January/February 1985

Vol 2 No 1 $3*

A Gareth Powell Magazine

# The Australian COMMODORE REVIEW

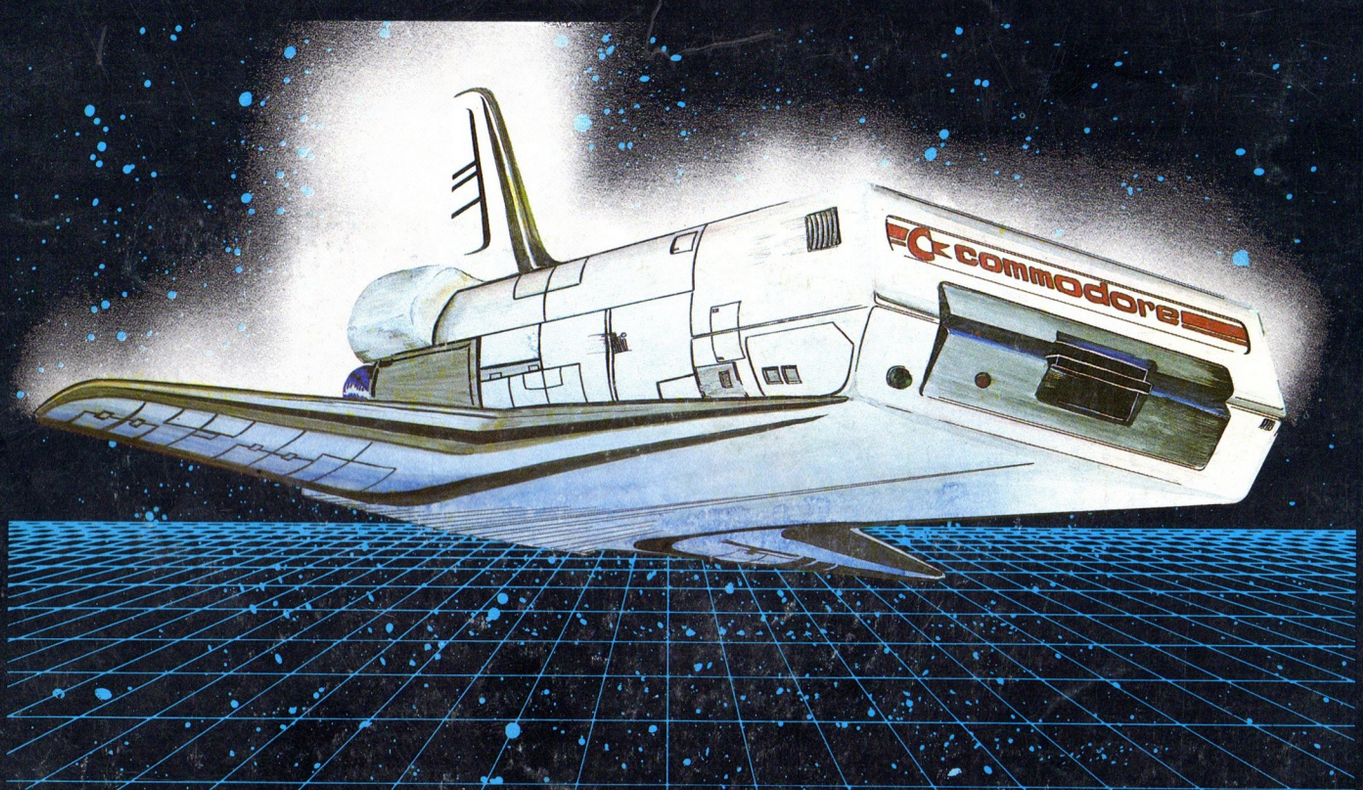
**1541 space shuttle — Turbo 64**

**What's new and exciting? • Help for beginners**

**Vic 20 hardware reviews**

**New Products • Pitstop II • Snowball**

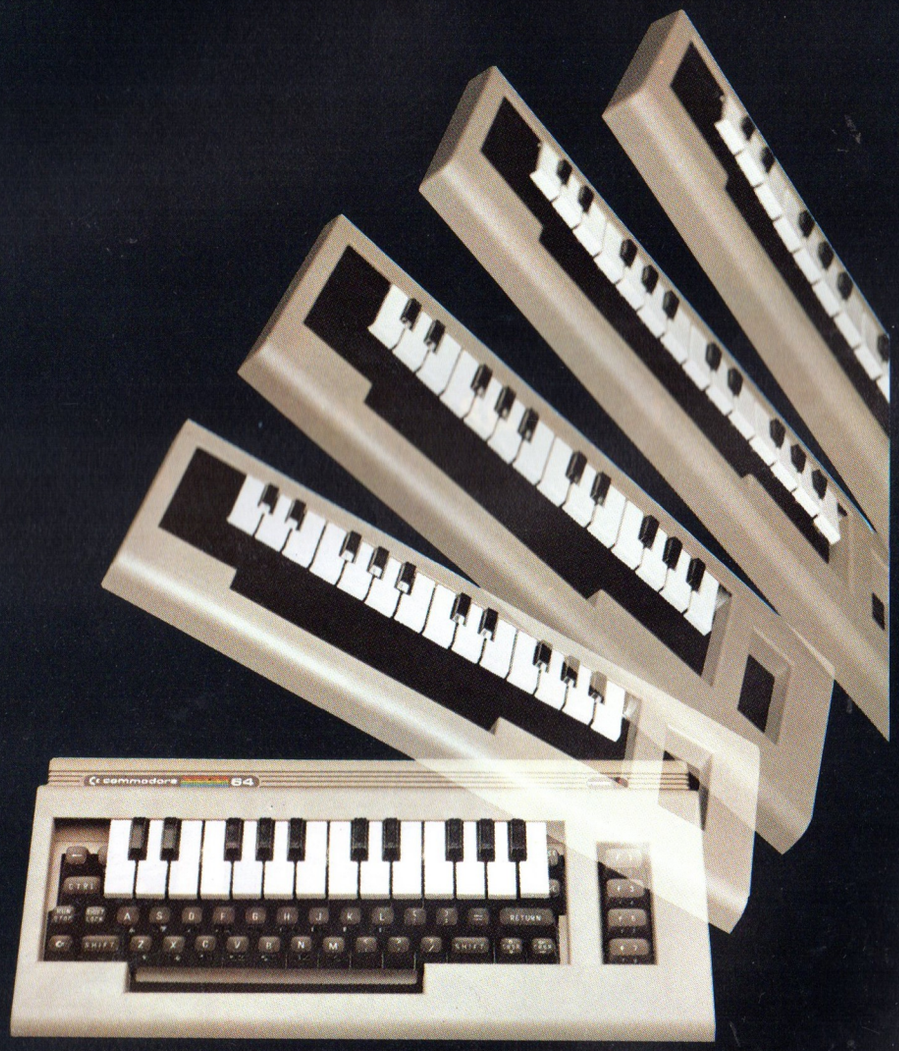
**Hot Stuff • Adventurers' Corner**




Registered by Australia Post Publication No NBG6656

*Recommended retail price

# The Commodore 64 Music Maker.



## The Keyboard For The Keyboard

Well, it's not exactly 'clip on Chopin', but the Commodore 64 Music Maker certainly adds a new dimension to home computers. It's the 'keyboard' for the 'keyboard'. Just clip on and play.
Music Maker comes with instructions and easy-step melody book to enable you to explore the wonderful world of music at your own pace and in your own time. In fact, it's so much fun that music lessons may never be the same again. Music Maker encourages musical adventure and experiment,and that, in our opinion, is a good place to start experiencing the magic of making your own music.
Talk to your nearest Commodore dealer today about the simple, easy way to turn your Commodore 64 computer into a Music Maker.

commodore COMPUTER

**Keeping up with you.**

Commodore Business Machines Pty. Ltd. 5 Orion Road, Lane Cove NSW 2066. BMS/CC373

# The Australian COMMODORE REVIEW


**The Australian Commodore Review**
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## Contents

# Editorial

Welcome back. As you may have noticed, we've had a bit of a long holiday since the December issue, but fear not, everything is back in full swing. This year certainly looks set to be full of surprises, with plenty happening in the area of new products and many advancements being made in software development.

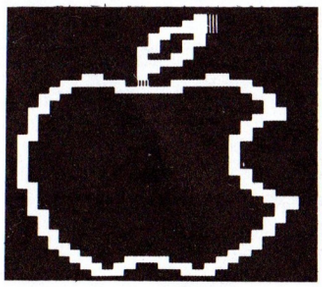
Although some feel that things will probably be very hectic as the men are sorted out from the boys, or the overnighters from the real businessmen, things are already starting to settle down. Some distributors have been disappointed by sales over the Christmas period, whilst others are still rejoicing over the rush of sales they received.

Whatever happens, it looks like Commodore has grown very firm roots. They promise to stay with the Commodore 64, with any further releases being either compatible or in a different market area. Promises of a new disk drive continue to flourish. We may even see the introduction of a three and a quarter inch drive before July. Other possibilities include the introduction of a Prestel system, which they have admittedly been tossing around for quite a while now.

Many small independent Commodore BBS are springing up. Next month I hope to check a few of them out and let you all know about their existence. Modems really are picking up, with another manufacturer expecting to release a $199 auto dial/auto answer unit in a couple of months. We shall be waiting in earnest for that one.

Back on the home front, Adam Rigby, a refugee from Wumpas, has been working overtime to answer the thousands (would you believe hundreds) of letters he has received pleading for solutions to a variety of adventure games. Poor lad, he doesn't have time to play the things any more, let alone answer more letters about them. Well, he promises to do his best, so please be patient. Isn't that what computing is all about? □





# RAM RUMBLINGS

## IEEE Interface

Leading Edge have released an all Australian product that is a further answer to Commodore's disk drive problems. It is a fully transparent IEEE interface that comes complete with cable and manual for around $18Ø. Initial tests have shown the unit to be most satisfactory, with no problems in running software that normally collides with this type of cartridge. Watch for a full review in coming issues.

## Software prices tumble

Software prices have continued to fall rapidly since the Christmas period following the release by several companies of a low priced range. Imagineering also moved very large quantities of top selling games by reducing their prices dramatically to as low as $1Ø and $15.

Other software houses reported a significant drop in expected sales, with the reasons being uncertain. Experts predict that 1985 may be a very unstable year for distributors and manufacturers in all areas of the computer industry.

## Commodore breaks another profit record

Commodore International Limited continues to boom, reporting another record quarter in sales, profit and earnings per share.

After a record 1983/84, in which the company broke the $1 billion mark in sales, Commodore reported profit for the September quarter at $A33.3 million – up from $A29.2 million.

World-wide sales hit $A294.2 million compared to $A252.2 million for the previous quarter.

In Australia, Mr Nigel Shepherd, Managing Director of Commodore Business Machines, said the first quarter had begun for the Australian operations with a 3Ø% rise in sales overall to $12 million resulting in the highest first quarter sales since the company began operations in Australia in 198Ø.

Commodore Australia is predicting second quarter sales of over $2Ø million dollars and is confident of achieving sales of $65 million for the current year compared to $43 million for 1983/84. □

# Letters

## Queries about the Commodore 16

Firstly may I say how glad I am to find such an informative magazine, each issue is full of worthwile reviews and exciting programs, not just for a current user, but for the intended buyer too. The Australian Commodore Review is truly a credit to you and your staff. Well done.

Now, getting down to business. In the November issue of the Australian Commodore Review (Vol 1, No 8), I noticed that you told of the C16 being priced at $199. I also found that many other different magazines also supplied this price for the machine. In the Sunday papers the day before, however, CBM itself advertised the C16 for $249. Due to Commodore's not so wonderful reputation for their correctness about a vast number of items for many of their machines, I was hoping you could tell me the correct price.

My second question is, will the 1541 disk drive work with the C16 or must a new drive be bought? If this is the case, could an interface be supplied so the 64's drive could be connected to the C16.

Finally, could you please confirm whether or not the C16 will be sold in a "Family Pack" (like the 64) consisting of a datasette, a joystick, and software, as in the paper, Commodore failed to mention this concept in their advertisement. If the C16 is not sold in a "Family Pack", will the datasette and joystick be more expensive than the 64 and Vic's due to the fact that new ones will have to be built, because of the new datasette and joystick parts in the C16.

**Possible C16 buyer.**

PS. Will you be having any reviews on the C16?

**Ed:** *1) The Commodore 16's recommended retail price is $249. However the price of $199 was given to us as it will be the price that most large outlets will discount the machine to.*
*2) The 1541 will work fine.*
*3) Yes, a family pack is now available consisting of a similar collection of items to the 64 version.*
*4) A full run down on the C16 will appear shortly once more third party software becomes available.*

## Trouble with Scuba Treasure

I am writing to ask for your help. We have a Commodore 64 with cassette. Since Xmas we have tried programming a game from your December review. The game is called "Scuba Treasure" by Mark Hancock, on page 20 to 21. We have typed this over two or three times and come up with nothing. We have listed the game and don't seem to find any errors.

Are there any printing errors? If so could you supply copy of game. Also you use two different types of brackets, normal and curly.. We don't have the second type on our keyboard so what would we use in place of. Hoping you can help with any information.

**Mrs D Cotter**

**Ed:** *We must apologise to you and all our readers, but part of the program "Scuba Treasure" went missing at the layout stage of producing the magazine. So lines 5200, 5210, 5260, 5270, 5280, 5290, 5310, 5320, 5340 and 5360 were cut short. See the following – the underlined are the missing parts.*

*Regarding the curly brackets, see our "Listing Explanations" (December issue page 36).*

## "All about getting input"

I have recently read an article in the September/October issue titled "All about getting input" by Ian Lucas, and found a small but troublesome error. It is to do with PEEKing to see if the Commodore, shift or control key has been pressed. The troublesome line is as such

10 IF PEEK(653)ANDn=n THEN....
Where:
Shift – n=1
Commodore – n=2
Control – n=4

This line looks perfectly alright to us but the computer takes the line as 10 IF PEEK(653)AND(n=n) THEN.... This statement would activate the THEN.... part if PEEK(653) 0 because n is always = n.

I have found that the correct syntax for this would be

10 IF (PEEK(653)ANDn)=n THEN....
Where:
Shift – n=1
Commodore – n=2
Control – n=3

This extra set of brackets would change the line so that it would do as it was originally designed.

**Andrew Way**

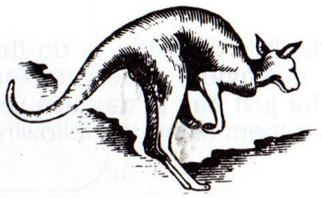
□

```
5198 data 0,0,0,128,224,248,252,254
5200 data 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
5210 data 0,32,0,170,160,0,170,142,168,63,254,12,255,194,3,195,0,15,3,234,168,0
5220 data 234,0,0,10,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
5250 data 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
5260 data 8,0,0,10,170,0,178,170,0,191,252,42,131,255,48,0,195,192,171,192,240
5270 data 171,0,42,160,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
5280 data 0,2,0,0,3,0,0,6,0,0,2,0,0,15,0,0,25,0,0,25,128,8,57,192,8,127,195,248
5290 data 255,255,240,255,254,96,255,255,192,255,255,128,0,0,0,0
5300 data 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
5310 data 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,048,0,0,48,0,0,252,3,63,255,3,254,255
5320 data 244,42,255,254,15,255,7,0,15,3,0,3
5330 data 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
5340 data 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,12,0,0,12,0,192,63,0,192,255,252,63
5350 data 254,255,63,254,168,224,255,240,192,240,0,0,192
5360 data 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0

ready.
```

# Making BASIC hop, skip and jump

by Andrew Farrell



## C64 & Vic 20

Many readers have written requesting that we include more straight out tips that have some practical value in their day to day use of their computers. In response we have sent out feelers to many distant parts of the universe in search of any tidbits that may be useful in filling the gap. If you have discovered something interesting, something annoying or something amazing, send it in.

## Screen tips – (64)

Erasing a line of text on the screen can be a messy job. Here is a simple way to erase one or several lines on the screen using the inbuilt editing routines.

```
POKE 781,LN : SYS59903
```

(LN must be between 0 and 24.). Try using a FOR.. NEXT loop to erase groups of lines.

It is also quite simple to copy a line of screen text (or graphics) to a new line. PL is the previous line and NL is the new line.

```
POKE 781,NL : SYS59888 : POKE
172,PEEK(60656+PL): POKE 780
,PEEK(216+PL) : SYS59848
```

To scroll the entire screen up one line use SYS 59629.

## Keyboard beep (Vic 20)

Audible feedback when you are typing is a great help. Here is a brief machine code program to make a short beep every time you hit a key. Once the program is POKEd into memory a SYS828 will enable it. Pressing RUNSTOP and RESTORE will disable it.

```
60000 FOR A=828 TO 861:READ
B:POKE A,B:NEXT
60010 DATA 169,15,141,14,144,120,
169,78,141,20
60020 DATA 3,169,4,141,21,3,88,96,1
65,197
60030 DATA 201,128,240,7,101,197,10
5,128,141,12
60040 DATA 144,76,191,234
```

## Debugging (all)

When trying to locate a program fault it is often useful to try to maintain your variables. Whenever you type RUN the computer also automatically performs a CLR command which erases all variables. In order to get around this, just type GOTO and the first line in your program.

Alternatively you could jump to any line that is at the start of a routine that is executable. In that way it is possible to test out various parts of a program, examine the variables and then continue from another point.

## Keyboard buffer (all)

Many BASIC programs use a simple GET to obtain single key INPUT. This is satisfactory in some cases, however occasionally a character which is still in the keyboard buffer is accepted before the user actually gets to type anything.

A better method is the following one-liner which traps single characters far more effectively:

```
10 POKE 198,0:WAIT 198,1:GET R$
```

## Program line indenting (all)

Many structured languages use very fussy formatting to ensure correct syntax. This is not normally possible with BASIC. It would be nice to indent FOR.. NEXT loops and IF.. THEN statements. There is a way.

Just type a shifted graphics character after the line number, enter the correct number of spaces, and then the BASIC text. When listed the graphics symbol will disappear and the text on that line will be correctly indented.

## Disable Runstop/Restore (Vic)

To stop accidental program stops and prying eyes:

```
POKE 808,PEEK(808)+2:POKE3715
0,PEEK(37150)AND127
```

To restore normal operation:

```
POKE 808,PEEK(808)-2:POKE37150
,PEEK(37150)OR127
```

## Key repeat (all)

Commodore have some very sophisticated editing features on their computers. However, not once in the User Guide do they mention that all the keys on the keyboard can be made to repeat! Well, here it is:

```
POKE 650,255
```

## Input question mark (all)

Input statements are easy to use, except when you don't want that question mark to appear. There is a way to get rid of it:

```
POKE 19,0
```

## Function keys (all)

Many beginners have trouble in understanding the use of the function keys. These keys are located on the far right hand side of the keyboard and do not appear to generate any particular results when pressed just after you turn on your computer.

Some programs use them for special functions, whilst others even give the function keys defined

commands. It is possible to do this with a machine code routine; however, for just day to day use you may test for them using the following program:

```
10 POKE 198,0:WAIT 198,1:GET R$
20 F=ASC(R$)
30 PRINT F: GOTO 10
```

Run the program and try pressing a few keys. You will notice that most keys produce a value which is actually the ASCII value for that character. The function keys also have corresponding values which may be tested for. These start at 133 and go to 140.

## Loading machine language (all)

Many programs require that a machine language subroutine be LOADed up as part of the main program. Alternatively it may be necesary to LOAD a character set or sprite set. Using the standard LOAD command from within your program will not work correctly. This is due to the fact that after the LOAD, your Commodore will RUN your program again from the first line. This is not exactly the same as a normal RUN, as no variables are disturbed.

```
10 LOAD"Machine Code",8, (no good – program will keep reloading!)
```

instead:

```
10 IF L=0 THEN L=1:LOAD"Machine Code",8,1
```

## Upper/lower case lock (all)

When a specific keyboard mode is required from within a program it is most annoying if the user can still toggle between graphics and lower case. To disable the key which allows that change (the Commodore key), use the following sequence:

```
10 PRINT CHR$(9)CHR$(mode)CHR$(8)
```

Mode will be either 14 to switch to lower case or 142 for graphics mode.

Be sure to POKE 19,1 afterward otherwise your screen will really get messed up. □



# Adventurer's Corner

**by Adam Rigby**

This month I am going to visit the world of ZORK with you. Included is a review for those who haven't played it, a partial map to get beginners off the ground and many tips and clues for those who are stuck on it. Next month lots of information on other adventure games on the market.

I must thank all those people who wrote to me in their desperation. This month I shall begin answering the multitude of questions sent in. (If your letter is not answered here, it will be in the mail.) The answer won't be easy to read – the whole sentence is reversed so that to read it you must start at the end – example:

rood neerg eht nepo

This reads as "open the green door".

## ZORK I
## The Great Underground Empire

This adventure is probably the world's most popular, well, at my house anyway. It is a text adventure with pages and pages of description, so it is not a game to be taken lightly – you need a total concentrated effort to play it effectively. I must stress one thing, it is not a beginners' adventure. At least be fairly familiar with adventure games before you start trying to conquer this one.

Booting the program is very easy and only takes about two minutes, although it is disk based so it is a great pity for all broke 64 owners (keep saving those pennies – it's worth the money for the drive just to play the Zork series).

The idea of the game is to collect 20 treasures and, more difficult, to survive the formidable world of Zork.

One of the things that puts Zork in a class of its own is the size of the vocabulary – it is immense. The following is an example of possible sentences in Zork:

TAKE ALL BUT THE BOOK AND THE DAGGER.

THROW THE NEWSPAPER, THE RED BOOK, AND THE MAGAZINE IN THE CHASM.

Another interesting feature is the ability to answer questions that you throw at it such as:

WHERE IS THE GOLD?

WHAT IS A GRUE?

Zork has the ability to assume things (well, more or less). If you are in a room with just a sword and you type "get" then Zork automatically assumes you mean the sword – pretty neat. Another way that Zork assumes things is when you try and do something with an object near you but you do not have it, such as:

COMPUTER WRITES: You see a leaflet.

YOU INPUT: read

COMPUTER WRITES: (leaflet) (taken)

"welcome to ZORK...

In the above example it has assumed two things, first that you mean the leaflet and the second that you take it. As you can see this feature saves a lot of unnecessary typing.

The SAVing game routine is good, as you can save the game in eight different places at once (per disk). I have included a section of the Zork world map to aid people who have just begun their journey into the unknown.

Zork fast becomes an obsession to many people, including myself. It is definitely a must for the adventurer's software library.

## Letters

The majority of my letters are from people stuck in the Zork series, which could indicate its difficulty and popularity.

Dear Mr Rigby,

I am writing to you to see if you can help us with our journey through ZORK I.

1. When you get the skeleton key how do you open the grate?
2. How do you get the diamond that is in the mine?
3. How do you get west of the Timber Room with some light?
4. Where is the cyclops and how do

you get to it?
5. Does the chirping of the songbird mean anything of importance?

I hope you can answer these questions for us as we have been playing ZORK for 12 months now, and for about the last three have been stuck in the Timber Room, and we are beginning to get a bit hungry.

L. Monaghan

*Adam: (read clues backward)*
*1. edis rehto eht morf etarg eht nepo tsum uoy*
*2. I'll never know how you found out about it if you haven't seen it – anyway here's the clue: moor rebmit fo tsew*
*3. moor rebmit eht fo tsew moor eht evoba yltcerid si moor teksab eht*

*You may need more help than this so read on if you are still stuck: moor sag eht rof tuo hctaw tub, moor rebmit eht ot uoy teg ot eno dna teksab eht ni tep ot eno thgil fo secruos owt deen ouy*
*4. I dont want to give this one away so I shall give you just a small clue: dnuora klaw dna noteleks morf WS og, ezam eht ni*
*5. This one kept me going all the way through ZORK 1: gge eht enimaxe, sey*

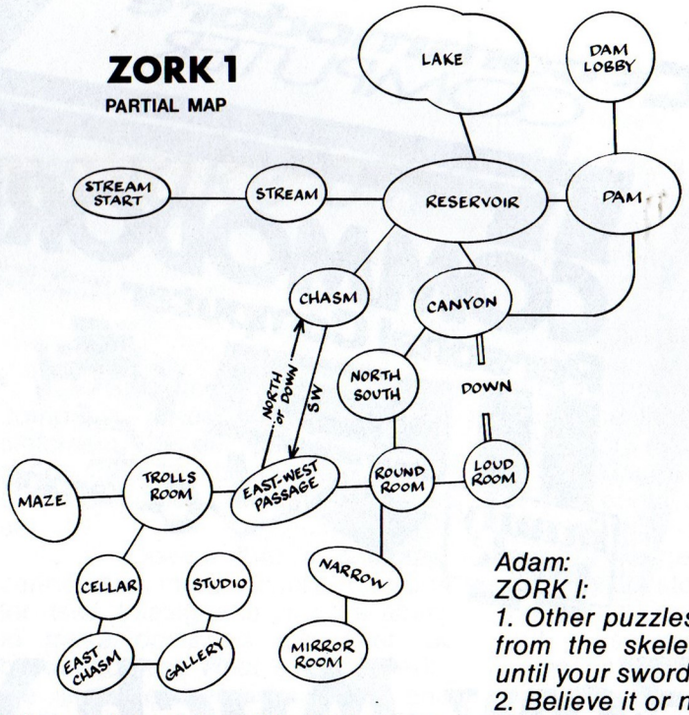
Dear Mr Rigby,

Can you please help me in the following problems?
ZORK I:
1. How do I get over the rainbow?
2. How do I get into Hades?
3. How do I get back to the house from underground?
ZORK II:
1. What's the explosive (brick & string) for?
2. How do I get past the lizard?
3. How do I get in to inflate the balloon?
4. What do I do in the oddly angled room?

I hope you can help me with these problems as I am rapidly losing my sanity.

C. Anderson

*Adam:*
*ZORK I:*
*1. wobniar eht yfidilos ot desu si serusaert eht fo eno*
*2. The items that you will need are the following: matches, candles, black book, bell – if you need more help read next month's issue (you should have worked it out by then).*
*3. There are many ways to get back up, the easiest being to find a suitable place and pray.*
*ZORK II:*
*1. You will need them in the volcano.*
*2. Answer is in the well.*
*3. Go to the oddly angled room and there you shall see the answer.*
*4. Go for the HOMER!!!*




Dear Sir,

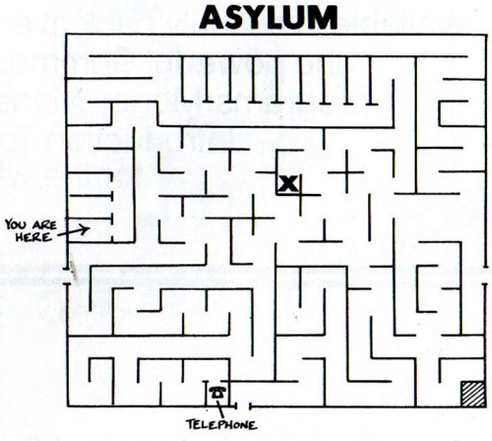
Help me with the following problems for I am STUCK!
ZORK I:
1. Is there anything else apart from the skeleton in the maze?
2. The inflatable boat's use seems quite limited to just downstream of the dam, where else can I use it?
3. I can kill the thief (strangely only in the coal mine). Is it worth while?
ZORK II:
1. Is it possible to follow the princess any further than the Gazebo?
2. I am stumped at the Riddle Room not so much by the riddle as by how to answer Help is needed.
3. Is the Gazebo an entrance to another room?
4. Is the menhir blocking the south-west passage capable of being moved?
ZORK III:
1. Is it possible to get off the aqueduct without being killed?
2. Cloaked person. He is killable and I can keep his hood and cloak and let him live or not. Suggestions?

W. Falconer.

*Adam:*
*ZORK I:*
*1. Other puzzles are to be found SW from the skeleton. Wander around until your sword glows; then SE*
*2. Believe it or not, the boat is one of the most useful items in the adventure even without going within 1Ø feet of water: meht laets ton lliw feiht eht – taob eht ni sgniht yrrac*
*3. The thief does have a use to you, so try not to kill him until he has completed this: uoy rof gge eht pu snepo eh*
*ZORK II:*
*1. reh htiw obezag eht ta tiaw dna slraep eht reh evig tsuj, on*
*2. Answer by typing 'ANSWER "...."'.*
*3. No.*
*4. Yes: dnaw eht esu*
*ZORK III:*
*1. Remember that the earthquake causes many changes to the game.*
*2. A word of help for Zork III: elpoep ot ecin eb* □

## Asylum map

As we promised in our Sneak Preview of "Asylum" in the December issue, here is a map to help you to play the game and, we hope, successfully escape. □



# 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.

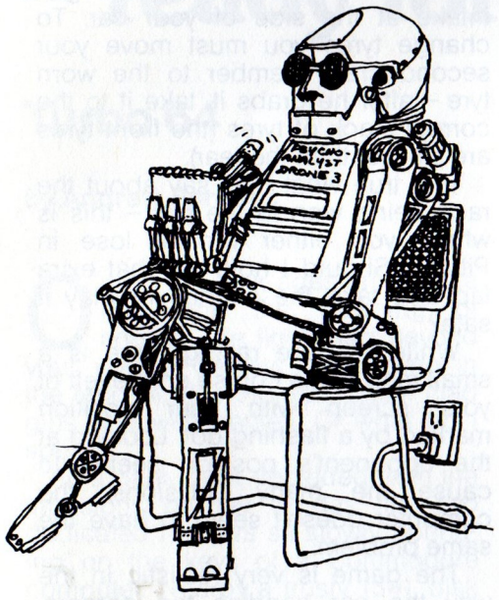
**C= commodore COMPUTER**

**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

BMSicc 269

# *Will computers take over the world?*



**by Andrew Farrell**

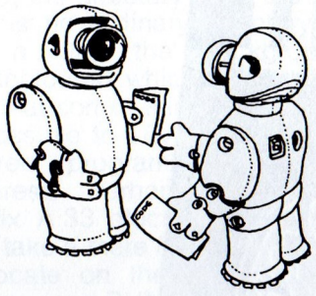
If we are to believe the propaganda of some distinguished people, we had all better prepare for a massive invasion of androids, humanoids and other lesser beings. To quote one professor, "They will keep us as pets... sometimes condescending to talk to us". Perhaps it takes a vivid imagination to envisage such an age. But could robots ever reach such a level of intelligence?

What is intelligence? According to the Oxford dictionary it is the faculty of knowing or reasoning and understanding. We know a computer can store information, and based on what it "knows" make decisions. But really, can it even do that, make a decision? A decision involves coming to a conclusion, to settle a question. A yes or no answer may suffice, which we know is easy for a computer to handle. A set of criteria may be fed into a computer and a resulting analysis obtained through a series of decisions.

However, all these decisions were already made for the computer by the program which was written by, you guessed it, a human. A typical example is the IF.. THEN statement in a BASIC program. Although the computer actually executes the statement, the decision as to what action should be taken in a given set of circumstances has already been set.

So it appears that a computer cannot even make a simple decision for itself. Intelligence and the ability to make decisions are, after all, human qualities. What is accomplexity, the line between simulation and reality becomes less obvious. The observer is perplexed by the speed and accuracy hat about intelligent peripherals?

Any device that connects to your computer is called a peripheral. Some of these are called smart peripherals or intelligent peripherals. A typical example is your disk drive, another would be a printer. A dumb peripheral or unintelligent peripheral would be your joystick or datasette.



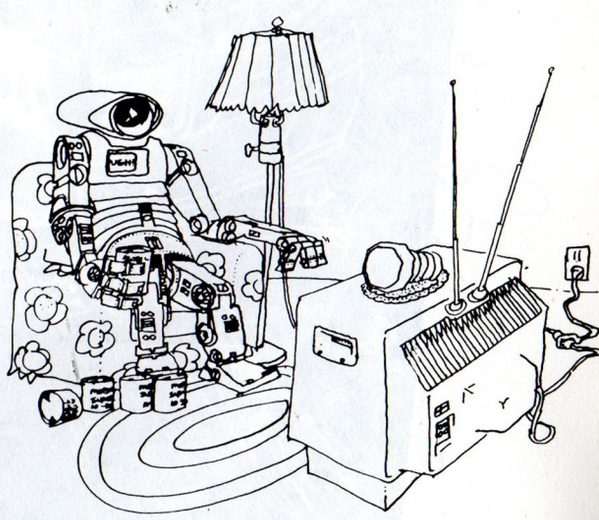
The difference? Simply put, any peripheral with its own microprocessor is a smart peripheral. Any device with a microprocessor is probably running a program of some description. A printer has a program built in which controls how it moves the print head, where to put dots so that they make characters and various other remedial tasks. A disk drive has a much larger program known as the DOS or Disk Operating System. This program decodes all incoming commands and sets the right process into action.

Once again control of these electronic marvels is provided by a computer program, which we have already shown to be unintelligent. In this case the term "intelligence" is really only referring to what appears to be taking place, a simulation.

That conclusion does not rule out the possibility of someone developing a robot-like device that has enough memory to store much information. Enough to enable the "robot" to carry out a seemingly intelligent conversation. Robots already exist that can speak and understand speech. Others have the ability to undertake small tasks, making them of more practical value.

Keeping in mind our original scenario, things have got a long way to go before we are reduced to living as pets. Various major obstacles will forever stop the existence of such a computer. For a start, who will write the program that is so brilliant that other mere humans must bow in reverence?

If all else fails we can always reach for the power switch. □



# Pitstop II

**by Adam Rigby**

I received Pitstop II with open arms, for I was an addict of the arcade game Pole Position (the 64 version was a letdown). If you were also let down by the poor reproduction of this great one-player game, then get ready for a lift with Pitstop II.

Pitstop II came in the usual Epyx size box with a good looking neon-type visual on the front. I grabbed for the disk (I believe it's only available on disk), threw it in the drive and loaded the first thing on the disk (luckily it worked without even having a peek at the manual). The title page is visually pleasing but nothing special.

Now that I had a moment to read the instructions, I realised that it was a one or two player game, with six different race tracks to choose from, all based on existing Grand Prix and Formula One circuits.

Next I was faced with the problem of choosing the track, number of laps, difficulty level and the number of players. Following this you are asked to type in your name, then the race screen comes into view. Stunning split screen hi-res graphics, the sort of quality you would expect.

Gentlemen, start your engines! I accelerated and the computer's car slowly fell behind as we passed the pits. Just as I hit top speed and the wind whistled through my clothing I hit a corner at 251 miles per hour (so, it's American) ARRGGG... what? I didn't blow up as I crunched into the kerb – what does this white mark mean on my tyre? Oh well, back to the manual.

Then it all became clear to me – it seems you don't blow up, your tyres just wear down from hitting things until they blow and you're out of the race. Once they start getting worn the only way to fix them is in the pits.

One of the most creative ideas in this game is the action that goes on in the pitstop. You actually control your pitstop. Once in the pits you are faced with a graphic representation of your car and your two man pit-crew (one for fuel and the other for tyres).

To refuel, you move the crew member with the hose to the gas intake at the side of your car. To change tyres you must move your second crew member to the worn tyre – after he grabs it, take it to the correct stack of tyres (the front tyres are smaller than the rear).

It is true what they say about the race being won in the pits – this is where you either win or lose in Pitstop. Should I hold out that extra lap and take the chance or play it safe?

While you are racing there is a small map of the course on the left of your screen with your position marked by a flashing dot. Looking at the opponent's position seems to cause me many collisions; the computer doesn't seem to have the same problem.

The game is very realistic in the way the car handles the corners. Stick to the old rule – brake before the corner and accelerate out of it.

A word of warning – the computer is extremely fast in the pits but it won't take a chance on not going in when it needs a stop; this is where you can beat it.

At the end of the race you are ranked from one to ten on your time. It is displayed on a table showing the other drivers' names such as Tina Turbo, Raymond Rollbar and Penelope Pitstop.

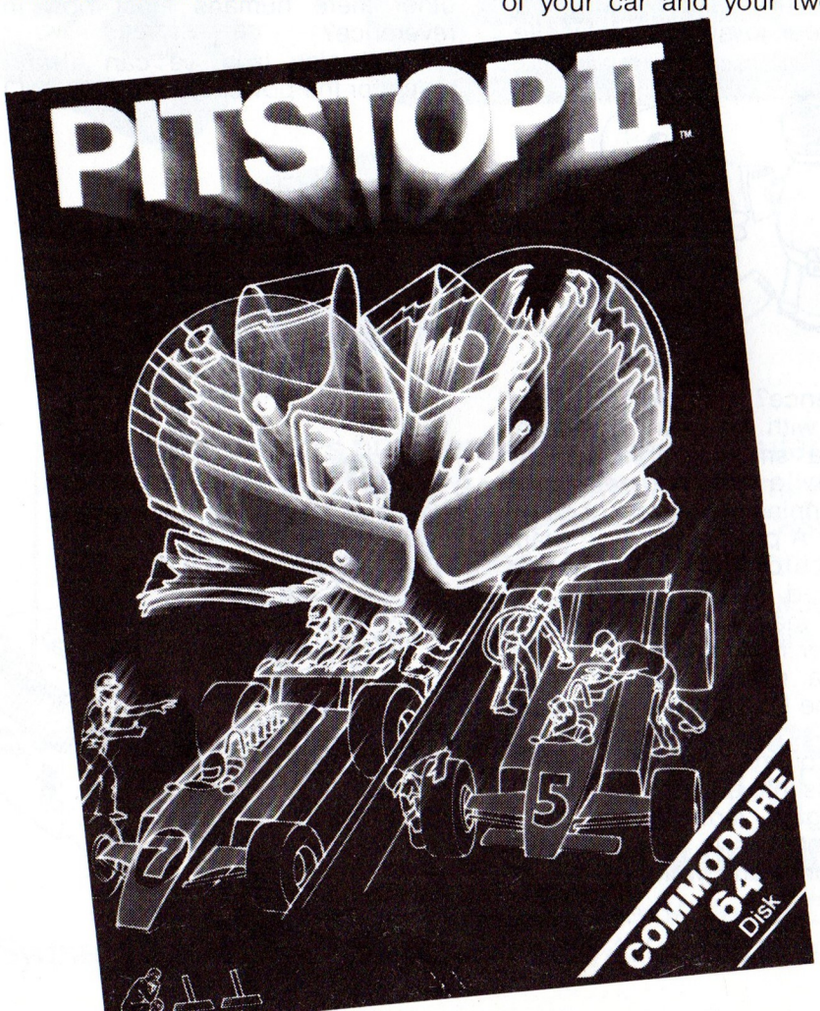
There is an option called the Grand Circuit where you play all six tracks in succession, building up points as you go. At the end the driver with the highest score is the World Driving Champion. This one will definitely keep you up all night trying to become the world's best.

The difficulty levels are Rookie, Semi-pro and Pro. Rookie, of course, is the easiest, the difference being that you have to take the corners at much lower speeds at higher levels. After playing Rookie the other levels seemed as if someone had spilt oil on the track.

Epyx has certainly come up with another winner.

| | |
|---|---|
| **Graphics** | ***** |
| **Sound** | **** |
| **Originality** | ***** |
| **Lasting appeal** | **** |
| **Value for money** | ***** |

□



# 1541 space shuttle – ready for lift off

## Turbo 64

**by Andrew Farrell**

Out of the dark ages emerges a new era, the dawning of another age, light years beyond your wildest dreams. Originating in the land of sea and sun, bikini clad girls and wild parties. Of what do I speak?

In a dark room, secluded from the intrusions of day to day life, two dedicated hackers sit slowly pounding on the keys of a Commodore computer. Nearby a trusty 1541 disk drive lies naked, basking in a shower of binary radiation. This, folks, is where it all happens. Well, most of it. From between these four walls emerges Turbo 64.

Faster than a speeding turbo cassette player, more powerful than a 1541 Express, able to load long programs in a single second. Enough of this, now that I've got your attention, there's no need for further introductions.

Inside the colourful packaging I found a collection of equally colourful labels, the editor disk and a well written instruction manual. All was very professionally put together. To LOAD the editor program simply type LOAD'E',8,1. The screen will blank for a few moments before a full on hi-res picture appears. Now wait a minute, it only took three seconds to LOAD 14 kilobytes of code.

That was certainly fast – imagine if all your disks LOADed like that. From the editor it is possible to make this dream come true. Turbo 64 will format a disk for you in a new format that is unique to this software. The difference in this new format is that access time is greatly reduced and formatting takes a little under ten seconds.

Having prepared a new disk, you may then copy all or specific files off one of your own disks onto the new one. This process is also very easy, with selection of the files to be copied being carried out in a very understandable manner. The copy function will only allow one buffer full of information to be copied at a time. This buffer is however large enough to copy most average sized disks. A few may require two passes.

A few other utilities are provided from the Editing software, including scratch a file, rename a file and modify menu options. The last one is very useful in creating custom directories on your own Turbo disks.

Once you have a test disk ready, remove the Editor and you're ready to go. Insert your own Turbo disk, type LOAD'T',8,1 and, faster than you could say "Gareth Powell is an Apple lover", the directory is on the screen. This is no ordinary directory either. For a start the background is multicoloured, which is great if you're into that sort of thing. What's more it is possible to LOAD and RUN your desired program with a single keypress. Perhaps we will play Matrix. A 33 block program that will now take a mere four to five seconds to locate on the disk, LOAD into memory and RUN.

This really is going to be a good week, I can feel it. What will we try next? How about Easy Script. Would you believe ten seconds to LOAD and RUN? No? Well, you'd better go out and buy a copy of Turbo 64 to see for yourself.

### Colour options

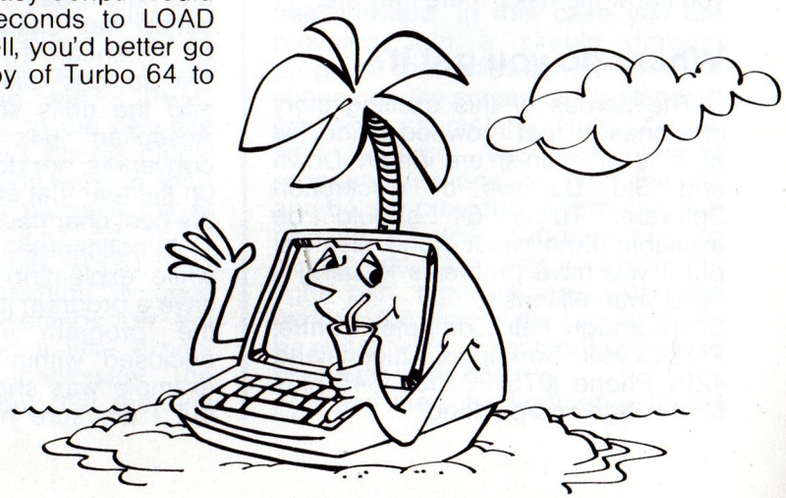
As I mentioned earlier, it is possible to play around with the directory which appears on the screen when you BOOT a disk. The colour format and layout may be modified to a certain extent, thus making it possible to have green directories for all your game disks, and red directories for all your pirated disks and blue directories for all your utility disks and so on.

The disk labels are also colour coded, taking the whole concept to the limit. This really is disastrous. We may actually be able to arrange our disks at the office in a logical, orderly sequence. I'll never be able to find anything.

Well, so far this review has sounded as though I'm talking about the product of the year. But just how useful **is** Turbo 64? Well, for most applications it is simply the be all and end all. However, there are a few limitations, which I hope we may see removed in coming versions.

Turbo 64 does not like multi-load programs. Once a program is LOADed it will attempt to RUN it at the program's start address. This is fine unless you are LOADing character sets or some other form of data which is not a program. To get around this you must either LOAD each individual program manually from the menu or set up your software so that it is only a single LOAD. It is possible to LOAD character data by setting the start address to a jump vector which will rerun the main menu. If that's confusing, don't worry, you will probably never have to do it.

I'll explain anyway. All programs start and end somewhere in memory.



# Turbo 64

Basic programs always start at $ØØ8Ø Ø. In this case Turbo 64 will set up the start address for you automatically. Other programs written in machine code may start at various different places. Since the start address is stored on disk Turbo 64 can ask you if the start address is the right address to jump to in order to run the program, and thereby you still don't have to know much about programming to work things out. Most machine code programs do run from their start address, however a few don't. In that case you must know the program's start address.

The final example which I mentioned previously was a character set or sprite set or even a hi-res picture. None of these are programs and they all sit in different places. The start address is not really significant. Turbo 64 does not know this. As a result you just tell it that the start address is actually a special location just below the start of Basic. This will cause the menu program to appear back on the screen as soon as LOADing is complete.

So if you made any sense out of all that, you will have gathered that the limitations can all be overcome. It would be a little nicer if you could get around them more easily, but not to worry.

There is one other small point worth keeping in mind. This program works by reducing the amount of error checking during disk access and by speeding up the mechanical activity of your disk drive. Units which are out of alignment, and disks that are cheap and nasty, may cause problems. We didn't have any specific problems, but just so that you know the risks, there they are.

## Where do you get it?

The heroes of this exciting story (the ones in that crowded office full of girls in bikinis) are Ralph Down and Stu Burrows of Cockroach Software. Turbo 64 should be available from most good dealers, but if you have problems locating it send your millions to...
Scarborough Fair Computer Centre, PO Box 999, Southport, Queensland 4215. Phone: (Ø75) 32 5133. $45 plus $2 postage and packing. □



# Video computer training

**by Bob Drew**

Understanding and getting the most from your new computer is a rewarding and at the same time frustrating experience. It is often the case (sadly) that the store that supplied your new toy knows nothing other than the cash register price and the direction of the exit.

You can of course read the instruction manual (the Commodore manual is one of the better examples) or you can now take home a video tape entitled "Introduction to the Commodore 64" from AAV-Australia.

It seems a natural progression when learning about computers that training facilities should be available using video training tapes.

I had mixed feelings after viewing this particular offering. I felt it was very helpful in most respects, but somehow I had the feeling that the presenter was trying to get through too much and yet didn't really explain enough of some of the important points.

## Presentation

The presentation was smooth and competent without being a "stage act", and it was obvious that the presenter was knowledgeable and an expert in his field.

The opening dealt with how to set the unit up with the various periphals, and herein was the first problem. The set-up was based naturally enough on American equipment, and there are obvious differences between it and the units sold in this country. Australian 64s don't have RF converters, nor do they have a switch on the rear that enables you to select the best channel.

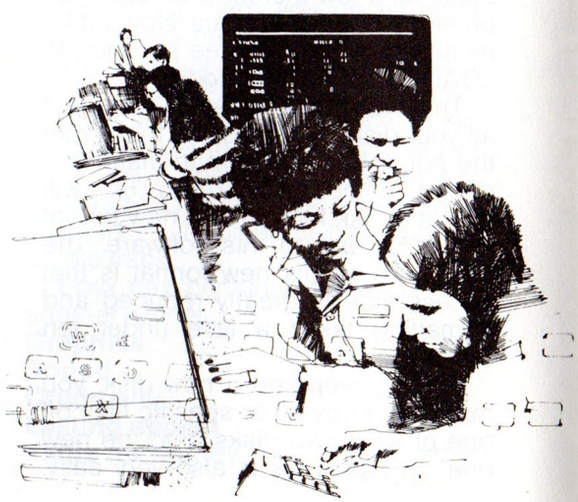
A noticeable omission was that while explaining how to load and save a program it was not stated that the program name should be enclosed within " ". Admitted the example was shown on the screen, but I am sure not everyone would have necessarily picked that fact up.

I felt that what was shown was very helpful in the initial set up procedure, but after that there was really nothing that you would want to refer back to, so the tape after perhaps two showings was redundant.

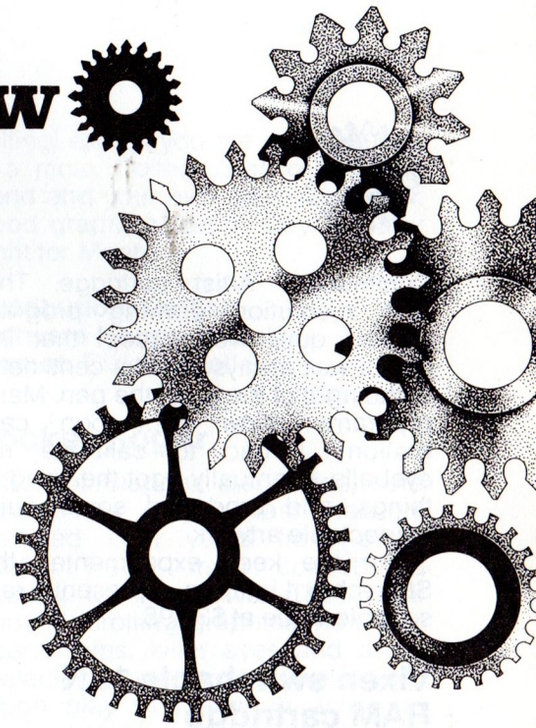
Where I think this particular tape would be invaluable is as an in-store demonstration for those stores that don't have knowledgeable staff. What it did do was show how easy the Commodore is to set up and operate. And it gave enough information on software to illustrate how valuable a 64 could be for the average user.

This particular video was of debatable value as a total training tape, but the idea was there, and it could be that the other tapes in the series are more definitive on a particular aspect of the Commodore 64.

The series is worth looking at further if you find a written manual too hard to comprehend. The training tape does not replace the manual but it is complementary. Our review copy came from Soundplus, but the tape will be available through Commodore and their dealers in the near future. It would cost about $6Øto buy but you may be able to hire it for a few days. □



# Vic 20 Hardware Review



**Under review: A range of Stonechip Electronics Vic 2Ø Peripherals**
**Available from: Dolphin Computers, 99 Reserve Rd, Artarmon**

**by Phil Campbell**

Boy, am I in trouble! These Vic 2Ø bits and pieces have been sitting around waiting to be reviewed for about six months. My humble apologies to Jon Pratten at Dolphin Computers. He probably thinks I have skipped town with all his gear.

Dolphin have been importing a number of very high quality Commodore accessories for quite some time, including the Vic 2Ø speech synthesizer reviewed in issue 5. Most (if not all) of these bits and pieces are imported from Stonechip Electronics in England, and all are quite reasonably priced. The 4 slot motherboard, cassette interface, light-pen, programmers' aid cartridge and switchable RAM cartridge are the subjects of this review.

## Vixen Motherboard

The Vixen Motherboard is a solidly constructed unit, with the board itself enclosed in a white plastic case which fits snugly into the Vic 2Ø cartridge port. Space Invaders, Pacman and Donkey Kong are then pushed into the three sockets on top of the unit, and a fourth cartridge can be placed in the remaining socket at the rear of the board.

A set of micro-switches allows selection of the required slot, and an IC socket allows the insertion of an optional Programmers' Aid ROM. Only the brave or foolish (or the confident and capable) attempt to insert their own ROM – just ask the man in the shop to do it for you. This socket can also be used by the super technical types who program their own EPROMs, and is wired to accept the standard 2732 device.

Overall, the motherboard is quite an improvement on the "bare bones" arrangement offered by other manufacturers, and at $65 can be considered competitively priced.

## Stonechip Programmers' Aid Cartridge

This cartridge offers a collection of useful BASIC extension and utility commands such as:

| | |
|---|---|
| AUT | : Auto line numbering |
| RENUM | : Nice tidy line renumbering |
| SINGLE | : Steps through your program to aid troubleshooting |
| OLD | : Retrieves your accidentally NEWed programs |
| SOUND | : Takes the POKEing out of sound generation |

In all there are 19 such commands, which all help make life a little less miserable for the struggling programmer. At present, this cartridge is priced at $47, which is a fair bit more than the Commodore version, although some of the additional sound and format commands are equivalent to those of Commodore's Super Expander Cartridge.

## Stonechip Cassette Interface

This little white box is designed to plug into the cassette port on the rear of your Vic or 64, allowing programs to be loaded and saved on an ordinary cassette player. Leads are provided for the "MIC", "REM" and "EAR" sockets on the cassette player, with standard phono plugs. Unfortunately the leads were so short that I had to sit the cassette player on my keyboard... well, not quite, but a few extra inches would have been nice. The interface is quite sensitive to level settings on the cassette player, and a little experimentation may be necessary. The instructions point out that the unit may refuse to work with some cassette machines. If this happens, Dolphin will cheerfully refund your $29.95.

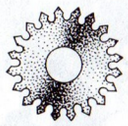
Frankly, I would only recommend the interface to those who really cannot scrape up the extra $2Ø for the Commodore Datasette, which, although rather expensive, is an extremely reliable device.

## Stonechip Lightpen

The Stonechip Lightpen is quite a simple little gadget, consisting of a photodiode built into the end of a Sheaffer pen casing. A spiral cable runs from the pen to a standard 9-pin joystick plug, allowing an extension of around 1.5 metres. Little can really be said about lightpens, as there is not much to criticize. At least this one should not fall to bits too soon.

Most lightpens are packaged with free software; in this case you are provided with a simple drawing program that allows you to draw shapes on the screen using standard graphics characters. Note, this is NOT a high resolution drawing program. Versions for both the Vic and 64 are provided. The main value of the sketch program is to demonstrate the way in which the light pen registers are read: the intrinsic fun level of the program may be suitably high to entertain an easily pleased 5 year old.

I also tried the lightpen with the



Commodore Artist cartridge. This high resolution drawing program worked quite well, except that the cursor was always about a centimetre to the right of the tip of the pen. Many programs allow light pen calibration... I had to calibrate my eyeballs. Eventually I got the hang of things, and produced some quite respectable artwork.

For the keen experimenter, the Stonechip Lightpen represents reasonable value at $39.95.

## Vixen switchable 16K RAM cartridge

The Vixen switchable RAM cartridge offers four modes of operation, which are selected by a pair of microswitches on top of the casing. The cartridge provides either 11K or 16K of RAM. In the 11K mode, 3K fills the gap between locations 1Ø24 and 4Ø95, while the remaining 8K can be located either at 8192 (block 1) or 24576 (block 3). If block 3 is selected then only the 3K section is recognised by the Vic. Blocks 1 and 2 are both filled in 16K mode. Hence, on power-up, your Vic will have either 19967, 11775, 6655 or 3583 bytes free. Confused? So was I.

What this really means is that you can use the Vixen expansion cartridge in just about any situation. If you are using a motherboard and a machine code monitor or Super expander cartridge, clashing sections of memory can simply be switched out of the way. Very neat, particularly for the serious programmer. However, at only $79 the Vixen cartridge is not just limited to the serious programmer ... it's just the shot for those games you've been looking at in the shops that require 8K or 16K expansion.

## Conclusion

In general, the range of Stonechip products are well made, useful, and competitvely priced. The products are availabe from most stores, but if you have any problems you can contact Dolphin Computer by phoning (Ø2) 438 4933. □



# New Products

## Spatial Billiards

Spatial Billiards is just like playing ordinary billiards but for one exception, it is played in three dimensions and not two.

Therefore the task of ascertaining the correct angle for your shots is much harder. The relative positions of the balls in the 3D cube can only be determined by their shadows shown on the base of the cube.

A novel game that stretches your patience and tactical abilities to the absolute limit. $19.95.

## Dancing Monster

A wicked wizard has cast an evil spell on the beautiful Princess which has changed her into a Dancing Monster, destined forever to move to his woeful music.

To release her from this dreadful fate requires instant action with your miraculous magic ray to remove the monster piece by piece. Frustration can set in as you race against time to free the damsel in distress. Your ability is pitted against master wizardry. $19.95.

## Photony

An alien starship has entered Photony, the realm of lasers and mirrors. It has positioned itself within the forest of mirrors and you must command an automatic robot to attack and destroy the aliens with a powerful laser weapon.

But beware, the ship has a very strong defence and can deflect and amplify your laser beams back to you.

The unique combination of laser beams and mirrors turns this game into a gruelling optical battle. $19.95.

## Traffic

You have been given the job of Head Traffic Controller in the busy streets of London. To keep the traffic flowing freely through the streets you must change the lights at each intersection at the appropriate time by using the joystick and fire button.

As the traffic continues to enter the screen, queues begin to form at the intersections and the drivers become impatient and start sounding their horns. Only skilled manoeuvring and lightning response will prevent major traffic jams occurring. $19.95.

## Seesaw

The Black Lord of the castle has captured all but one of the Balladils, the small blue creatures that roam the countryside. The only way the small Balladil can hope to get into the castle to rescue his friends is by flying up from a seesaw positioned outside the castle walls.

From the top of the wall the Black Lord pushes large blocks of stone down to try and squash the courageous Balladil. With skilful manoevring the blocks can be used to rid the walls of the Green Monsters awaiting their prey and to help the Balladil reach the top of the seemingly impenetrable castle walls. $19.95.

## Bath Time

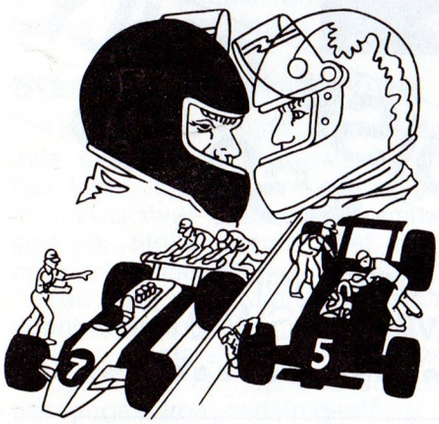
Bath Time is like no other program you've seen or played before. True family entertainment guaranteed to leave you feeling warm and glowing inside.

Your job is to protect a Swan and a Fish living happily in their bath. if the water level in the bath gets too high the Swan will swim away, if it gets too low the Fish will die.

But watch out for the Elephant and the Little Boy – their needs for water make your task even more difficult.

From its peaceful harmonies to its beautiful graphics, Bath Time is the first family arcade game. $19.95. □

# HOT STUFF



## Pitstop II

Here is a two player game that would have to rate as one of the best ever. A split screen is used to provide two independent views of the players, yet retaining the usual smooth scrolling colour graphics. There are six different circuits to choose from, each full of gruelling corners and fast straights.

Pitstop is more than just a racing game. The main feature of play is the pitstop which must be made for players to replace worn tyres and refuel. This adds an entirely new dimension to racing. Full review elsewhere in this issue. I gave it a nine.

**Distribution:** CBS Software
**Software House:** Epyx
**Format:** Disk

## Breakdance

More than just a fad, now it's also a computer game. This program consists of four different games, each one incorporating plenty of Breaking, Popping and Up Rocking. Battle the Rocket Crew, or even choreograph your own dance.

Good animation, different music, easy to use and most of all, a good laugh. Moves include the Moonwalk, Backspin, Gyro, Headspin, Handspin, Suicide, Juice and many more. This one gets seven.

**Distribution:** CBS Software
**Software House:** Epyx
**Format:** Disk or Cassette

## Salvage

An easy adventure for beginners, with some imaginative pictures. You must recover the valuable Sequerra crystal; seems software writers have got crystals on their brains. Nonetheless, pleasantly presented with a large enough vocabulary to make it playable. A must for cadet adventurers. As far as adventures rate only a seven.

**Distribution:** Ozi Soft
**Software House:** Sumlock
**Format:** Cassette

## Monty Mole

Another along the lines of Son of Blagger (the trend really is snowballing) except you are now reduced to a mole. Collect coal to save the world and your own skin – oops, fur. Good graphics, fun to play. Another eight for Monty.

**Distribution:** Ozi Soft
**Software House:** Gremlin
**Format:** Disk/Cassette

## Rocket Roger

Son of Blagger, step aside, here comes the super fast version. Stranded light years from earth, Rocket Roger must collect the crystals to stay alive. The usual smooth scrolling graphics, now with laser beams, killer eyes and many obstacles. Keyboard controls only. Tough play with enough action to annoy you at first, but eventually very entertaining. This one gets an eight.

**Distribution:** Ozi Soft
**Software House:** Alligata
**Format:** Cassette

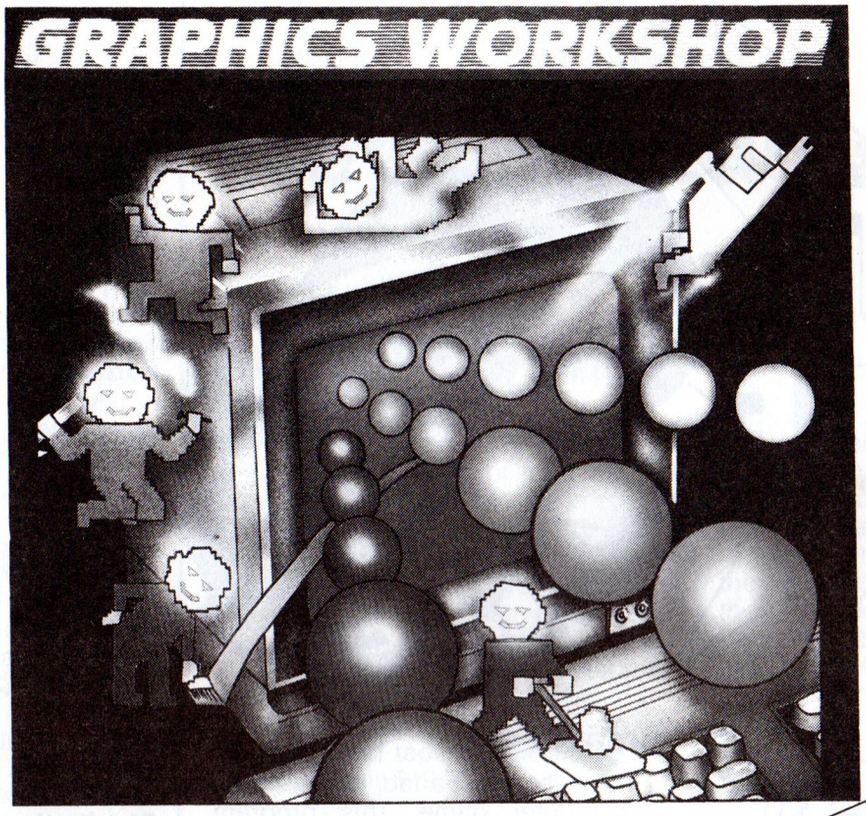
## Potty Pigeon

Original, fast action. As Potty Pigeon you have to collect enough sticks to build a nest. Avoid those nasty cars, eat a few butterflies and you'll clock up a fairly decent score. Excellent scrolling background. That alone was enough to give this one an eight.

**Distribution:** Ozi Soft
**Software House:** Gremlin
**Format:** Disk/Cassette

□

# TIME TO GET SERIOUS

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| | | |
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| **Slickcopy** | — | Single drive backup program. 4 minutes for an entire disk! $12.50. |
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| | | |
|---|---|---|
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| | | |
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# Snowball

by Greg Harper

It was way back in issue No 6 that we were first introduced to the new range of adventures offered by Level Nine Computing. Being a sucker for dungeons, monsters, treasures and adventures in general, I looked forward to getting my hands on one of these programs.

When I read its back cover, Snowball, with its futuristic setting and unique plot, quickly seized my imagination and sent it into hyper warp. The following is a review of one of the most original and enjoyable games I have yet played.

## Starship Snowball Nine

The stardate is 2304 AD. The five mile long starship, Snowball Nine, has been hijacked and sabotaged. Its robots have been reprogrammed and its flight controls set on a collision course with the star Eridani A.

You as Kim Kimberley, secret agent extraordinaire, must evade the perils of a starship gone mad and rescue it and its 1,800,000 sleeping passengers from certain death.

This is the general idea of the game, though the glamour accompanying such an introduction is not present, instead being replaced by a realistic and "down to earth" approach. Everywhere you go in Snowball you find the scene and surroundings totally convincing in their descriptions and supportive of the game's overall believability.

When you consider that Snowball has over 7,000 (yes, 7,000!) locations, you understand how the manufacturer's claim that their starship "could actually work" might just be feasible.

If you're wondering whether or not I actually counted the locations, I confess that I didn't, but after trekking through the world of Snowball for many hours, I can guarantee that statement wouldn't be far off.

To add to the setting, Level Nine have included in the instructions an imaginative seven page story on the background of the game's events. These intricate details range from the physical weights and measurements of your character to the state of the world's unemployment. It all provides for very interesting reading, to say the least. Now let's get down to actually playing the game...

Snowball is available on tape or disk; but all you datasette owners, do not fret. From beginning to end it took me no more than two minutes to load, due to the fact that it is equipped with Turbo Load. Not bad for a game as complex as this one.

All of the on screen messages are written out in a pleasant combination of upper and lower case lettering, with your entries differing in colour from the computer's, making for an extremely easy to read screen.

My first few attempts at Snowball led only to my character's quick death, the growth of my own frustrations, and eventually the demise of the game from my mental list of enjoyable pastimes. I slammed the package into a drawer and vowed never to touch it again.

My actions, I still feel, were understandable. The beginning of the adventure is quite vague in its descriptions, it lacks "feeling", and everywhere you go the damned nightingales always end your life before you know what's happening. These deficiencies the manufacturer accounts for by saying "You're weakened and disorientated from lengthy hibernation...". Whatever you do don't give up at this stage. Learn from your mistakes and continue – the game gets progressively better.

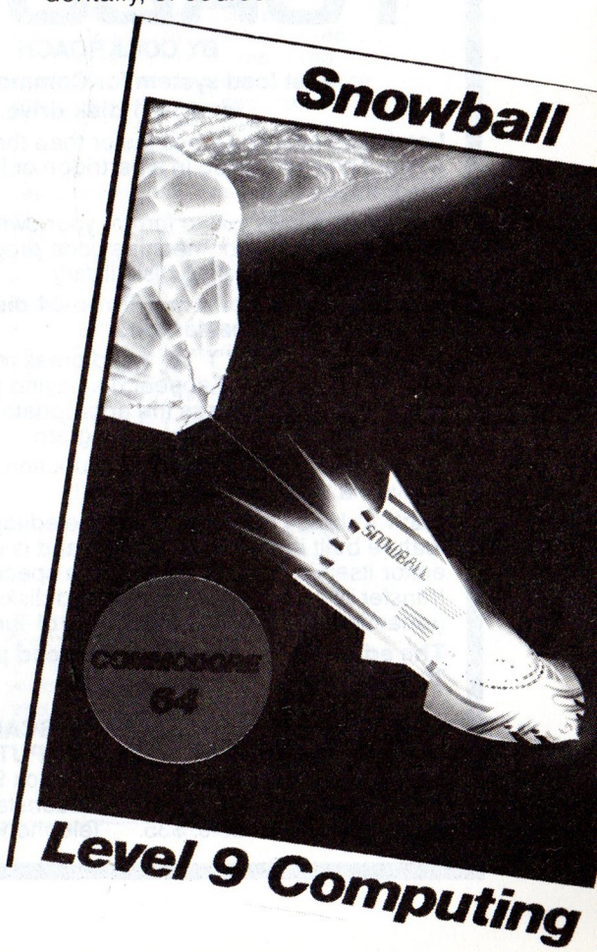
It took the enthusiasm of an inquisitive friend of mine to get me to open the box and start the game again. Am I ever grateful to him!

## Thoroughly addictive

Following the problems and frustrations, I settled down to a thoroughly addictive piece of software. Nine hours later, I managed to turn off my 64 to get some shuteye, though the first thing next morning I was at it again.

The game has as excellent a balance of intrigue, thought provocation and challenge as you are ever likely to find. Should you ever get bored, you always know that waiting around the corner is a whole new avenue of problems and rewards, all leading to the ultimate goal of a successful ending.

An interesting feature of Snowball is the inclusion of a clue (or rather a cheat) sheet. It gives 220 clues on approximately 200 objects and locations that you may encounter, telling you of their uses and whereabouts. Level Nine recommends that you use it only when you have to, and this is good advice, but inevitably you find yourself gazing over unrelated clues, quite accidentally, of course.




Particularly in the earlier section of the game don't go desperately searching for answers to all your problems by going straight to the sheet, as you will find yourself being led blindly through the game with the results being most unsatisfying. Clue No 366 is an important piece in the puzzle of where you actually are, and I suggest that you read it before you start, to avoid many misconceptions.

Level Nine estimate that it takes two weeks to complete Snowball, though, more precisely, it took me every bit of 19 hours to master the autopilot and save the starship.

So far it may sound as if Snowball is a game of divine substance with only the afore-mentioned faults having any resemblance to imperfection. So now I'll be just and inform you of the other sad part.

## Vocabulary

On the minus side for Snowball is its vocabulary. After a while you get used to it and it becomes "adequate" but it is often nagging when words such as GO, TO and MOVE are all rejected with an "I don't understand" response. By no means can it match the likes of the Zork Trilogy, for example, but it is as I said "adequate". There are also a few grossly misspelt words which downgrade the quality of the program.

Snowball is written in an adventure language which Level Nine call their "a-code" language. It gives machine-code speeds though it also makes text appear on the screen in a jerky and spasmodic manner that is both distracting and irritating.

Another downgrading aspect is the presence of a functional RESTORE key. Once during the middle of an in depth game that I had devoted many hours to, I hit the RESTORE instead of the RETURN key which promptly terminated my game. Luckily I had already SAVEd my game, which brings me to another point.

The SAVE and RESTORE commands, essential in a game of this nature, are both simple and quick to perform and execute, as well as giving perfect results most of the time.

I say "most of the time" because once or twice my SAVEd game crashed and I had to reLOAD the whole program. For some strange reason, any saved games come out without your score present. This is not important, though, and doesn't have any bearing on the game.

Overall Snowball is an excellent game that should provide "hours of fun for the whole family". Snowball will be followed by two sequels: Return to Eden and The Worm in Paradise, both of which have yet to be released. Until then I think I shall delve into another Level Nine world; maybe Dungeon Adventure, which is supposed to take four times as long as Snowball to conquer. Should you have any troubles in solving Snowball I will be more than glad to help. Send your queries to Adam Rigby's Adventurer's Corner column and I shall reply as soon as possible.

Snowball is available from Ozisoft at $29.95 on disk and $24.95 on cassette.


| | |
|---|---|
| **Originality** | ***** |
| **Lasting Appeal** | **** |
| **Difficulty** | *** |
| **Value** | ***** |

□

# Decorative Borders

by Paul Regan

This program simplifies the drawing of screen borders.

The routine is relocatable and may be located anywhere in memory where there is a spare 255 bytes or so. The loader program currently locates the routine starting at location 49152.

To locate the routine at some other starting point simply change the value of the variable p in line 905.

Type in the loader and data statements. Don't forget to save the program before running it. Each data statement has 5 bytes of machine code, plus a checksum value and line number. If you made an error typing in the program, the loader should list the offending line number.

## The routine in operation

The routine draws a border on the screen around a window that is defined in the calling sequence. The actual border is drawn in reverse video using a character of your choice. The screen character code is passed along with the colour code. Additionally, you may select whether or not to clear the interior of the border with the value of the final parameter. The routine is fast and flexible, and does not upset the basic screen pointers in any way.

To call the routine, use sys(ad),r1,c1,r2,c2,ch,c1,c

where

ad is start location of routine.

r1 and c1 are the row and column numbers of the top left corner of your border.

r2 and c2 are the row and column numbers of the bottom right-hand corner of your border.

ch is the screen code number for the border symbols. Experiment with values between 1 and 127.

c1 is the colour code for the colour of the border. (Ø-15).

c should have a value of Ø or 1.

if c=Ø the interior of the border will not be disturbed.

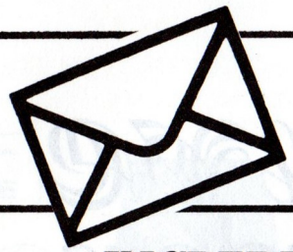
any other value for c will cause the screen inside the border to be cleared. □

## Borders

```
900 rem *** basic loader ***
902 :
905 p = 49152 : rem start address
907 :
910 rem *** read each line of data ***
912 :
915 for j = 1000 to 1500 step 10
917 :
920 : s = 0 : rem ** initialise sum
922 :
925 : for K= 1 to 5
930 :   read a:poKep,a:p=p+1:s=s+a
935 : nextK
937 :
940 : read c,l : rem *** read checksum and line
942 :                                    number.
945 : if c <> s then print"error in line";l:end
947 :
950 nextj
955 end
1000 data 169,0,133,255,32,589,1000
1010 data 253,174,32,158,183,800,1010
1020 data 138,164,255,153,60,770,1020
1030 data 3,230,255,200,192,880,1030
1040 data 7,208,237,173,62,687,1040
1050 data 3,201,25,144,1,374,1050
1060 data 96,205,60,3,144,508,1060
1070 data 250,240,248,173,63,974,1070
1080 data 3,201,40,176,241,661,1080
1090 data 205,61,3,144,236,649,1090
1100 data 240,234,173,65,3,715,1100
1110 data 41,15,141,65,3,265,1110
1120 data 173,64,3,9,128,377,1120
1130 data 141,64,3,169,0,377,1130
1140 data 133,251,133,253,169,939,1140
1150 data 4,133,252,169,216,774,1150
1160 data 133,254,174,60,3,624,1160
```

```
1170 data 224,0,240,18,24,506,1170
1180 data 165,251,105,40,133,694,1180
1190 data 251,133,253,144,4,785,1190
1200 data 230,252,230,254,202,1168,1200
1210 data 208,238,172,61,3,682,1210
1220 data 173,65,3,145,253,639,1220
1230 data 173,64,3,145,251,636,1230
1240 data 204,63,3,240,3,513,1240
1250 data 200,208,238,24,165,835,1250
1260 data 251,105,40,133,251,780,1260
1270 data 133,253,144,4,230,764,1270
1280 data 252,230,254,238,60,1034,1280
1290 data 3,173,60,3,205,444,1290
1300 data 62,3,240,51,172,528,1300
1310 data 61,3,173,65,3,305,1310
1320 data 145,253,173,64,3,638,1320
1330 data 145,251,200,204,63,863,1330
1340 data 3,240,18,173,66,500,1340
1350 data 3,240,245,173,65,726,1350
1360 data 3,145,253,169,32,602,1360
1370 data 145,251,169,0,240,805,1370
1380 data 232,173,65,3,145,618,1380
1390 data 253,173,64,3,145,638,1390
1400 data 251,169,0,240,179,839,1400
1410 data 172,61,3,173,65,474,1410
1420 data 3,145,253,173,64,638,1420
1430 data 3,145,251,204,63,666,1430
1440 data 3,240,3,200,208,654,1440
1450 data 238,96,0,76,255,665,1450
1460 data 0,32,255,255,0,542,1460
1470 data 4,255,255,0,0,514,1470
1480 data 255,255,0,0,255,765,1480
1490 data223,0,0,255,255,733,1490
1500 data 0,32,36,255,124,447,1500
ready.
```

# BEAGLE COMPUTER SERVICES



# MAIL ORDER LIST

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Buy an **Incredible Musical Keyboard** and get a **Music Processor** ($54.95 worth of software) absolutely free!

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(See review in November issue – this review also says the Music Processor is "probably the most comprehensive and useful program in the series".)

## TOP SELLERS

**Pogo Joe** **$29.95 (c)** **$34.95 (d)**
Award winning!! Many levels, excellent graphics.

**Asylum** **$34.95 (c)** **$39.95 (d)**
See preview in December issue. Graphics adventure.

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**Suicide Express** **$19.95 (c)**
(Arcade/speech/excellent graphics)

**Potty Pigeon** **$19.95 (c)**
Pretty graphics, great for nature lovers.

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Blagger type action, ladders and levels.

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Olympics.

**Son of Blagger** **$19.95 (c)** **$24.95 (d)**
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**Golf** **$16.95 (c)**
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**Cricket** **$16.95 (c)**
(Simulation.)

**Show Jumping** **$16.95 (c)**
(Here's one for the girls.)

**Lazy Jones** **$19.95 (c)**
(Very entertaining.)

I have carefully looked over the entire range of software and hardware being offered in this mail order list, and believe that it is of good quality and excellent value for money.

*Andrew Farrell, Editor*

## EDUCATION

**Typing Tutor** **$19.95 (c) $24.95 (d)**
Basic typing skills.
**Playful Professor** **$29.95 (d)**
Teaches maths at many levels from earliest up.

(We expect to see this list grow larger next issue.)

## SPECIAL PURPOSE

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(Sprite editor/character editor/animation all in one package, fully integrated, a must for programmers, teachers, hobbyists.)

## HARDWARE

| | |
|---|---|
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Double sided (notch the other side and get more out of your disk), double density (for greater reliability).

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**Beagle Computer Services, 130 Perouse Rd, Randwick, NSW 2031**
(If you don't want to cut up the magazine, just photocopy these two pages.)

Name .....

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.....

Payment * Cheque enclosed for $

* Bankcard _____ Expires .....

# Try these easy programs for amazing results!

L.E. and J.E. Johns

Just for the record we are a retired couple and all we know of programming is entirely what we have learnt at home from manuals and magazines. It's a very interesting hobby for us (in fact compelling). So if our programming techniques are a bit weird in places you'll know the reason.

Firstly, a mathematical problem sent to us some years ago by a maths teacher. Having arrived at the right answer on paper and wondering what we could do with our ZX8Ø with 8KRom we decided to write a program for this problem. This program has now been rewritten for our C64 and is printed on the MPS8Ø1. The program has been written with Simons' Basic for two reasons. Firstly – the plotting is so much easier and quicker. Secondly – we know of no other way to print the result of a calculation onto the Hires screen.

Can this be done with Commodore Basic please?

Our second offer is a Basic Sprite Editor. What we like about this is how the program displays the line numbers, data and commas. All one has to do is press Return against the line numbers at the end of the spritemaking.

Our third offering is a Calendar program which was derived from a formula we found in a book on calculators.

Our fourth program is a user defined program graphic grid to use with the MPS8Ø1. This is the method used to make the small '2' (squared) and the small '4' (to the fourth power) on page 2 which is a printout of the maths involved in solving the Point in the Square problem.

Then there is our Hangman game for two players. Young kiddies near us come in and get just as much fun typing in a hard word for their playmate as trying to solve a word.

## Point in Square Problem

The highlight of this program in our minds is line 44Ø in the printout. This line will print out the E in scientific notation mode. To do this A, B, C have to be input in decimal form, eg –.Ø1, .Ø2, .Ø3 and line 2ØØ will need to be adjusted to L=L-.ØØ1. OPf course this is too small to plot a square.

We worked out the plotting technique from mathematics books.

We have included this problem of the square written in C64 BASIC just in case anyone is interested in it and does not have Simons' Basic.

Page 3 is the program we wrote to print out the mathematics on page 2.

```
ready.

100 print"{CLR)":rem***point in square problem***
110 rem***using simons' basic***
120 rem **by l e & j e johns **
130 print"a point in a square is a,b & c cms from 3 of its corners.what is the s
ize"
140 print" of the square ? after entering numbers wait for calculation."
150 print"  eg:a=60:b=70:c=80"
160 input"a";a:input"b";b:input"c";c
190 l=a+b
200 l=l-.1
220 d=(a*a+l*l-b*b)/(2*a*l)
230 e=(a*a+l*l-c*c)/(2*a*l)
240 ifd*d>1-e*e then 200
250 n=d*a:m=e*a
260 D(  1) 0,1
270 x=150-l/2:y=100-l/2
280 for t=0 to l:D(  2)x+t,y,1:next
290 fort=0tol:D(  2)x+l,y+t,1:next
300 fort=0tol:D(  2)x+l-t,y+l,1:next
310 fort=0tol:D(  2)x,y+l-t,1:next
320 D(  2)x+m,y+l-n,1
330 DO x+m,y+l-n,"p",1,1,8
340 fort=0tom:D(  2)x+t,y+l-(n/m)*t,1:next
350 DOx+(m/2),y+l-(n/2),"a",1,1,8
360 fort=0tol-n:D(  2)x+( m )/(l-n)*t,y+t,1:next
370 DO x+(m/2),y+(t/2),"b",1,1,8
380 fort=0tol-m:D(  2)x+l-t,y+l-n/(l-m)*t,1:next
390 DOx+l- m ,y+l-(n/2),"c",1,1,8
400 DO x+l+4 ,y+l/2 ,"l",1,1,8
410 l$= str$(l):n=0
420 fort=1 to len(l$):n=n+8
430 def fn m(t)=asc(mid$(l$,t,1))
440 iffn m(t)=69 then D( 11) 240+n,90,5,1,1:t=t+1:n=n+8
450 D( 11) 240 + n,90,fn m(t),1,1:next
490 DO240,60,"a=",1,1,8
492 a$=str$(a):n=0
500 for t=1 to len(a$):n=n+8
510 def fn m(t)=asc(mid$(a$,t,1))
512 if fn m(t)=69 thenD( 11) 240+n,60,5,1,1:t=t+1:n=n+8
514 D( 11) 240+n,60,fn m(t),1,1:next
540 DO240,70,"b=",1,1,8 :n=0
550 b$=str$(b):fort=1tolen(b$):n=n+8
560 def fn m(t)=asc(mid$(b$,t,1))
562 if fn m(t)=69 then D( 11) 240+n,70,5,1,1:t=t+1:n=n+8
564 D( 11) 240+n,70,fn m(t),1,1:next
590 DO240,80,"c=",1,1,8:c$=str$(c):n=0
600 fort=1 to len(c$):n=n+8
610 def fn m(t)=asc(mid$(c$,t,1))
612 if fn m(t) =69 then D( 11) 240+n,80,5,1,1:t=t+1:n=n+8
614 D( 11) 240+n,80,fn m(t),1,1:next
640 DO240,90,"l=",1,1,8
660 goto 660

ready.
```

## Calendar from 1701 onwards

Line 90 would calculate 1800 and 1980 to be leap years which they are not.

Line 100 compensates for this.

We have tested several results against a Perpetual Calendar table in an encyclopaedia and have found no errors.

```
ready.

10 rem **** calendar from 1701 onwards  ****
20 rem *** by l e & j e johns ***
30 print
40 print"{CLR)":input"date";d:input"month";m:input"year";y:print"{CLR)" :e=d
50 if y<1800 then e=e+2
60 if y <1900 and y> 1799 then e=e+1
70 dim o(12):data6,2,2,5,0,3,5,1,4,6,2,4
80 for n=1 to 12:read o(n):next
90 a=y*1.25:if a=int(a) then o(1)=5:o(2)=1
100 ify=1900 or y=1800 then o(1)=6:o(2)=2
110 b=(a+o(m)+e)/7:c=int((b-int(b))*7.1)
120 dim a$(7):for n = 0 to 6:read a$(n):next
130 data saturday,sunday,monday,tuesday,wednesday,thursday,friday
140 print tab(10)d"/"m"/"y:print tab(14)a$(c)

ready.
```

## Basic Sprite Editor

We think the highlight of this program is the fact that it prints out the line numbers, the data and the commas.

When you run this program you are asked to enter a line number (LN?) according to the program you are making (say 100). Enter this number and press return. The sprite grid will be drawn and the movable dot will appear immediately above the first grid dot. Position the movable dot by using the cursor keys and draw the sprite by pressing F7.

Erase mistakes by pressing F5. When the sprite is drawn press F3. The line numbers, data and commas will appear on the screen when the moving dot completes the calculations. Simply take the cursor to the top of screen and press Return against each line and Run again. Your sprite will appear in the middle of the screen.

We are not smart enough to know how to get rid of the sprite editor afterwards other than by tediously deleting each line. There must be a better way???

```
ready.

10 print"{CLR)":print"press run/stop & run 6000"
5990 goto5990
6000 rem *** basic sprite editor ***
6001 rem     ** by l e johns **
6002 print
6003 for n =832 to 960:poke n,0:next
6004 print
6010 print"{CLR)":v=53248:poke v+21,3:poke 2040,13
6020 poke v+23,3:poke v+29,3:poke v+40,1
6030 input"ln";ln:print"{CLR)"
6050 print"      ";:for n=1 to 24:print"{WHT).";
6060 next:r=r+1:poke 832,128:poke v+39,0
6070 if r>20 then 6090
6080 print:goto 6050
6090 x=67 :y=60
6100 get a$
6110 poke v,x:poke v+1,y
6120 if a$="{RHT)" then x=x+8:if x>251 then x=251
6130 if a$="{LFT)" then x=x-8:if x<67 then x=67
6140 if a$="{ DN)" then y=y+8:if y>220 then y=220
6150 if a$="{ UP)" then y=y-8:if y<60 then y=60
6160 s=781+ int(x/8)+int(y/8)*40
6170 if a$="{ F7)" then poke s,224:poke s+54272,1
6180 if a$="{ F5)" then poke s,32:poke s,46
6190 if a$="{ F3)" then x=67:y=60:dim d$(63): goto 6210
6200 goto 6100
6210 t=7:for x=67 to 251 step 8
6220 s=781+ int(x/8)+int(y/8)*40
6230 if peek(s)=224 then gosub 6310
6240 poke v,x:poke v+1,y
6250 if x=123 then e=e+1:d$(e)=str$(d):d=0:t=8:c=-8
6260 if x=187 then e=e+1:d$(e)=str$(d):d=0:t=8 :c=-8
6270 if x=251 then e=e+1:d$(e)=str$(d):d=0:y=y+8:t=8:c=-8
6280 if y=228 then print"{CLR)":goto 6391
6290 c=c+8:t=t-1:next
6300 goto 6210
6310 if x=67+c or x=131+c or x=195+c then d=d+2^t
6390 return
6391 print ln"v=53248:poke v+21,2:poke 2041,14:pokev+23,2:pokev+29,2":ln=ln+1
6393 print ln"for n=0 to 62:read a:poke 896+n,a:nE":ln=ln+1
6394 print ln"poke v+2,180:poke v+3,120":ln=ln+1
6400 print ln"data";
6410 for n=1 to 63:print d$(n)",";
6420 if n=13 then ln=ln+1:print"{LFT) ":print ln"data";
6430 if n=27 then ln=ln+1:print"{LFT) ":print ln"data";
6440 if n=39 then ln=ln+1:print"{LFT) " :print ln"data";
6450 if n=52 then ln=ln+1:print"{LFT) "::print ln"data";
6460 next:print"{LFT) "
```

## User defined MPS801 printer graphic editor

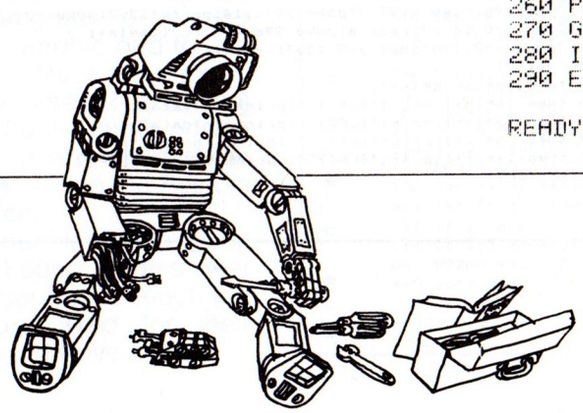
**by L.E. and J.E. Johns**

This program runs on the same lines as the Sprite Editor. To use it the printer must be connected because when the data lines are entered and the program is rerun the character is printed on the printer automatically.

```
ready.

4800 rem *** user defined mps 801 printer graphic editor***
4810 rem***by l e & j e johns***
4990 print"{CLR}":input"ln";ln:print"{CLR}":for n=832 to 896:poke n,0:next
5000 v=53248:poke v+21,1:poke 2040,13:poke v+23,1:poke v+29,1:poke v+39,0
5010 x=147: y=100:poke 832,128
5990 print"{CLR}":print"{ DN}{ DN}{ DN}{ DN}"
6000 for n=1 to 7:print tab(15)".";
6060 next:r=r+1
6070 if r>6 then 6100
6080 print:  goto 6000
6100 get a$
6110 if a$="{RHT}" then x=x+8:if x>195 then x=195
6120 if a$="{LFT}" then x=x-8:if x<147 then x=147
6130 if a$="{ UP}" then y=y-8:if y<100 then y=100
6140 if a$="{ DN}" then y=y+8:if y>148 then y=148
6150 poke v,x:poke v+1,y
6160 s=781+int(x/8)+int(y/8)*40
6170 if a$="{ F7}" then poke s,224:poke s+54272,1
6180 if a$="{ F5}" then poke s,32:poke s,46:poke s+54272,1
6190 if a$="{ F3}" then dim d$(7):x=147:d=128:goto 6400
6200 goto 6100
6400 for y=100 to 148 step 8
6404 pokev,x:pokev+1,y
6410 s=781+int(x/8)+int(y/8)*40
6420 if peek(s)=224 then gosub 7000
6440 if y=148 then e=e+1:d$(e)=str$(d):d=128:t=0:c=0:x=x+8:goto 6400
6460 if x>195 then goto 8000
6480 t=t+1:c=c+8:next
7000 if y=100+c then d=d+2^t
7010 return
8000 print"{CLR}":print ln"data";:ln=ln+1
8010 for n=1to7:print d$(n)",";:next:print"{LFT} ":ln=ln+1
8020 print ln"for n = 1 to 7:read d:d$=d$+chr$(d):nE":ln=ln+i
8030 print ln"open3,4:print#3,chr$(8)d$"

ready.
```

# Beginners' fun program — Code Guesser

```
READY.


10 PRINT"■"
20 FORF=0TO10
30 PRINT"■      ■CODE GUESSER"
40 FORI=0TO100:NEXT
50 PRINT"■      CODE GUESSER"
60 FORI=0TO100:NEXT:NEXT
70 A$=CHR$(INT(26*RND(1))+65)
80 B$=CHR$(INT(26*RND(1))+65)
90 C$=CHR$(INT(26*RND(1))+65)
100 D$=CHR$(INT(26*RND(1))+65)
110 E$=CHR$(INT(26*RND(1))+65)
120 PRINT"■■ I HAVE A FIVE LETTER CODE NUMBER"
130 PRINT"■■ YOU MUST GUESS THE CODE"
140 F$=A$+B$+C$+D$+E$
150 INPUT"■ YOUR GUESS : ";G$
160 IFLEN(G$)<>5THENPRINT"■ FIVE LETTERS":GOTO150
170 NO=NO+1
180 FORI=1TO5
190 IFMID$(F$,I,1)=MID$(G$,I,1)THENC=C+1
200 NEXTI
210 IFC=5THENGOTO240
220 PRINT"■ YOU HAVE ";C;" LETTERS CORRECT"
230 PRINT"■":C=0:GOTO150
240 PRINT"■":FORI=0TO300:PRINTF$,:NEXT
250 PRINT:PRINT" YOU GOT THE CODE IN"NO"GUESSES"
260 PRINT"■ ANOTHER GO (Y/N)"
270 GETZ$:IFZ$<>"N"ANDZ$<>"Y"THEN270
280 IFZ$="Y"THENCLR:GOTO10
290 END

READY.
```



# What's new and exciting?

by Gareth Powell

What's new and exciting at Commodore? A lot. There is so much happening on the Commodore front it's hard to know where to begin.

Let us start with what we know. The Commodore 16 is alive and well and selling like hot-cakes, and is undoubtedly the new Vic 2Ø which it effectively replaces.

To all those doubters who say that it is not a proper computer we say "fie" and likewise "boo sucks". If you had been given that much power on a pesonal computer six years ago you would have been over the moon. To my mind it is the perfect machine for the beginner.

## Long in the tooth

The Commodore 64, now a little long in the tooth but still hanging in there, is going to be given an upward boost when it becomes the C128.

What does the change in numbers mean?

Simply that there will be twice the Random Access Memory but, effectively, three times as much memory for the user to play with.

On the 64, if you think you're going to have 64K RAM all to yourself you're deluding yourself. Much of that space is immediately grabbed by essential parts of programs which allow you to write, draw or play.

Therefore the addition of another 64K RAM vastly more than doubles the amount of available memory to the user. Which is a good thing.

## New CP/M

At the same time it seems more than likely that the new C128 will also run C/PM 3.Ø.

Those of you who have had experience with CP/M will probably shake your heads in disgust and consider this a retrograde step. And if it means you end up using "WordStar" we would be among the first to agree with you.

But C/PM 3.Ø is a very different animal from the versions that have gone before, where the instruction books were translated from Kurdish and Latvian into a new language called Lower Slobbovian.

The new version is neat, elegant and extremely quick. And the documentation is such that it can be read by Andrew Farrell – with no assistance from teacher. Which is a feat in itself.

## Holding operation

My guess is that this move to upgrade the 64 is merely a holding operation on the part of the management of Commodore, who are getting ready to astound the world with Amiga (frequently seen spelt Omega and Amigo which is a class act about which more later).

Even though this is a holding operation, the machine as it stands is very desirable indeed to those of us who are, like me, 64 fanatics.

My guess is that it will give a further lease of life to a machine which, although it has given sterling and stalwart service in the past, is now getting long in the tooth compared with the Gee Whiz marvels coming down the track.

## Plus 4

By the time you read this magazine the Plus 4 should be on sale in Australia, but I only believe these things when I see them.

The Plus 4 is designed specifically for the businessman who wants to buy a simple computer and decides on the Commodore 64. To his delighted surprise he finds that the Plus 4 has all he wants built-in, although it has lost some of the frills (essentials to us enthusiasts) that distinguish the 64.

In Plus 4 there is a built-in chip which has a program called 321. Lotus 1-2-3 it is not.

But it does have a word processing program – not a great one, but it works. And it does have a spreadsheet (not a great one, but it works). And it does have a database (not a great one but it works).

As most makee-learner business computer users very rarely make full use of all the features of any single

*Commodore 16*

program, the 321 is probably enough.

But the machine only works in 40 columns. True. But I have seen a version in Hong Kong that works with 80 columns and my guess is that we will see a Plus 8 released Real Soon Now.

## Microfloppies

Commodore have decided to go with the rest of the industry and use the standard microfloppy disk drive which will store quite large amounts of information but is hardly Speedy Luigi in the information transferring stakes.

Again, what I think we have here is a holding operation.

Commodore will undoubtedly announce a laser disk drive before the end of this year which will hold almost unlimited information, as in 720 megabytes a disk. (That is not a misprint. I said and mean 720 megabytes. I have actually seen one, used one, written to one, read from one. And no other computer journalist in Australia can say that.)

## Cheap memories

These drives will cost well below $1,000 with the disks costing around $10 each for the base material. With these disks you will be able to have all the libraries in the world on your desk. Believe me. It is true.

## The next generation

Then, from Commodore before the end of this year we will see the amazing Amiga which will be a generation leap for Commdore.

Important to realise that this machine was not developed within the sacred precincts of Commodore but by an outside company. Commodore paid very serious money for the rights.

The only man I know who has seen it working is Nigel Shepherd, a man not known as a true romantic. A man with a healthy dose of cynicism in his make-up. And he was astounded on viewing the Amiga in action.

He went to view the machine expecting to see something markedly superior.

What he saw was a machine so advanced in concept that after listening to the explanations of the designers for four minutes, he asked them to stop as it was all going above his Scottish head.

But, he says, he has never seen a machine that remotely approachs the Amiga for quality of colour and sound. The colour compared with current computer standards is what colour televison was to lantern slides. And the sound compared with the standards we are used to is what high fidelity was to Edison's wax cylinders.

Seems pretty amazing.

## Can Atari make it?

Manwhile, elsewhere, Jack Tramiel is launching a series of new machines from Atari which he bought for sixpence down and chase me for the rest.

If it was any other person than the Incredible Jack I would have said the task of reviving Atari was impossible and it could not be done.

And even accepting the fact that it is Jack Tramiel, there are two problems.

One is money.

To get Atari onto the retailers' shelves he is going to have to lash out with very big bikkies indeed. Whether corporate America – which has just received a financial lashing over the death of Coleco – are willing to kick the tin for that amount is open to doubt.

His second problem is software. He simply hasn't got anything that is new, exciting and highly salable. Without good software a computer is just a slab of machinery.

Will the software manufacturers come to the party and produce programs for the Atari?

Posssibly.

But only if the Incredible Jack underwrites them and that will mean more big bikkies.

All the odds are against a revival of Atari working.

And if it was anyone other than Jack Tramiel the situation would hardly be worth discussing.

Even with the Incredible Jack at the helm it seems an impossible task. The next six months will show if he has pulled it off. □



# 1541 disk

**by M. Zolin**

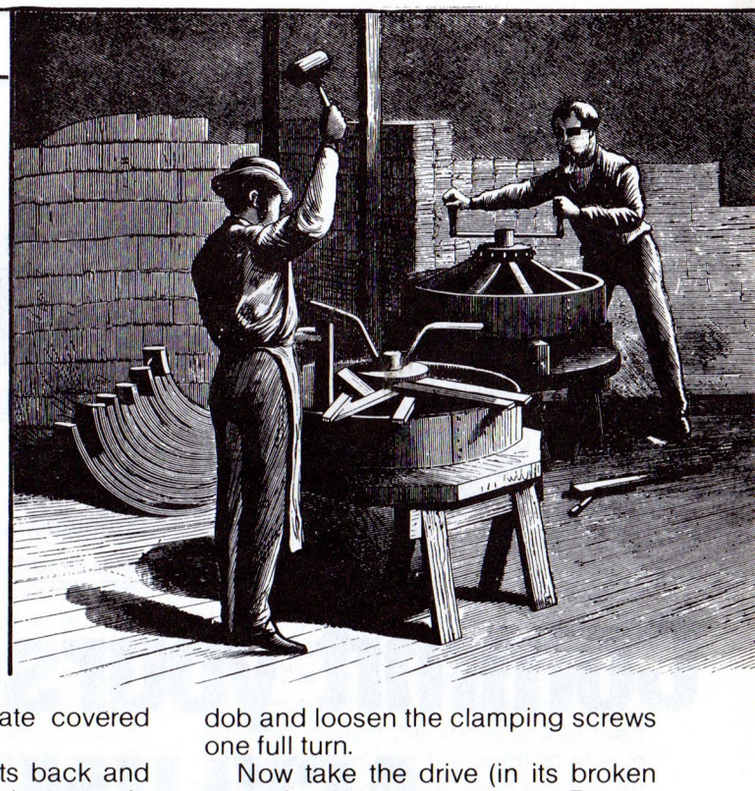
We all know how the 1541 drives, particularly the earlier ones, have a bad habit of pushing themselves out of adjustment with use. We also know that realigning the drive is a very tricky matter. It should only be tackled by qualified technicians at approved workshops and all that stuff. We also know that, promises notwithstanding, those same workshops could have to hang on to your drive for weeks. That can have results varying from the annoying to the disastrous.

Faced with the possible loss of my drive for that length of time, I decided that I could at least try to do something about misalignment myself. Let me say right here that the drive was long out of warranty and so there was little to lose by my "having a go". Let me also say that I have been dealing with electronics and the fiddly mechanics that go with them for a quarter century. The job of realigning the drive requires a certain skill. If you have five thumbs on one hand and three toes on the other, just read this as fiction and take your drive to the workshop and those qualified mechanics. But out there in computer world there are a lot of people who would have no qualms at taking a hi-fi machine apart. Doing the disk drive is no harder. By the way, it took me a number of sessions with my drive over six months before I got the technique straight. The rest of the article describes the final version – the one that works.

It is commonly thought that you need special gauges and tools to fix a misaligned drive. You can buy (in the USA) a kit and manual that will let you do a professional job. My method is probably frowned upon by the purists, but I find it works well enough to let the drive read and write any disks and that the disks it produces are readable by other drives. What more do you want?

There are two levels of repair available. The first is a sort of Band-Aid and aspirin approach. The

# drive alignment



second is the big whammy to use when the first no longer works.

For the first you will need the following tools:

a Philips head screw driver with a 4 mm shank,
an ordinary flat screw driver with a 4 mm blade
a commercial floppy disk (see later for why)
a bottle of Loctite (R) 601 (from your friendly auto parts store), and this program

```
10  OPEN 15,8,15,"I":TK=18:GOSUB
  100
20  OPEN 2,8,2,"#":GOSUB 100
30      PRINT#15,"U1:2,0,1,10":TK=1:
  GOSUB 100
40  PRINT#15,"U1:2,0,35,10":TK=35:
  GOSUB 100
50  GET A$: IF A$<>"Q" THEN 30
60  CLOSE 2: CLOSE 15: END
70  :
100 INPUT#15,A,B$,C,D
110   PRINT  "TRACK";TK;A;B$;C;D:
  RETURN
```

For the whammy you'll need all of that plus either a small bearing puller (instrument type) or another 4mm straight blade screw driver – not really specialized tools.

Why the commercial floppy? Simple, we assume that a commercial floppy will have been formatted on a machine with proper head alignment so that its tracks will be in the right place and within tolerance limits. I used an EASY SCRIPT disk successfully but it is preferable to use a disk without header error copy protection. If a disk has errors in sector 10 of tracks 1 or 35 the program above won't work. We use the commercial floppy as our gauge for setting the head on our machine.

## Opening the drive

For both methods you must first open the drive. Start by unplugging power and serial cables from the back. Then find a clean, dust-free place to work. A laminate covered kitchen table is ideal.

Turn the drive on to its back and remove four Philips head screws in wells at the four corners of the base.

Grasping top and bottom securely, turn the drive back on to its base and pull off the top. This will expose the printed circuit board (pcb).

For the Band-Aid method you needn't remove the pcb. Instead, remove six Philips head screws that hold the metal frame on to the bottom half of the plastic case. Carefully separate the "works" from the case and put the case aside.

## Finding the adjustment

Turn the metal frame on its back so that the pcb is on the bottom. Be careful not to bend the electronic components or put too much load on them. A cushion or folded towel under the board is not a bad idea if you haven't got a better support.

Look at the bottom and identify the bit of the power transformer that sticks out. Between the transformer and the front of the drive you will see a couple of cutouts in the metal bottom revealing a multicoloured cable and two mounting lugs for the stepping motor that drives the head. The motor is quite a flat device something like 70 mm in diameter, 15 mm thick, with a shiny aluminium bottom, cad-plated case and cad-plated mounting lugs.

## The alignment

The motor lugs are clamped to the drive base with two Philips head screws and washers. The screws will be held with a dob of cement (usually green). Break the cement dob and loosen the clamping screws one full turn.

Now take the drive (in its broken down form) to the computer. Reconnect the power and serial cables, make sure there is no metal to form short circuits and rest the drive upside down in its usual working spot. Again some cushioning won't do any harm. Switch on.

Type in the program above, make sure your commercial disk has a write protect tab on it and insert the disk in the drive (upside down because the drive is upside down). Close the gate and type "RUN". You will hear the drive start up and the head moving back and forth. The misalignment should show up either as flashing of the red LED on the drive or as messages like "AA READ ERROR XX YY" where XX and YY are the track and sector number respectively. Let the drive keep running, and using the flat blade screw-driver as a lever move the stepping motor so that the slots in the lugs move relative to the clamping screws. You should find that in some positions of the motor lugs you get all "0 OK 0 0" messages and at others you will get errors either in track 1 or track 35. If you are lucky you will find that at one end of the movement you will get track 1 errors and at the other track 35 ones. Whatever is the case, find the limits of the position where no errors come and mark them. If only one limit is found, mark it. Then move the lugs to either between the marked limits or to some place between the one limit and the end of movement that shows no errors. Tighten the clamp screws. Seal them with a small drop of Loctite (R). Press "Q" to stop the

program. Remove the disk from the drive. Put the drive back in the case and put all the various screws back. That's it. End of job.

There's only one problem with that, it will need to be done again another time. To prevent that, you need the big whammy. The reason for the machine going out of alignment all the time has to do with bad selection of materials in the mechanical drive itself. By the way, the mechanical part of the drive is not a Commodore product, it's a standard piece of machinery that Commodore incorporate into the 1541.

The materials that are a problem are the combination of a diecast cam and a steel spindle. With the first press-fitted to the latter you get a condition called "creep" in which the diecast loses its close tolerance and sort of grows to be a loose fit on the spindle. When you use protected disks or format a new disk the drive indexes itself by bumping against an end stop. The bumping causes slippage between the cam and the spindle and hey-presto, a misaligned drive. What we have just done with the Band-Aid method is to get rid of the misalignment, not cure the problem.

It isn't wise to apply the big whammy the first time a misalignment happens. You may be able to get away with the simple alignment and get a drive that won't go out of shape for years. On the other hand, most people find that once the misalignment starts it will recur, no matter how many times it is corrected. If this starts to happen then it's time to take more drastic steps – which will be described next.

## The whammy

Open up the case as described above and then take off the printed circuit board (pcb) as described below.

## Remove the PC board

There are a number of different designs of pcbs used in different versions of the 1541 so there is no point describing one. They all have one common feature that they are connected to the "works" by plug connectors around their edges. There will be a power plug (four heavyish leads) somewhere towards the right back of the board. A set of three multi-pin sockets are along one edge (usually left looking from the front). A three pin socket connects to the green LED in the front of the case and another socket (black, five pin with black cable) connects to the read/write head. Note the position and alignment of all these sockets and unplug them and any others you may find with cables going off the board. Observe the usual precautions needed when handling micro components of micro-electronics. If you are a novice at this or the drive is under warranty, put it all back together again; believe me, it's cheaper to let somebody else do it in your case.

Remove a number of Philips head screws that hold the pcb down.

Remove the board and put it aside.

**Getting at the works**

Look closely at the metal frame and "works" you have left and you will see that it comprises two major assemblies. One assembly is mainly brown plastic and diecast and carries the business part of the drive, the other is a pressed metal frame that carries the transformer and a few minor bits and pieces.

We have to remove the actual drive from the pressed-metal frame. Do that by removing four Philips head screws that go from lugs on the side of the pressed-metal frame to the brown plastic of the subframe. Lift and slide out the subframe, being very gentle and very careful not to bump the read-write head (a black plastic thing like a wide clothes peg). Put the pressed-metal frame aside.

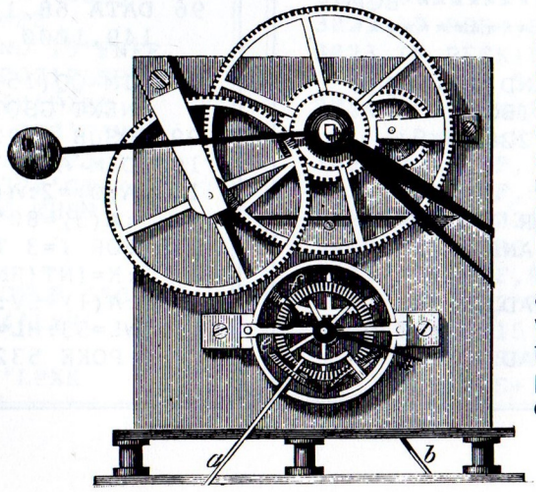
## Identifying the head drive

Place the subframe, bottom down, in front of you, disk inserting slot closest to you. Identify the read-write head (the black hinged plastic thing in the middle). Keep fingers, tools and anything else away from the head for the rest of the time the drive is open. To the right of the head assembly you will see a thin metal ribbon running around and between two metal cams. One cam has two "turrets" on top: that is the culprit. It's the cam that has been slipping. It's the one we're going to stop and stop good.

## Fixing the problem

The turreted cam is mounted on the stepping motor shaft. Before we can do anything else, we have to remove the metal ribbon. This is secured to the turreted cam by a small Philips head screw on the side. Rotate the cam without putting pressure on the ribbon until the holding screw is accessible to the screwdriver. Now unhook a helical spring that keeps the non-turreted cam tensioned, loosen and take off the ribbon holding screw from the turreted cam and let the ribbon hang free.

Turn the sub assembly upside down, making sure you don't put pressure on the head or guides, and locate the stepping motor. This is described in the earlier section titled "Finding the adjustment". Remove the two stepping motor clamping screws and gently pull off the stepping motor from the sub-assembly. You will find the turreted cam on the end of the motor shaft. Use the bearing puller, if you have one, to pull the cam up from the shaft. If you don't have the puller use the two flat bladed screwdrivers working on opposite sides of the shaft to prise the cam upwards. Don't pull the cam right off, one half to two thirds of its thickness should be free of the shaft but the cam should still be solid on the shaft. Clean the well formed by the cam centre and the top of the shaft with clean Shellite (R) or similar, place a drop of Loctite (R) in the well and press the cam down to its original depth on the shaft. Don't be too slow at doing this and don't hammer the cam down. Hard thumb pressure with the motor resting on a solid surface should be enough. If you're worried about it, try moving the cam a few times without putting the Loctite (R) in the well just to make sure you know what you are doing. In the process of moving the cam you may find that it rotates relative to the shaft. That is no problem. The slotted lugs have enough adjustment to take care of a full "step" of adjustment. Avoid scratching any metal surfaces or otherwise marking things by being too heavy-handed. If pushing the cam down is very difficult try making some sort of lever system with a piece of wood. When the cam is in position put the motor back on its mounting screw, leave the screws finger tight. Replace the ribbon on the cams and rehook the tensioning springs. A pair of tweezers often helps in handling the ribbon. Make sure the ribbon rests flat on the cams and hasn't been forced out of position by the final tightening of the screw. A very small amount of Loctite (R) will seal the screw. In seconds the Loctite (R) that got between the stepping motor shaft and the turreted cam will have set to prevent cam movement. It won't prevent future removal of the cam but will stop it turning. Wipe off any excess Loctite (R) that has remained liquid.




Put the sub assembly back into the pressed metal frame, reinstall the pcb and replug the sockets that feed it. Now go back to the section above titled "The alignment" and work your way through the procedure to "... End of job". You now have an aligned drive which should stay aligned for many years. One word of warning, though. Temperature has an effect on the state of alignment so it might be wise to give the machine the treatment for a while.

## Heat treatment

Put the assembled machine back in the plastic case without either fitting the metal-frame-to-case screws or the case-closing screws. Close the case and put the drive in its usual place. Connect up to the computer, put in the commercial disk, have the test program in memory and run it. Watch the drive running for anything up to 20 minutes. It won't do any harm if you haven't got dirt and dust on the disk or head. If the drive starts giving read errors again do a realignment with the drive hot.

## Conclusion

It's hard to imagine why neither the sub assembly manufacturer nor Commodore take the simple action of some Loctite (R) or similar chemical bonding trick between the shaft and cam. It would save a lot of trouble. Prevention is always so much better than cure. I can't see it increasing the equipment price by more than cents. Alternatively a small amount of keying would work wonders. I suppose, in the end, it's fun to get around the built in faults provided free of charge by our equipment manufacturers. □

# Merlyn for the Commodore 64

In this game, you are transformed into the great wizard Merlyn of King Arthur's court. Nimue, an evil fairy aiming to lock you up for the rest of eternity in a crystal cave, is chasing you through an enchanted forest (Nimue is very inconspicuous, which is why you never see her). Your defences are slowly weakening, but the process can be delayed by retrieving the bottles of magic potion that you earlier scattered among the trees in case of such an emergency. There are some boulders that block your path, but they can easily be disintegrated by your powerful fire balls. However, shooting at the boulders costs you points (this is to deter trigger-happy fingers).

You must collect as many bottles of potion as possible, because if you leave any, Nimue will take them for herself, weakening you further (you lose two points per bottle). If you don't think that you can get all of the bottles in the allotted time, you may use your transport spell, but you have only limited use of it. When this spell is enacted, you will instantly be transported out of the forest and all of your magic potion will disappear so Nimue cannot devour it. At the beginning of the game, you have three uses of this spell, but for every hundred points you earn, you receive another spell.

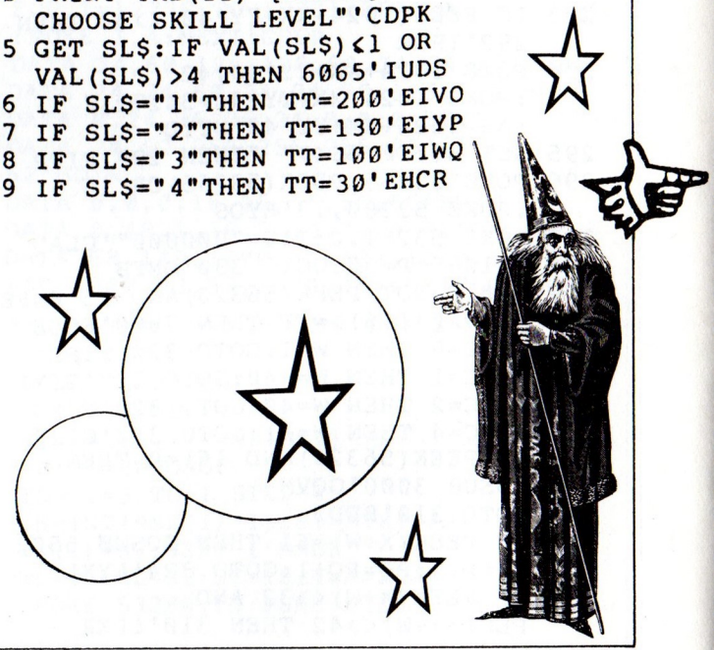
For a slightly greater challenge, omit the REM from line 130. This will blank the screen while the maze is being generated. To change the program so you begin each round by pressing the fire button instead of the space bar, change line 295 to WAIT 56464,16,16. You need a joystick in port two. When you come across an "*", don't go through it unless you wish to enact the transport spell. There are further directions within the program. □

```
0 REM **** MERLYN ****'BOGB
1 POKE 53281,0:POKE 53280,0'CPLD
2 PRINT"[CLEAR,WHITE,DOWN11]";TAB(9);
  "JUST A SEC...[DOWN,LEFT7]
  SETTING UP CHARACTERS"'CEWQ
5 PRINT CHR$(142)'CFVF
10 POKE 52,48:POKE 56,48:CLR'DMNB
11 REM***BY SHEILA NOOJIBAL*******'BB
   JE
12 REM******2332 MARCY************'BC
   AE
13 REM******EVANSTON ILL,
    60201***'BBYG
14 REM******312-866-8537*********'BCLG
15 REM*******************************'
   BFWH
20 POKE 56334,PEEK(56334)AND 254'DQQD
30 POKE 1,PEEK(1)AND 251'DIBC
40 FOR I=0 TO 511:POKE I+12288,
   PEEK(I+53248):NEXT'IWNJ
50 POKE 1,PEEK(1)OR 4'DGCE
60 POKE 56334,PEEK(56334)OR 1'DORG
70 POKE 53272,(PEEK(53272)AND
   240)+12'EUBJ
80 FOR I=12552 TO 12559:READ A
   :POKE I,A:NEXT'GSFL
81 FOR I=12288 TO 12295:READ A
   :POKE I,A:NEXT'GSIM
```

```
82 FOR I=12784 TO 12791:READ A
   :POKE I,A:NEXT'GSKN
83 FOR I=12512 TO 12519:READ A
   :POKE I,A:NEXT'GSWO
84 FOR I=12776 TO 12791:READ A
   :POKE I,A:NEXT'GSLP
90 DATA 24,60,126,126,60,24,24,24'BABK
91 DATA 24,24,60,24,24,60,126,255'BAEL
92 DATA 0,24,36,36,24,0,0,0'BTVL
93 DATA 24,62,255,255,255,254,126,
   62'BDTN
94 DATA 0,0,0,16,16,56,56,56'BUKN
95 DATA 0,48,1,76,65,0,24,0'BTIO
96 DATA 68,149,1000,45,198,1000,68,
   149,1000,43,52,1000,45,198,250'BHEW
97 DIM QQ(15):FOR X=1 TO 15:READ QQ(X)
   :NEXT'GSQT
99 GOSUB 6000'BEHP
100 DIM A(3)'BEYV
110 A(0)=2:A(1)=-80:A(2)=-2
    :A(3)=80'GAOF
115 FOR I=3 TO 1 STEP-1
    :K=INT(RND(I)*I):SV=A(K):A(K)=A(I)
    :A(I)=SV:NEXT I'NMBS
120 WL=33:HL=32:SC=1024:A=SC+81
    :POKE 53280,13:POKE 53281,0'HOGK
```

```
 130 PRINT"[CLEAR]":REM POKE53265,
     PEEK(53265)AND239'CDPG
 140 FOR I=1 TO 23'DEGB
 150 PRINT"!!!!!!!!!!!!!!!!!!!!!!!!!!!!
     !!!!!!!!!!!!"'BAHG
 160 NEXT I'BBCB
 200 REM GENERATE MAZE'BMHA
 210 POKE A,4'BDFX
 220 J=INT(RND(1)*4):X=J'FKWD
 230 B=A+A(J):IF PEEK(B)=WL THEN POKE
     B,J:POKE A+A(J)/2,HL:A=B
     :GOTO 220'MHDO
 240 J=(J+1)*-(J<3):IF J<>X THEN
     230'JPFJ
 250 J=PEEK(A):POKE A,HL:POKE A+53272,0
     :IF J<4 THEN A=A-A(J)
     :GOTO 220'LGKO
 260 FOR DD=1 TO VAL(SL$)*RR'FKJH
 270 XX=INT(38*RND(1)):YY=INT(22*RND(1)
     +1)'JUKN
 272 IF PEEK(1024+XX+YY*40)<>32 THEN
     270'IRBO
 275 POKE 1024+XX+YY*40,28
     :POKE 1024+XX+YY*40+54272,12
     :NEXT DD'KKCW
 280 FOR DD=1 TO QQ'DFYH
 281 XX=INT(38*RND(1)):YY=INT(22*RND(1)
     +1)'JUKP
 282 IF PEEK(1024+XX+YY*40)<>32 THEN
     281'IRDP
 285 POKE 1024+XX+YY*40,61
     :POKE 1024+XX+YY*40+54272,1
     :NEXT DD'KJYX
 290 POKE 1065,32:POKE 1981,32
     :POKE 53280,7'DXTL
 291 IF BB<0 THEN 295'DGGJ
 292 XX=INT(38*RND(1)):YY=INT(22*RND(1)
     +1)'JUKR
 293 IF PEEK(1024+XX+YY*40)<>33 THEN
     292'IRGR
 294 POKE 1024+XX+YY*40,42
     :POKE 1024+XX+YY*40+54272,7
     :AS=1024+XX+YY*40'NTYD
 295 GET S$:IF S$<>" "THEN 295'FIFP
 296 POKE 53265,PEEK(53265)OR 16
     :POKE 53280,13'EYOS
 297 POKE 53281,0:TI$="000000"'CLAQ
 300 X=1065:P=30:GOTO 330'DNFB
 310 W=0:C=NOT PEEK(56320)AND 15'FNFE
 311 IF VAL(TI$)>=TT THEN 7000'FLSE
 312 IF C=8 THEN W=1:GOTO 320'FIPE
 315 IF C=1 THEN W=-40:GOTO 320'GJYI
 316 IF C=2 THEN W=40:GOTO 320'FJEJ
 317 IF C=4 THEN W=-1:GOTO 320'GIBK
 318 IF(PEEK(56320)AND 16)=0 THEN
     GOSUB 3000'GQVM
 319 GOTO 310'BDDI
 320 IF PEEK(X+W)=61 THEN GOSUB 5502
     :P=P+5:PQ=PQ+1:GOTO 324'LYXL
 321 IF PEEK(X+W)<>32 AND
     PEEK(X+W)<>42 THEN 310'LPXK
 324 POKE X,32'BECE
 325 IF PEEK(X+W)=42 THEN POKE X,32
     :POKE X+W,0:BB=BB-1:GOTO 501'LADQ
 330 X=X+W:POKE X,0:POKE X+54272,3'FQEH
 335 IF X=1981 THEN 500'DINI
 340 GOTO 310'BDDC
 500 ZX=QQ-PQ:ZX=ZX*2:P=P-ZX
     :IF P<0 THEN 7000'JYGL
 501 PRINT"[CLEAR,DOWN7,WHITE]
     YOU ESCAPED"'BAVE
 502 IF EP<=P THEN BB=BB+1
     :EP=EP+100'IQWK
 505 PRINT"[YELLOW]YOUR SCORE IS [CYAN]
     ";P;"[WHITE]"'BDQK
 506 PRINT"YOU HAVE ";'BBJI
 507 PRINT;BB" TRANSPORT SPELLS
     REMAINING"'BDKP
 510 X=1:POKE 54278,240'CMPD
 515 POKE 54296,15:POKE 54276,17
     :POKE 54277,96'DBVM
 520 H=QQ(X):X=X+1:L=QQ(X):X=X+1
     :D=QQ(X):X=X+1'JHRP
 521 POKE 54273,H:POKE 54272,L'CPRG
 522 FOR WW=D-50 TO D-20:POKE 54278,240
     :NEXT'HTFL
 523 FOR WT=1 TO D:NEXT:POKE 54273,0
     :POKE 54272,0:POKE 54276,0'HEYO
 524 IF X<16 THEN 515'DGMI
 525 FOR TQ=1 TO 200:NEXT:POKE 54276,0
     :POKE 54273,0:POKE 54272,0'HGVQ
 530 RR=RR+2:QQ=QQ+2'ELAH
 531 TT=TT-10'CGOG
 534 PQ=0'BDFH
 535 GOTO 115'BDGI
2000 SL=2'BDFU
2001 RETURN'BAQU
3000 REM SHOT ROUTINE'BLRX
3001 P=P-5:IF P<0 THEN 7000'FKBB
3002 W=15-(PEEK(56320)AND 15)'EOVC
3004 IF W=1 THEN DI=-40:GOTO 3020'GLPF
3005 IF W=8 THEN DI=1:GOTO 3020'FKGF
3010 IF W=2 THEN DI=40:GOTO 3020'FLBB
3015 IF W=4 THEN DI=-1:GOTO 3020'GKSH
3016 GOTO 3002'BECD
3020 FF=X+DI:FC=FF+54272
     :GOTO 3022'FUGF
3021 POKE FF,32:FF=FF+DI:FC=FC+DI'FTKG
3022 IF PEEK(FF)=32 THEN 3027'EKED
3023 IF PEEK(FF)=28 THEN POKE FF,32
     :GOSUB 5000:RETURN'HRTH
3024 IF PEEK(FF)=61 THEN POKE FF,32
     :P=P-5:RETURN'IQJJ
3026 POKE FF,33:RETURN'CGYF
3027 POKE FF,62:POKE FC,7'CKPH
3029 GOTO 3021'BEDH
5000 REM FIRE SOUND'BJLA
5001 POKE FF,62:POKE FC,8'CKQB
5002 S=54272'BGJB
5004 FOR G=15 TO 0 STEP-1:POKE S+24,G
     :POKE S+4,129:POKE S+5,15
     :POKE S+1,40'NFFP
```

```
5005 POKE S,200:NEXT'CGYE
5006 POKE S+4,0:POKE S+5,0'EJFH
5011 POKE FF,32:POKE FC,0'CKFC
5012 RETURN'BAQA
5500 REM PICK UP BOTTLE SOUND'BRXH
5501 PQ=PQ+1'CFGF
5502 S=54272:FOR E=S TO S+28:POKE E,0
     :NEXT'HRUM
5504 POKE 54296, 15 :POKE 54277, 212
     :POKE 54278, 240'DDGN
5506 POKE 54276, 33 :POKE 54273, 123
     :POKE 54272, 135'DDXP
5508 FOR T=1 TO 30 :NEXT
     :POKE 54276, 32:FOR T=1 TO 20
     :NEXT'JUCT
5510 FOR E=S TO S+28:POKE E,0
     :NEXT'GKEJ
5512 RETURN'BAQF
6000 POKE 53281,0:POKE 53280,0'CPLC
6001 PRINT"[CLEAR,DOWN2]"TAB(17)"
     [WHITE]M[RED]E[CYAN]R[PURPLE]L
     [GREEN]Y[YELLOW]N[WHITE]"'CDCF
6005 PRINT"[DOWN3]IN THIS GAME YOU
     ARE MERLIN THE "'BARM
6007 PRINT"GREAT WIZARD OF KING
     ARTHUR'S COURT."'BAAP
6008 PRINT"YOU'VE TO COLLECT THE
     BOTTLES OF MAGIC"'BAMQ
6009 PRINT"POTION THAT YOU DROPPED
     WHEN FLEEING"'BACR
6010 PRINT"THE FAIRY NIMUE. YOU MUST
     HURRY THOUGH,"'BARK
6011 PRINT"BECAUSE IF NIMUE CATCHES
     UP WITH YOU"'BAJK
6012 PRINT"YOU'LL BE LOCKED UP IN THE
     CRYSTAL CAVE"'BAKL
6013 PRINT"FOR THE REMAINDER OF
     TIME."'BACJ
6028 INPUT"[DOWN2]FURTHER
     INSTRUCTIONS ?";G$'BDFP
6029 IF G$<>"Y"THEN 6050'EGMN
6030 PRINT"[CLEAR,DOWN]
     USING A JOYSTICK IN PORT 2 YOU
     MUST "'BADL
6032 PRINT"MANUEVER MERLYN THROUGH
     THE FOREST."'BAQN
6033 PRINT"TO GET POINTS YOU PICK UP
     THE BOTTLES"'BAOO
6034 PRINT"SCATTERED THROUGHOUT THE
     MAZE."'BAIO
6035 PRINT"TO FIRE AT ROCKS BLOCKING
     YOUR WAY"'BAVP
6036 PRINT"PRESS THE FIRE-BUTTON AND
     MOVE THE"
6037 PRINT"JOYSTICK IN THE DIRECTION
     YOU WANT TO"'BASS
6038 PRINT"FIRE. SHOOTING AT THE
     BOTTLES COSTS YOU"'BAJU
6039 PRINT"10 POINTS BUT YOU START
     OFF WITH 3 FREE"'BAPU
6040 PRINT"SHOTS. YOU HAVE 3
     TRANSPORT SPELLS"'BAJM
6041 PRINT"BUT EARN MORE FOR EACH
     HUNDRED"'BABL
6042 PRINT"GET 100 PTS. GETTING
     CAUGHT IN THE MAZE"'BALO
6043 PRINT"AFTER YOUR TIME IS UP OR
     HAVING A SUB-";'BBQP
6044 PRINT"SCORE DROP BELOW 0 ENDS
     THE GAME"'BAQO
6045 PRINT"TO ACTIVATE TRANSPORT YOU
     MUST COLLECT":PRINT"THE *"'CBEU
6046 PRINT"IT TAKES A WHILE TO
     GENERATE THE MAZE"
     :PRINT"WHEN THE SCREEN";'CCSX
6047 PRINT"CHANGES FROM "
     :PRINT"[L. GREEN,RVS] [RVOFF,
     WHITE] TO [YELLOW,RVS] [RVOFF,
     WHITE] YELLOW":PRINT"USE THE";
     'DDDW
6048 PRINT"SPACE BAR TO BEGIN THE
     GAME":PRINT"PRESS SPACE BAR TO
     CONTINUE"'CBKA
6049 GET A$:IF A$<>" "THEN 6049'FJUQ
6050 PRINT"[CLEAR]"'BATE
6053 PRINT TAB(14)"SKILL[SPACE2]
     LEVELS"'CDTL
6055 PRINT TAB(14)"[DOWN2]
     TIME IN MAZE"'CDPN
6056 PRINT TAB(10) "[DOWN3]
     LEVEL 1 - TWO MINUTES"
6057 PRINT TAB(10) "[DOWN2]
     LEVEL 2 - 90 SECONDS"'CDXO
6058 PRINT TAB(10) "[DOWN2]
     LEVEL 3 - ONE MINUTE"'CDES
6059 PRINT TAB(10) "[DOWN2]
     LEVEL 4 - 30 SECONDS"'CDTS
6060 PRINT TAB(11)"[DOWN2]
     CHOOSE SKILL LEVEL"'CDPK
6065 GET SL$:IF VAL(SL$)<1 OR
     VAL(SL$)>4 THEN 6065'IUDS
6066 IF SL$="1"THEN TT=200'EIVO
6067 IF SL$="2"THEN TT=130'EIYP
6068 IF SL$="3"THEN TT=100'EIWQ
6069 IF SL$="4"THEN TT=30'EHCR
```



# Giving your Commodore a voice

## Voice Master Review

by Andrew Farrell

Technology certainly travels forwards in leaps and bounds. It's now possible to record your own voice on a floppy disk. Throw away your cassette players, burn your records, join the liberated world of digitized voice synthesis.

Voice Master is certainly a very novel product, even if it does have little practical use. At the Consumer Electronics Show in Chicago, it was selected as one of the most innovative products of 1984. The package makes it sound very promising. "A high intelligibility speech synthesizor that allows your computer to speak in 'your own voice'".

Inside you'll find a reasonably sized owners manual, a small microphone, the Voice Master cartridge and the software on disk. The cartridge connects to the user port and is solidly constructed. A small socket on the right hand side allows connection of the microphone. On the top there is a gain control and level indicator.

### Operation

Voice Master is a voice digitizer, that is a device which can transfer speech into digital signals which can then be stored by computer. The recorded speech can then be replayed without the use of any additional hardware. This is very useful for inclusion within your own programs that can then be passed on to others without any of your hardware. The speech is replayed through the standard music channels.

Two versions of the Voice Master software are included. One allows you to Edit, Save, Load and Playback, whilst the other is a cut down version that only allows you to Load and Playback.

Additional commands are added to BASIC by the full version. The first of these is LEARN. You are allowed to enter up to an eight second recording at one time, with up to 63 different recordings. To replay a recording you would use the SPEAK command. It is also possible to alter the speed of playback with the SPEED command and the rate at which the speech is sampled with the RATE command.

The rate may vary from 5000 to over 12,000 bits per second. Of course the greater the sampling rate the better the quality and the greater the memory overhead. Other commands include PAUSE, SCREEN and VOLUME.

A complete vocabulary may be saved to disk and retrieved at a later date using the PUT and FIND commands. I could imagine the ease with which this feature could be added to other application programs to enable various languages to be spoken by the computer.

The quality of speech reproduced was very good, although getting a perfect recording requires the right conditions. Perfect peace and quiet is the first, a little patience is also handy. It may be necessary to adjust the gain control and vary the position in which you hold the microphone.

Several demonstration programs were included on the disk. The most interesting of these produced a very lively screen display that reflected the frequency content of whatever was spoken into the microphone at that time. This also allowed you to adjust the gain level to compensate for any background noises.

Our review copy came from PELMEX, PO Box 55, Seven Hills, 2147. Don't be surprised if next time you ring the office and nobody is in, the only response will be a digitized recording controlled from a spare Commodore 64. □

## PROGRAMMING

```
6070 BB=3:RR=5:EP=100:QQ=20'ESWM
6071 RETURN'BAQG
7000 PRINT"[CLEAR,DOWN,CYAN,DOWN2]
     TOO BAD...GAME OVER"'BAIF
7010 PRINT"[DOWN2,YELLOW]
     YOUR SCORE WAS ..."P'BBNG
7500 POKE 54296,15:POKE 54273,5
     :POKE 54272,71'DAKK
7510 FOR T=1 TO 900:NEXT:POKE 54276,0
     :POKE 54273,0:POKE 54272,0'HFWP
7515 POKE 54296,15:POKE 54277,53
     :POKE 54278,69'DBXR
7520 POKE 54276,33:POKE 54273,3
     :POKE 54272,244'DBBN
7525 FOR T=1 TO 900:NEXT:POKE 54276,0
     :POKE 54273,0:POKE 54272,0'HFWV
7530 POKE 54296,15:POKE 54277,53
     :POKE 54278,69'DBXO
7533 POKE 54276,33:POKE 54273,2
     :POKE 54272,163'DBAR
7536 FOR T=1 TO 900:NEXT:POKE 54276,0
     :POKE 54273,0:POKE 54272,0'HFWX
7537 FOR WW=1 TO 100:GET A$:NEXT'FKQT
7600 INPUT"[L. GREEN,DOWN4]
     PLAY AGAIN (Y/N)[SPACE2]?";
     Y$'BDPL
7800 IF Y$="Y"THEN PRINT"[CLEAR,WHITE]
     ":GOSUB 6053:P=0:GOTO 115'HOVP
7805 IF Y$="N"THEN END'ECWP
7807 GOTO 7600'BEKP
```

*

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Sydney Users Association
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48 Hercules St
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(095) 27 3954

# Sound effects library for the Vic 20


Do you want to keep a library of sound effects? Sounds can greatly enhance any program, whether its a game or word processing. The BASIC statements that create the sounds can be organized to find them easily and hear the results. It can also be possible to test a variety of changes to discover what happens.

Sound Library provides an example of how sound-creating BASIC statements can be displayed while the sound is made. Several sound effects for such standards as laser blasts and dropping bombs are included as well as some different ones.

The general approach is to use a menu to select the desired sound. The line numbers for each group of statements are used in a subroutine to list them. A technique known as dynamic keyboard handles the listing by poking codes into the keyboard buffer.

To make changes, press RUN/STOP after the sound finishes. Then move the cursor up to change the statements. When you rerun the program, the changes will be in effect. For example, try modifying the bomb by changing the sound start from 230 to 220. □

**VIC 20 Sound Library**

```
10 REM  SOUND EFFECTS LIBRARY
20 PRINT CHR$(147)" SOUND LIBRARY",,,
   "[SPACE2]1 RACING CAR"
30 PRINT"[SPACE2]2 LASER BLAST "
   :PRINT"[SPACE2]3 TORP BLASTS
   [SPACE4]":PRINT"[SPACE2]
   4 UFO LANDING[SPACE3]"
40 PRINT"[SPACE2]5 OLD PLANE FLYAWAY",
   "[SPACE2]6 BOMB[SPACE3]","[SPACE2]
   7 SIREN",,,,"[SPACE4]PICK ONE"
50 GET A$:IF A$=""THEN 50
60 ON VAL(A$)GOTO 100,200,300,400,500,
   600,700
70 POKE 214,15:PRINT" PRESS ANY KEY"
80 GET A$:IF A$=""GOTO 80
90 GOTO 20
100 L1=110:L2=130:GOSUB 2000
110 POKE 36878,15
120 FOR N=135 TO 200 STEP.5
    :POKE 36875,N:POKE 36876,N
130 POKE 36875,0:POKE 36876,0:NEXT
140 GOTO 70
200 L1=210:L2=240:GOSUB 2000
210 POKE 36878,15
220 FOR N=1 TO 6:S=241:POKE 36876,S
    :POKE 36876,0:S=S-1:POKE 36876,S
230 S1=135:POKE 36875,S1:POKE 36875,0
    :S1=S1+1:POKE 36875,S1
240 POKE 36875,0:POKE 36876,0:NEXT N
250 GOTO 70
300 L1=310:L2=320:GOSUB 2000
310 POKE 36878,15
320 FOR N=1 TO 3:FOR S=241 TO 135
    STEP-3:POKE 36875,S:POKE 36875,0
    :NEXT S:NEXT N
330 GOTO 70
400 L1=410:L2=430:GOSUB 2000 ANY KEY
410 POKE 36878,15
420 FOR N=1 TO 5:FOR S=200 TO 220+N*2
    :POKE 36876,S:NEXT S:NEXT N
430 POKE 36876,0:POKE 36878,0
440 GOTO 70
500 L1=510:L2=520:GOSUB 2000
510 FOR V=13 TO 0 STEP-.02
    :POKE 36878,V
520 POKE 36877,212:POKE 36877,0:NEXT
530 GOTO 70
600 L1=610:L2=630:GOSUB 2000
610 POKE 36878,15
620 FOR S=230 TO 128 STEP-1
    :POKE 36876,S:FOR N=1 TO 20:NEXT N
    :NEXT S
630 POKE 36876,0:POKE 36877,200
    :FOR N=15 TO 0 STEP-.2
    :POKE 36878,N:NEXT N:POKE 36877,0
640 GOTO 70
700 L1=710:L2=730:GOSUB 2000
710 POKE 36878,15
720 FOR N=1 TO 5:POKE 36875,200
    :FOR J=1 TO 500:NEXT J
730 POKE 36875,0:POKE 36876,200
    :FOR J=1 TO 500:NEXT J
    :POKE 36876,0:NEXT N:POKE 36878,0
740 GOTO 70
2000 PRINT CHR$(147)CHR$(5)"RETURN"
     :PRINT"LIST";L1;"-";L2;
```

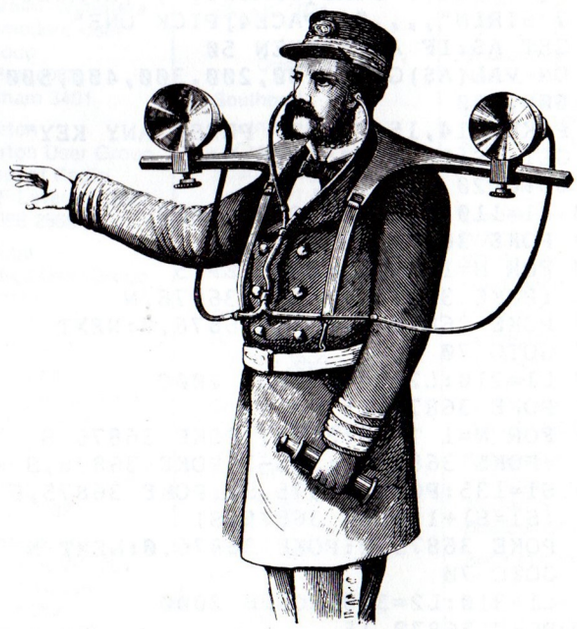
# Sound Effects Library

```
2010 POKE 631,19:POKE 632,17
     :POKE 633,31:POKE 634,13
2015 POKE 635,19:POKE 636,13
     :POKE 198,6:END
```

---

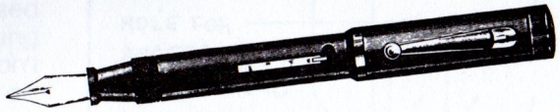
```
380 REM EYES
390 C=0:ON K GOSUB 410,440,470
400 K=FN R(3):C=2:ON K GOSUB 410,440,
    470:RETURN
410 REM EYES RIGHT
420 CIRCLE C,362,565,20,20
430 CIRCLE C,715,560,20,20:RETURN
440 REM EYES LEFT
450 CIRCLE C,310,560,20,20
460 CIRCLE C,668,560,20,20:RETURN
470 REM EYES CENTER
480 CIRCLE C,335,560,20,20
490 CIRCLE C,690,560,20,20:RETURN
500 REM MOVING HEAD
510 P=PEEK(36864):PV=PEEK(36865):P1=P
    :P2=PV:S=1
520 FOR Z=1 TO FN R(12)+9
530 H=FN R(3)-2:IF P1+H<0 THEN 530
540 POKE 36864,P1+H:IF
    ABS(P1+H)<ABS(P+5)THEN P1=P1+H
770 FOR X=1 TO 9:R=FN R(255)
    :POKE 36879,R:GOSUB 350:NEXT
780 POKE 36879,Q:RETURN
790 REM LAB SOUNDS
800 S1=FN R(25)+210:Z=FN R(7)
    :FOR Y=1 TO Z
810 FOR X=S1 TO S1-60 STEP-1
    :SOUND X,X+10,0,0,15:NEXT X
820 FOR X=S1-60 TO S1:SOUND X,X+10,0,
    0,15:NEXT X
830 NEXT Y:RETURN
840 REM SPOOKY ORGAN
850 SOUND 207,227,236,0,13:GOSUB 370
860 SOUND 207,227,235,0,13:GOSUB 370
870 SOUND 204,225,237,0,13:GOSUB 370
880 FOR X=13 TO 0 STEP-1:GOSUB 360
    :SOUND 204,225,236,0,X:NEXT X
890 SOUND 217,232,239,0,15
900 FOR X=1 TO FN R(5)+4
    :SOUND 217,232,239,0,14
910 GOSUB 360:SOUND 217,232,239,0,15
920 GOSUB 360:NEXT X:RETURN
930 REM CALL THE EFFECTS
940 FOR A=1 TO 8
950 ON A GOSUB 380 ,680,300,500,750,
    300,630,790,840
960 NEXT A:GOTO 970
970 REM RANDOM SELECTION OF EFFECTS
980 R=FN R(8)
990 ON R GOSUB 300 ,380,500,630,680,
    750,790,840
1000 GOTO 970
```

```
550 V=FN R(3)-2
560 POKE 36865,P2+V:IF
    ABS(P2+V)<ABS(PV+5)THEN P2=P2+V
570 GOSUB 580:NEXT Z:POKE 36864,P
    :POKE 36865,PV:RETURN
580 S=VAL(RIGHT$(TI$,1)):S1=1
    :IF S/2=INT(S/2)THEN S=2
590 ON S GOTO 600,610
600 SOUND 220,221,0,0,15:GOTO 620
610 SOUND 222,223,0,0,15
620 GOSUB 360:RETURN
630 REM RANDOM SOUNDS
640 FOR X=1 TO FN R(40)+15
650 FOR Y=1 TO 3:S(Y)=FN R(255):NEXT Y
660 SOUND S(1),S(2),S(3),0,15
670 FOR DEL=1 TO FN R(350)+50:NEXT DEL
    :NEXT X:RETURN
680 REM MOUNTAIN KING
690 FOR X=1 TO KT:SOUND N(X),0,0,0,15
    :GOSUB 360:NEXT X
700 SOUND 0,0,0,0,0:RETURN
710 DATA 170,179,183,191,198,183,198,
    198
720 DATA 195,179,195,195,191,174,191,
    191
730 DATA 170,179,183,191,198,183,198
740 DATA 213,207,198,183,198,207,207,
    207,207,-1
750 REM COLORS
760 Q=PEEK(36879)
```



# Programmers' Notebook

**An occasional assortment of hints and tips collected by Phil Campbell.**



Sometimes flashes of programming brilliance jump out from nowhere, but usually plain old perseverance, trial and error or luck reveal little tricks and techniques which make life easier for everyone. This column is designed as a trading post for such ideas. This month I will start the ball rolling with a few little snippets that I have collected, but please don't leave it all up to me! Share your bright ideas (for the VIC, 64, 16 or whatever else Commodore releases this month) by sending them to me via the address on page 1 of this magazine. All published tips will be acknowledged, so you might even get to see your name in print.

## HINT 1: Labelled subroutines

Programs which jump to subroutines all over the place are great fun to write, but rather tedious to decipher when you look back on them the next day. However, there is a very neat way to document your programs without resorting to too many REM statements. Try this:

```
10 GOSUB 20 WHICH PRINTS HULLO: END
20 PRINT "HULLO": RETURN
```

Surprised that you didn't get an error message? After executing the GOSUB instruction, BASIC returns to either the next colon, or the next line. Anything between the GOSUB and the colon is completely ignored. This technique not only uses less memory than a REM, but allows additional commands to be placed on the same line as comment. Remember too that a similar technique can be used in any unexecuted sections of your program: there is no need to use a REM directly after a GOTO or a THEN, or on any program lines which are always jumped.

## HINT 2: PRINT-AT routine

Many versions of BASIC include a command called PRINT@, which prints the desired message at any specified screen location, doing away with all those reverse Q's and other nasty characters which pollute Commodore PRINT statements. However, this desirable function is almost implemented in the KERNEL ROM of both the VIC and 64, and can be activated quite easily. Try this:

```
3510 X=5: Y=10 M$="HI THERE HONEY"
20 GOSUB50 PRINTAT: END
50 POKE781,X: POKE782,Y: POKE783,0
60 SYS65520: PRINT M$: RETURN
```

The subroutine simply loads the print co-ordinates into the X and Y registers before jumping to the PLOT routine at ROM address 65520. The same addresses apply to both the Vic and 64.

## HINT 3: No more RUNDYs

No doubt you have come across the infamous RUNDY statement; it's the one you enter whenever you are in a hurry, and just happen to type RUN when the cursor is positioned on top of READY. Hit RETURN, and what happens? Naturally, you get an UNDEF'D STATEMENT ERROR message. This gets very frustrating, especially if you are the type who screams around the screen with the cursor in a blind rush. Your problems are easily solved . . . simply make sure that the first line of your program is on line 0. Even '0 REM' will do the trick. Now, as if by magic, your computer will not mind a bit if you tell it to RUNDY, or even to RUNTY, or RUNAWAY. Strange.

## Easyscript and Interfacing

Daisy wheel printers are getting cheaper all the time, and there are some especially good deals going on the 'TOWA PRINTEXT RI', otherwise known as the 'UCHIDA'. If you can't find one of these for less than $500, then you aren't really trying. However, using all the fancy features like automatic underscoring, shadow and bold printing with Easyscript takes a fair bit of mucking around. Perhaps my trials and tribulations will assist you.

The first point to note is that I am using a TURBOPRINT parallel interface. This gadget converts Commodore type serial signals into something intelligible to the CENTRONICS type printer. The device operates in various modes, such as LIST mode, and TRANSPARENT mode. Modes are selected by choosing the appropriate secondary address, in a similar manner to the Grappler interface reviewed in a recent issue. However, choosing the right mode from Easyscript is not quite so simple. Follow these rules:

1. When EASYSCRIPT is loaded, choose printer type 1 (MX-80).
2. Set the secondary address with the format command F3/sa17.
3. Linefeeds are no longer automatic. They must be generated with the format command F3.lf1.
4. Control characters for the fancy tricks are set as follows:
F3/0=27:1=95:2=82:3=87:4=81:5=38
5. Auto underscore is now obtained simply by inserting F1/0/F1/1 before the text to be underlined, and F1/0/F1/2 afterwards. Similarly, shadow print is turned on with F1/0/F1/3, and off with F1/0/F1/5, while bold print is obtained with F1/0/F1/4, and cancelled with F1/0/F1/5.

It all looks so simple when you finally work it out! □

# 1530 Datasette and the Commodore C64

by Denis Hare

Santa Claus delivered many C64s this Christmas to families without any previous experience with a home computer. The first problem the new owner is likely to encounter will be ?LOAD ERROR, when trying to LOAD from the Datassette. This will most likely occur when trying to load a program saved on a friend's system.

The 153Ø Datassette small manual (operating instructions) on page 3 details that it is important to keep the Datassette at least two feet (61 cm for the younger readers) away from the TV, because radio emissions from the TV can interfere with the correct operation of the Datassette. This is correct, especially when loading long machine language routines. However, many load problems occur because of Datassette head alignment.

## Azimuth head alignment

The read/write (R/W) head on a Datassette can be out of alignment and cause ?LOAD ERROR especially when loading programs prepared on another Datassette. The following Datasette Azimuth R/W Head Alignment procedure can be carried out by the average person with little trouble, providing care is exercised.

**Step 1.** Remove any tapes from the Datasette.
**Step 2.** Press play on the Datassette. Place a mini flat tip screwdriver (available from Dick Smith Electronics CAT T-4010 for 55c) in the R/W head alignment hole (see figure 1) and turn the azimuth screw a quarter turn either clockwise or counterclockwise. Take care to remember where your Datassette was adjusted so you can return to your original setting, if required. A slot cut into the top of the handle of the mini screwdriver helps.
**Step 3.** Place a tape in the Datassette and LOAD the program. If a ?LOAD ERROR appears go a quarter turn the opposite direction from the first adjustment. Experimenting with the azimuth adjustment should reward you with a correct LOAD.

To save programs you should set your R/W head to an adjustment that allows commercial programs to LOAD with no problems. This will ensure that all your programs, both commercial and otherwise, load correctly.

## Alignment using an oscilloscope

For those who are a little technically minded and have access to an oscilloscope, the azimuth adjustment is much easier.

**Step 1.** Using a Philips head screwdriver, remove the four screws from the bottom of the Datassette.
**Step 2.** Separate the case. The Datassette hardware is mounted to the top section of the case.
**Step 3.** Locate the Test Point (TP) on the component side of the Printed Circuit Board (PCB). The TP has a wire ring on it and is located in the middle of the PCB.
**Step 4.** Connect the oscilloscope probe to the TP, load a tape and press PLAY. Adjust the azimuth for maximum amplitude on the oscilloscope. The waveform will be varying in frequency but should be centred just over 2KHz, with an amplitude of about 1 volt.

## Datassette alignment kit

The Commodore Information Centre have a complete alignment kit for the 153Ø Datassette which is available for about $3Ø plus post and packaging of $3.

This kit includes a small speaker that connects to the edge connecter located on the Datassette PCB. The head azimuth is adjusted for maximum amplitude (volume) in the speaker. This method is not as accurate as using an oscilloscope but would save time if you don't have access to the test equipment and swap a few tapes.

## Rescuing programs from tape load errors

Programs are recorded twice and also include a header which contains information about the program, such as its start, end and file name.

When a program is loaded from the Datassette the first version of the program is loaded and then compared directly to the second version. Therefore if a ?LOAD ERROR is to occur past halfway of the recording, chances are that the program will run or can be saved onto a new tape, with the following POKEs, in the DIRECT MODE.

```
POKE46,PEEK(832):POKE48,
PEEK(832):POKE5Ø,PEEK(832)
RETURN
POKE45,PEEK(831):POKE47,
PEEK(831:POKE48,PEEK(831)
RETURN
```

**Warning**: if you get a ?LOAD ERROR, do not try to list the program. The computer will put two zeros where it thinks the program ends. You'll lose your first line link. You can try LISTING the program after the above POKEs have been completed. if the LIST looks okay, you should SAVE the program on a new tape, just in case there's a flaw in the original tape.

## Mystery ground wire

The ground braid wire attached to the Datassette computer connector is not needed with the C64, nor is there any place to connect it. You should ensure that this wire cannot touch any of your computer's

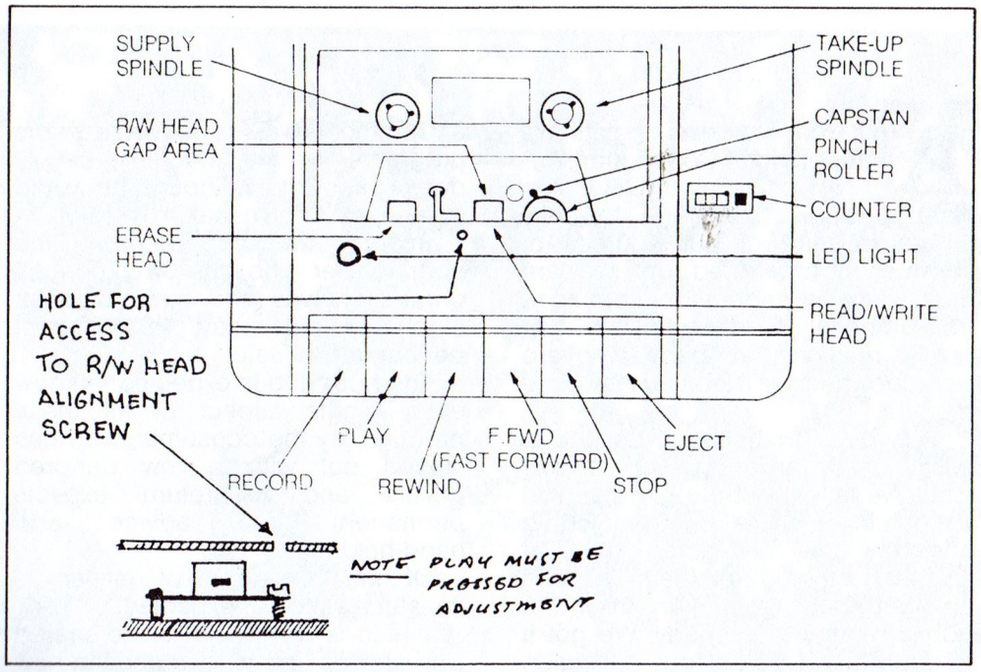
electronics via the edge connectors at the back of the C64, eg input/output port etc.

The easiest way to prevent this is to wind the braided wire around the Datassette cord and then tape it in place. If your Datassette is only used with the C64 or a Vic 2Ø then cutting it off is the best solution. It won't harm the Datassette or the computer.

## Datassette maintenance

Only maintenance required with your Datassette is periodically (every 10 to 15 hours of tape playing) cleaning of the heads, if tapes of a reasonable quality are used.

**Step 1.** Turn the computer off.
**Step 2.** Press EJECT to open cover, then press PLAY to expose heads.
**Step 3.** Put tape head cleaner on one side of a cotton swab. Gently wipe the surfaces of R/W and ERASE heads (see figure 1). Scrub gently. Any build-up of tape oxide particles on or around the head gap of the R/W head may cause unreliable performance. Also clean pinch roller and other tape bearing surfaces if tape head cleaner is suitable for this purpose (check label).

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# View from the Hold

And what new excitements are happening at Commodore?

Now that David "Old China Hand" Harvey has gone to daily journalism one of our sources of information has dried up. We are now totally dependent for information from Imperial Headquarters on their public relations company, who are not renowned for rabbiting off at the mouth.

Very possibly because no one is telling them anything. On another page we talk about the goodies that are due in the future from Commodore and how they are going to affect current Commodore users. We did not get that information from the public relations company. We got it through this Rat's devious collection of informants.

All of those future promises are glittering and impressive. But what we rats are most interested in at the moment is what is going to happen now, this month, in Australia. And why we are not being offered all the exciting programs that we read about in the United States.

It seems the answer comes down to the dealers – a hard-pressed and hard-done-by body of men whose sufferings were recounted at length by David "Old China Hand" Harvey in an Australian metropolitan newspaper.

I was talking to a major distributor who told me that computer retailers are the most wronged group of individuals in Australia.

This Rat disagrees with this, feeling correctly that it is the Rats of this world that get the short end of the stick. But let us then discuss the proposition that the computer retailers are the second most wronged group of individuals in Australia.

How I ask, in simple wonderment, can this be?

According to my distributor acquaintance – Rats do not have friends – retailers are expected by users to be experts on every machine and program that they sell. Even this Rat is willing to accept that this is plainly impossible.

Speak up all those who believe that they totally understand two different machines and six programs intimately. The answer is a deafening silence. Even our young hero, Andrew Farrell, who was weaned on a Commodore 64 and wrote many programs for the machine, simply doesn't know it all. Though he would indeed like to give that impression.

Imagine then the plight of the poor retailer who has 3Ø programs on the shelves and three different machines plus, say, 2Ø different peripherals for sale.

The poor dab is expected to know every single aspect of all these products by the consumer, who has lashed out with a few hundred dollars and in return expects permanent free advice and hand-holding.

Of no other group of retailers is the same asked or expected.

Which is why retailers are scared silly when it comes to accepting new and complex programs. Simply because they will have to learn a whole new system to be able to sell and service properly.

It may be that computer retailers would like to join us Rats as outcasts of society. They will be more than welcome. They, like us, have suffered the slings and arrows of outrageous software manufacturers, of manual writers who are struggling to learn English, of peripheral distributors who make the assurance that it will work "straight out of the box" – and then disappear.

## Promises, promises

This Rat is beinning to think that he lives in a world of broken promises.

Where, this Rat asks plaintively, is the disk magazine Andrew "Scarface" Farrell promised?

And what happened to the colour printer which Commodore demonstrated with such enthusiasm?

And what happened to all those new machines which we were given a tantalising glimpse of at the Sydney Users' Group, these many months ago?

And when is Commodore going to announce their Prestel compatible modem that Nigel – Airdrie's finest son – Shepherd was rabbiting on about?

Where, this Rat asks in bemused wonderment, is the Unix compatible machine that was so proudly announced last year?

And answer there was none.

## Welcome

My TransPacific Cousin who lives in Silicon Gutter in California (Rats are not allowed to live in Silicon Valley despite rumours to the contrary) went to the Consumer Electronics Show at Las Vegas. There he saw a banner with a strange device stretched across the main road as he came in from the airport.

Although my TransPacific cousin does not read that well, as far as he could ascertain it was a welcome to Apple, IBM and Commodore to the show from a man who signed himself Jack. Further assiduous investigation revealed "Jack" to be none other than Jack Tramiel, ex head of Commodore and now firmly running Atari.

My cousin thought this somewhat strange as IBM and Apple were not exhibiting at the show. And Commodore, who had a booth directly across the aisle from Atari, were being threatened with litigation by jovial Jack Tramiel.

Could this sign be an olive branch peace offering?

Or could it be interpreted as a rude gesture from the doughty ex-typewriter mechanic who brought Commodore fame and fortune?

Surely not.

My TransPacific cousin also told me about the silliest exhibit at the show.

It was a plug-in cartridge for the Commodore 64 which allowed it to use Apple programs.

As he said to me on the Rat Network, "Wow, gee whillikins and whoopee." (Excuse the lad, American rats speak like that). "This gizmo lets you use all the Apple programs you want. And it only costs two dollars more than a new Apple. Wow, gee whillikens and likewise whoopee, that really is an electronic breakthrough."

Do I detect a note of irony in those comments?

I do indeed. □

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