710 PRINTDU$;:DU=DU+1
3720 I$=I$+DU$
3730 GOTO3620
3750 I$=LEFT$(I$,DU-1)
3760 DU=DU-1
3770 PRINT"█ █"; (CRSR LEFT, SPACE, 2CRSR LEFT)
3780 GOTO3620
3800 PRINTCHR$(13)
3810 REM***
3820 REM PLACE FOR PERIL LOOPS AND TRAPS
3830 REM***
4470 REM***
4480 REM I$
4490 REM***
4500 IFI$="N"OR I$="NORTH" THENI$="N":GOTO6000
4510 IFI$="E"OR I$="EAST" THENI$="E":GOTO6000
4530 IFI$="S"OR I$="SOUTH" THENI$="S":GOTO6000
4540 IFI$="W"OR I$="WEST" THENI$="W":GOTO6000
4550 IFI$="L"OR I$="LOOK" THENP2=F:GOSUB35000:GOTO3010
4560 IFI$="I"OR I$="INVENTORY" THEN12000
4570 IFI$="H"OR I$="HELP" THEN15000
5960 GOTO7000
5970 REM***
5980 REM MOVEMENT SECTION
5990 REM***
6000 IFI$="N"ANDPO(P,1)>0 THENP2=PO(P,1):GOSUB35000:GOTO3010
6010 IFI$="E"ANDPO(P,2)>0 THENP2=PO(P,2):GOSUB35000:GOTO3010
6020 IFI$="S"ANDPO(P,3)>0 THENP2=PO(P,3):GOSUB35000:GOTO3010
6030 IFI$="W"ANDPO(P,4)>0 THENP2=PO(P,4):GOSUB35000:GOTO3010
6040 PRINT" YOU CAN'T GO THAT WAY !!!":GOSUB36000:GOTO3600
6970 REM***
6980 REM TWO WORDS
6990 REM***
7000 F=0:FORI=1TOLEN(I$)
7010 IFMID$(I$,I,1)=CHR$(32) THENF=I:I=LEN(I$)
7020 NEXTI
7030 IFF=0 THENPRINT" PLEASE USE TWO WORDS!":GOSUB36000:GOTO3600
7040 VE$=LEFT$(I$,F-1)
7050 NO$=RIGHT$(I$,LEN(I$)-F)
7060 REM PLACE TO EVALUATE VE$
7070 IF VE$="EXAMINE" THEN16000
7080 IF VE$="GET"ORVE$="TAKE"ORVE$="GRAB" THEN10000
8100 IFVE$="DROP"ORVE$="LEAVE" THEN11000
9960 PRINT" DON'T KNOW HOW TO "VE$:GOSUB36000:GOTO3600
9970 REM***
9980 REM GET
9990 REM***
10000 F=0:FORI=1TO9
10010 IFOB$(I)=NO$ THENF=I:I=9
10020 NEXTI
10060 IFQB(F)--1 THENPRINT" YOU'VE ALREADY GOT IT!":GOSUB36000:GOTO3600
10070 IFQB(F)<>P THENPRINT" IT ISN'T HERE !!!":GOSUB36000:GOTO3600
10080 PRINT"OKAY.":GOSUB35000:OB(F)--1
10100 GOTO3600
10970 REM***
10980 REM DROP
10990 REM***
11000 F=0:FORI=1TO9
11020 IFOB$(I)=NO$ THENF=I:I=9
11030 NEXTI
11060 IFQB(F)<>P THENPRINT" YOU HAVEN'T GOT IT!":GOSUB36000:GOTO3600
11070 PRINT"OKAY.":OB(F)=P:GOSUB35000
11100 GOTO3600
11970 REM***
11980 REM INVENTORY
11990 REM***
12000 PRINT" YOUR INVENTORY IT:":IV=0
12010 FORI=1TO9
12030 IFOB(I)--1 THENPRINTOB$(I):IV=IV+1:GOSUB35000
12040 NEXTI
12050 IFIV=0 THENPRINT" /OTHING 'M AFRAID":GOSUB36000
12060 GOTO3600
14970 REM***
14980 REM HELP
14990 REM***
15000 GOSUB35000
15500 PRINT" YOU'RE DOING FINE":GOTO3600 16000:
15970 REM***
15980 REM EXAMINE
15990 REM***
16000 IFNO$="" THENGOSUB36000:PRINT" EXAMINE WHAT ?":GOTO3600
16010 GOSUB35000
16500 PRINT" YOU SEE "NO$
25020 RETURN
34970 REM***

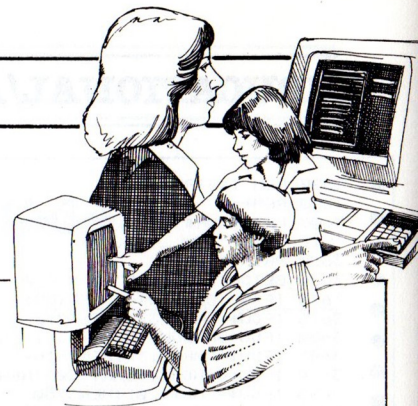
```

```

34980 REM GOOD SOUND
34990 REM***
35000 POKEV0,15:POKEA1,41:POKES1,255:POKEW1,17:POKEH1,56:POKEL1,9
35010 FORX=1TO300:NEXT
35020 FORL=0TO24:POKEL1+L,0:NEXT
35030 RETURN
35970 REM***
35980 REM BAD SOUND
35990 REM***
36000 POKEV0,15:POKEA1,17:POKEA2,17:POKES1,255:POKES2,255
36010 POKEW1,17:POKEW2,17:POKEW3,17
36020 POKEH1,17:POKEH2,179:POKEL1,195:POKEL2,6
36030 FORT=1TO200:NEXT
36040 FORL=0TO24:POKEL1+L,0:NEXT
36050 RETURN
59999 REM PO ARRAY DATA WITH NEW LOCATIONS AFTER MOVEMENT TO
DATA LOCATIONS
60001 DATA 0,2,11,0
60002 DATA 0,3,12,1
60003 DATA 0,4,13,2
60004 DATA 0,5,14,3
60005 DATA 0,6,15,4
60006 DATA 0,7,16,5
60007 DATA 0,8,17,6
60008 DATA 0,9,18,7
60009 DATA 0,10,19,8
60010 DATA 0,0,20,9
60011 DATA 1,12,21,0
60012 DATA 2,13,22,11
60013 DATA 3,14,23,12
60014 DATA 4,15,24,13
60015 DATA 5,16,25,14
60016 DATA 6,17,26,15
60017 DATA 7,18,27,16
60018 DATA 8,19,28,17
60019 DATA 9,20,29,18
60020 DATA 10,30,0,19
60021 DATA 11,22,31,0
60022 DATA 12,23,32,21
60023 DATA 13,24,33,22
60024 DATA 14,25,34,23
60025 DATA 15,26,35,24
60026 DATA 16,27,36,25
60027 DATA 17,28,37,26
60028 DATA 18,29,38,27
60029 DATA 19,30,39,28
60030 DATA 20,0,40,29
60031 DATA 21,32,41,0
60032 DATA 32,33,42,31
60033 DATA 23,34,43,32
60034 DATA 24,35,44,33
60035 DATA 25,36,45,34
60036 DATA 26,37,46,35
60037 DATA 27,38,47,36
60038 DATA 28,39,48,37
60039 DATA 29,40,49,38
60040 DATA 30,0,50,39
60041 DATA 31,42,51,0
60042 DATA 32,43,52,41
60043 DATA 33,44,53,42
60044 DATA 34,45,54,43
60045 DATA 35,46,55,44
60046 DATA 36,47,56,45
60047 DATA 37,48,57,46
60048 DATA 38,49,58,47
60049 DATA 39,50,59,48
60050 DATA 40,0,60,49
60051 DATA 41,52,61,0
60052 DATA 42,52,62,51
60053 DATA 43,54,63,52
60054 DATA 44,55,64,53
60055 DATA 45,56,65,54
60056 DATA 46,57,66,55
60057 DATA 47,58,67,56
60058 DATA 48,59,68,57
60059 DATA 49,60,69,58
60060 DATA 50,0,70,59
60061 DATA 51,62,71,0
60062 DATA 52,63,72,61
60063 DATA 53,64,73,62
60064 DATA 54,65,74,63
60065 DATA 55,66,75,64
60066 DATA 56,67,76,65
60067 DATA 57,68,77,66
60068 DATA 58,69,78,67
60069 DATA 59,70,79,68
60070 DATA 60,0,80,69
60071 DATA 61,72,81,0
60072 DATA 62,73,82,71
60073 DATA 63,74,83,72
60074 DATA 64,75,84,73
60075 DATA 65,76,85,74
60076 DATA 66,77,86,75
60077 DATA 67,78,87,76
60078 DATA 68,79,88,77
60079 DATA 69,80,89,78
60080 DATA 70,0,90,79
60081 DATA 71,82,91,0
60082 DATA 72,83,92,81
60083 DATA 73,84,93,82
60084 DATA 74,85,94,83
60085 DATA 75,86,95,84
60086 DATA 76,87,96,85
60087 DATA 77,88,97,86
60088 DATA 78,89,98,87
60089 DATA 79,90,99,88
60090 DATA 80,100,0,89
60091 DATA 81,92,0,0
60092 DATA 82,93,0,91
60093 DATA 83,94,0,92
60094 DATA 84,95,0,93
60095 DATA 85,96,0,94
60096 DATA 86,97,0,95
60097 DATA 87,98,0,96
60098 DATA 88,99,0,97
60099 DATA 89,100,0,98
60100 DATA 90,0,0,99
60199 REM CL ARRAY DATA SET TO
BACKGROUND AND BORDER COLOUR 12
60199 REM AND CURSOR COLOUR 144
60200 DATA COLOURS (BLACK)
60201 DATA 12,12,144
60202 DATA 12,12,144
60203 DATA 12,12,144
60204 DATA 12,12,144
60205 DATA 12,12,144
60206 DATA 12,12,144
60207 DATA 12,12,144
60208 DATA 12,12,144
60209 DATA 12,12,144
60210 DATA 12,12,144
60211 DATA 12,12,144
60212 DATA 12,12,144
60213 DATA 12,12,144
60214 DATA 12,12,144
60215 DATA 12,12,144
60216 DATA 12,12,144
60217 DATA 12,12,144
60218 DATA 12,12,144
60219 DATA 12,12,144
60220 DATA 12,12,144
60221 DATA 12,12,144
60222 DATA 12,12,144
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60225 DATA 12,12,144
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60253 DATA 12,12,144
60254 DATA 12,12,144

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- 60255 DATA 12,12,144
- 60256 DATA 12,12,144
- 60257 DATA 12,12,144
- 60258 DATA 14,14,144
- 60259 DATA 12,12,144
- 60260 DATA 12,12,144
- 60261 DATA 12,12,144
- 60262 DATA 12,12,144
- 60263 DATA 12,12,144
- 60264 DATA 12,12,144
- 60265 DATA 12,12,144
- 60266 DATA 12,12,144
- 60267 DATA 12,12,144
- 60268 DATA 12,12,144
- 60269 DATA 12,12,144
- 60270 DATA 12,12,144
- 60271 DATA 12,12,144
- 60272 DATA 12,12,144
- 60273 DATA 12,12,144
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- 60276 DATA 12,12,144
- 60277 DATA 12,12,144
- 60278 DATA 12,12,144
- 60279 DATA 12,12,144
- 60280 DATA 12,12,144
- 60281 DATA 12,12,144
- 60282 DATA 12,12,144
- 60283 DATA 12,12,144
- 60284 DATA 12,12,144
- 60285 DATA 12,12,144
- 60286 DATA 12,12,144
- 60287 DATA 12,12,144
- 60288 DATA 12,12,144
- 60289 DATA 12,12,144
- 60290 DATA 12,12,144
- 60291 DATA 12,12,144
- 60292 DATA 12,12,144
- 60293 DATA 12,12,144
- 60294 DATA 12,12,144
- 60295 DATA 12,12,144
- 60296 DATA 12,12,144

```

60297 DATA 12,12,144
60298 DATA 12,12,144
60299 DATA 12,12,144
60300 DATA 12,12,144
60398 REM OB ARRAYS WITH INITIAL LOCATION,ONE WORD DESCRIPTION AND LONGER
60399 REM DESCRIPTION INE ONE DATA LINE FOR EACH OBJECT
60400 DATA OBJECTS
60401 DATA 54,GOLD,GOLD IS IN THE CABIN OF SPACE PIRATE'S SHIP
60402 DATA 28,BLASTER,YOUR BLASTER WITH BULLETS IN IT
60403 DATA 43,DRIVE,GALLACTIC DRIVE SYSTEM IN CONTROL SYSTEMOF
60404 DATA 16,KEY,A KEY IS FLOATING IN SPACE
60405 DATA 0,SWORD,ON THE BOTTOM OF SPACE MINES IS THE GALATIC SWORD
60406 DATA 18,SHIELD,ELECTRICITY SHIELD FROM A LONG DEAD SHIPIS FLOATING HERE
60407 DATA 66,PASS,THE CHILDREN ARE PLAYING WITH A PASS
60408 DATA 0,KNIFE,HERE
60409 DATA 0,KNIFE,HERE
    
```

READY.

PROGRAMMING

Listing explanations

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

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

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

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

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

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

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



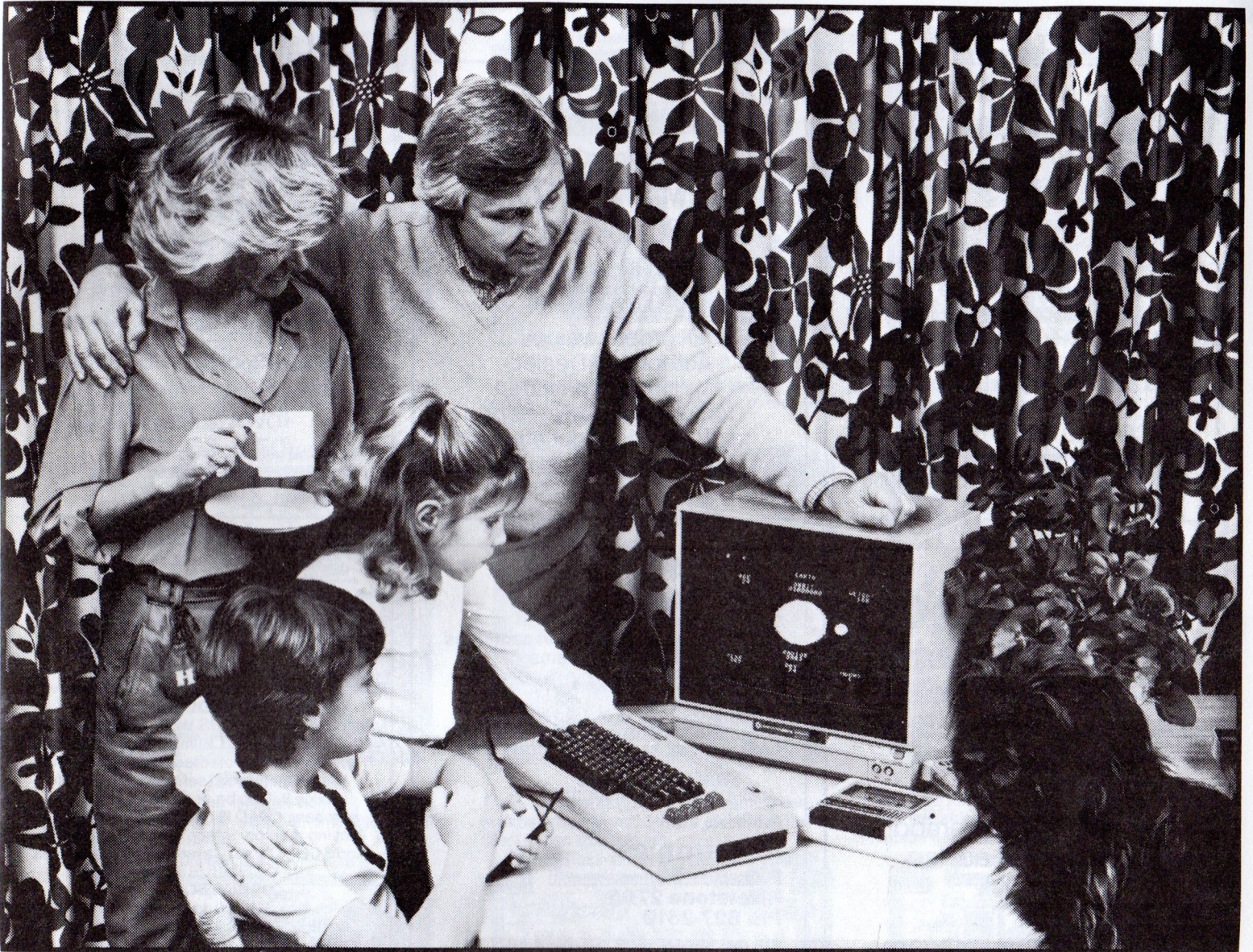
```

10 rem explanation of listing
12 rem
14 print"{CLR} - shift and clr/home"
16 print"{HOME} - clr/home"
18 print"{C/DN} - curser down"
20 print"{C/UP} - curser up"
22 print"{C/RT} - curser right"
24 print"{C/LF} - curser left"
26 print"{BLK} - ctrl and black"
28 print"{WHT} - ctrl and white"
30 print"{RED} - ctrl and red"
32 print"{CYAN} - ctrl and cyan"
34 print"{PURP} - ctrl and purple"
36 print"{GRN} - ctrl and green"
38 print"{BLUE} - ctrl and blue"
40 print"{YELO} - ctrl and yellow"
42 print"{ORNG} - commodore and blk"
    
```

```

44 print"{WHT} - commodore and white"
46 print"{RED} - commodore and red"
48 print"{CYAN} - commodore and cyan"
50 print"{PURP} - commodore and purple"
52 print"{GRN} - commodore and green"
54 print"{BLUE} - commodore and blue"
56 print"{YELO} - commodore and yellow"
58 print"{RVDF} - ctrl and rvs/off"
59 print"{RVON} - ctrl and rvs/on"
60 print"{F1} - function one"
61 print"{F2} - function two"
62 print"{F3} - function three"
63 print"{F4} - function four"
64 print"{F5} - function five"
65 print"{F6} - function six"
66 print"{F7} - function seven"
68 print"{F8} - function eight"
    
```


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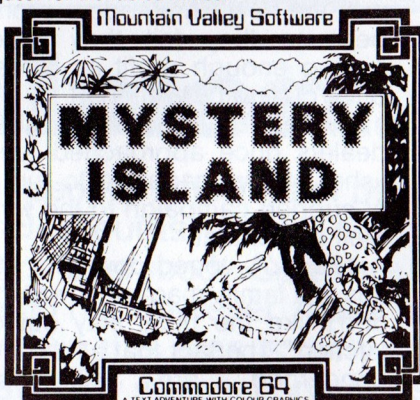
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View from the Hold



Far be it from me to put on side, but it was in this column Constant Readers first learned Commodore were going to use a 3.5 inch disk drive as their new standard. Now that Andrew Farrell has actually seen one at Commodore headquarters in Ryde, even he believes it is true, and is claiming that he wrote about it first.

Now I have another scoop.

My Japanese cousin, Shogun Rat, has been scuffling amongst the wastepaper baskets at Sony. They now have a disk drive that uses 5.25 inch disks and holds 220 Megabytes of information and works on the Commodore 64.

Before you all start writing abusive letters and telling me this is impossible, read some more to learn the full story.

Sony made squiddillions of dollars profit with their "Walkman" portable cassette. They decided in an inscrutable Oriental manner this was a good thing and they could make squiddillions more if they produced a "Walkman" disk player which would allow the young to stroll around with headphones clamped to their head and a record player bouncing off their jeans-clad rears.

To do this Sony had to resort to laser technology, and the resulting machine sells for about \$400 with disks at about \$15 each.

It did not escape the notice of Sony that this was also an ideal medium for storing computer information.

They are now offering the machine to assorted computer companies so that they can do a little badge engineering. But the basic concept of the machine is already fixed and works extremely well in prototype form.

It is true that you cannot erase the disk, but with 220 Megabytes to play with you would hardly ever need to.

Shogun Rat tells me he expects to see production models of the machine coming out of the Sony building by next May, and they will be in full spate by the end of next year.

My guess is that at first, most

manufacturers will try to keep these drives at artificially high prices, but that competition will drive them down to the level of the record player.

When that happens it will be farewell hard disks. The Winchester will be as relevant to modern technology as paper tape. More memory than you have ever dreamed of will be available to you for something like \$500.

Please remember that you read it here first. Otherwise Andrew Farrell will try to nick all the credit.

Wintering?

David (Old China Hand) Harvey, having left Commodore, found himself ensconced as the computer writer with the "Sydney Morning Herald". The first week the column appeared under his hand it obviously needed a lead article.

The story around the traps - an area in which we Rats are particularly expert - is that this article was originally based on an interview with a collection of Sydney Commodore dealers who were less than chuffed with the new Commodore promotion because they felt they were not getting enough profit as a result of price cutting by Waltons.

Interestingly, the same group of dealers once approached the publisher of this magazine to run a sort of support campaign to the winter of their discontent.

His reply, toned down (for after all this is a family magazine) was: "If you don't like the heat, stay out of the kitchen." The fact that all the dealers concerned are still selling Commodores says something.

Exactly what I am not sure.

Colour printers

This Rat has been thinking about colour printers and wondering, in a Rattish sort of way, what has happened to the colour printer which was so proudly demonstrated to the Sydney Commodore Users Club many moons ago.

It seems to be one of those many

products that Commodore nearly announce and nearly launch.

The sneaky thought is beginning to enter my head that this is a strategic marketing ploy of Commodore. They assemble a product that may or may not work in the marketplace, and then they fly a kite to see if anyone wants it.

If they get a forest of upthrust arms waving notes of the realm, specie and other legal tender they produce it.

If the reaction is a massive display of total indifference, they let it die.

I have my strong Ratty suspicions that the Plus 4 is another example of this marketing method. It would seem to even the meanest intelligence (mine) that the Plus 4 as it stands is not going to work in the commercial environment because it is locked into 40 columns, and for business use something like 80 columns is almost mandatory.

If this is indeed true, then the model that has been shown around and extensively reviewed in overseas magazines is not the machine we are all going to finally see.

The final machine will look much the same but will have 80 columns, thus causing distress and consternation to all those computer pundits who have gone to press with firm forecasts on flimsy knowledge.

Having thought about all of this carefully, I have come up with a splendid idea which I am sure that Commodore will leap at.

Instead of going through all that, appoint a Rat as your marketing research director.

I look forward to hearing from senior management with a substantial offer in the near and convenient future.

*** I have had a note from a bespurred haggis basher who is more than somewhat agitated about me saying that the Managing Director of Commodore played soccer for Airdrie United. He says that Airdrie was never united. I'll believe that. At least, while Nigel Shepherd was playing on the team. □

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