

# A La Cart

*It's taken five years but the cartridge revolution is here. Now the only problem is to find the one tailored to your needs.*

*by Tony Hetherington*

**T**he Commodore 64 is in a class of its own when it comes to utility cartridges. The BBC has its ROM chips but the C64 owner need only plug in a cartridge to speed up disk access, add a range of useful utility commands, create a screen dump, freeze a game to create a cheat version or, in my case, take a magnetic spreadsheet and dump program from tape or disk onto another disk or tape in a compact form allowing you to pack more games on one disk.

Some cartridges contain routines to backup commercial software which should only be used for personal use. I accept the right of an individual to backup his own games and convert them from tape to disk (instead of paying again for a disk version of the same game) but I must condemn any attempts to use these devices for software piracy.

Piracy robs the software houses of its profits and the programmers, designer and graphic artist of their royalties and as a result is pushing up software prices. This will affect everyone and may eventually deprive the honest users of devices like these of a useful utility.

The current trend towards packing

game boxes full of booklets and play aids may counteract this trend and will ensure that pirate copies will never be quite the same as the original.

Before we look at the amazing range available I'd just like to remind everyone that cartridges should never be plugged in while the computer is powered up. We may get away with it once or twice but it's a sure thing that your computer and possibly the cartridge will come to grief eventually.

Most of these cartridges are available from mail order houses and good computer shops but some may take a little more effort to track down. I would like to thank Microbits (37 Seaview Rd, Wallasey, Merseyside, L45 4JN) for their help in supplying some of the cartridges mentioned in this article.

## **Quickdisc 6 / Evesham Micros / £19.95**

This cartridge provides a LOAD/SAVE facility that's 3 times faster than the normal 644 and's paid plus a variety of other utilities.

The cartridge has a large red reset button

within easy reach. This button will break into any program that has locked up the C64 and using the OLD command you can then retrieve your bogged Basic program.

The reset button may be the most visible benefit and the faster LOAD/SAVE ability the most used but the cartridge



also contains a selection of commands accessed through two key presses or one of the function keys as well as a cure for the save and replace bug.

Formatting a disk is a quick and simple task with Quickdisk II. Instead of typing in a laborious command and then having to wait for over a minute while the drive hummers away, Quickdisk format:AD formats the whole disk in just 28 seconds!

Pressing F7 displays the disk directory which can be printed at any stage by pressing the space bar. It's also as easy to scratch, rename or copy a file or to delete, remove or initialize a disk.

Programs that are loaded in at 3-7 times faster (you won't appreciate this until you've used it) can be loaded to a file address or into Basic where it may even be automon.

If you've got a disk drive and you can't afford something like Dolphin DOS then you might like to pick up a copy of Quickload +.

### The Final Cartridge / B&P Products / £39.00

The Final Cartridge has a freeze utility that can backup software and generate screen dumps. Basic extension commands such as DELDISK and AUTO software to support Commodore interfaces, preprogrammed function keys, 24K of extra RAM and a disk or tape turbo that loads programs 6 or 10 times faster.

When the CMD is switched on or reset via the cartridge button, a menu is displayed from which you can call up a comprehensive machine code monitor; disable the cartridge; turn on the cartridge; load or create a program; save to tape or disk; or print out a screen dump.

The Final Cartridge also contains a selection of useful commands that will make programming much easier. AUTO generates line numbers ranging from a specified number by a set increment value with the default settings producing line numbers 1020,30 and so on. RESUME reorganises your programs (including GOTO and GOSUB commands) into tidy line numbers. DEL deletes a block of program lines. FIND lists every line in which a selected string of characters appears. HILF highlights bugs when testing programs. With APPEND and DAPPEND you can add routines into

your programs that you have previously saved.

Disk users will appreciate the following commands that speed up disk housekeeping tasks and display disk directories (as an alternative to pressing F7), load a program, format a disk, or SAVE and VERIFY a program to the computer's memory.

Tape users, who are often left out of the fast loader scene, will relish the tape turbo that can save a program in memory through the normal tape commands but then reload it ten times faster than the normal rate.

The freeze stops a running program so that you can save backup copies in a compact form but you'll need to use the cartridge to load them back in again. When you reload the program it restarts from where it was when it was frozen so it's important to freeze them at a convenient point such as a menu screen.

While a game is frozen you can also disable sprite to sprite or sprite to background collisions. This may stop alien invaders from killing you and give you a chance to get further through the game or it may stop you from killing them! It all depends on how the programmer wrote the game. Well, you didn't expect cheating to be that easy, did you?

While a game is frozen you can also dump a screen to a printer, either a serial Commodore printer or one connected by a Commodore lead, supported by the interface built into the cartridge. The screen dumps can be printed in two sizes and feature full grey scaling for coloured images but the finished result won't contain any part of the screen spaces as these aren't supported by the routine.

Finally, the cartridge also includes a full machine code monitor that can be used to fill an area of memory, compare to blocks of memory, print out a block of machine code and directly manipulate blocks of information stored on disk by using sector read and write commands.

### The Expert / Trilogic / £39.00

The Expert cartridge is probably one of the most comprehensive cartridges available. Because the internal chip is RAM rather than the usual ROM, it can be readily updated to cater for the latest programs simply by buying a new disk for a fraction of the original cost of the cartridge.

As soon as you see the Expert you notice something is different because it houses a reset button, a three way switch marked



ON, OFF and PRG, an if-all-else-fails button and LED.

Much of the Expert disk contains files that either contain the information to transfer a difficult or multi-load game or other routines to add extra lives and other cheats before making a backup. The saved backup is then compacted so you can get 2 or 3 games on a disk which each reload within 30 seconds.

The disk also contains a full routine with a printout facility and a series of utility routines including ones to alter, edit or disable a game whose sprites may be of particular interest.

A lot of games use sprites which are animated to create the movement of creatures, monsters and missiles that are out to maul you. The Sprite Extractor routine enables you to freeze a program, display it's sprites, view the animation and then save them to disk. A separate sprite editor on the Expert disk (which doesn't work with the Expert cartridge) can be used to edit or customize sprites for use in your own games or to load them back into a frozen out version of the original.

The Sprite Translator can disable sprite to sprite collisions and/or sprite to background collisions. This could save you a lot of lives as these are the collisions which usually kill you but this may also block the effects of your living back, leaving you helpless.

The hi-res grabber and picture saver routine can be used to grab any frozen hi-res screen and save it to disk. This saved screen can then be converted by another utility into a Koolaid formatted screen and edited and printed as normal. However edited hi-res screens cannot be loaded back into the original game.

If the cheat files don't work or there isn't one for the game that currently bores you, then the method may be listed in the cheat machine section which describes how to freeze the game, list the code and obey the relevant lines. This cheating aid is just one function of the Expert's full machine code monitor which is completely invisible to the user and can be used over the full 64K of memory. It can be used to access both Basic and Kernal ROMs and it's typical functions are to import a program, alter a program, to list any part of a Basic program, to write a machine code program, as a hex to decimal converter and to watch the

data, addresses or text.

Cassette users can get a special version of the Expert. It's the same cartridge but is programmed from a tape which includes tape to tape transfer utilities.

Loading from disk or tape each time you power up may sound laborious but it only takes a few moments and allows easy and inexpensive updating.

### The Freeze Machine / Evansham Micros / £28.95

The Freeze Machine is a bright red cartridge with two buttons marked RESET and FREEZE. The Freeze function obviously freezes programs ready for saving to disk but the Reset button is used to toggle between the menus for Freeze Frame Mk V and Laser Mk II both of which have been brought together on this cartridge.

The Freeze Frame menu allows you to turbo load and save some commercial programs as well as your own development programs in a fraction of the normal time, typically 20 to 40 seconds. This may not sound like a great time saving but can make a big difference to a program such as a word processor or database which is used everyday. You'll realize the difference if you ever have to load them at normal snail's pace after you've been using the cartridge for a few weeks.

Freeze Frame also includes a Game Killer utility to disable sprite to sprite and sprite to background collisions plus utilities to list format, initialize and validate a disk, display the directory and to rename or scratch a file.

The Freeze Machine also includes the Laser II system which saves frozen programs as USR files that can be loaded back in 18 seconds or less! Laser files can't be scratched (the whole disk must be formatted to remove them) so your disks could become cluttered with unwanted files.

The Laser system has a similar set of utilities to those with Freeze Frame plus extra one to convert PRG files to USR format.

The Freeze Machine is ideal for programmers who need to save development programs in seconds but



they will raise the machine code monitor facility which is supplied in most of the other cartridges.

### Action Replay / Drossit / £29.99

Action Replay combines any combination of disk and tape transfer that you can imagine. It is also capable of backing up multi-load programs, and has a sprite controller, loader, code inspector and picture save utility.





The backup utility is easy to use and produces a compact, fast-loading version of any Disc II programs. The final copy usually requires 220 blocks, so three games can be compacted on one disk and reloaded up to five times faster than normal by flicking the loadfast switch on the cartridge.

The Sprite Controller allows you to disable sprite collisions and save, edit and replace customised sprites into any game.

Any multicolour hi-res screen can be frozen, grabbed and saved to disk and formatted for the Koala Pad or Blazing Fables graphics packages and then they can be edited, mixed with other graphics and printed out.

Although Action Replay lacks a full monitor it has a code inspector that, at a press of a single key, will display the current contents of the Program Counter along with those of the IRQ and NMI vectors, 6580 on-chip registers, Vtc II chip IRQ mask, the raster-compare latch value, the CIA ICR mask values and timer latch values. Four options are then available: to load in a full monitor or load and execute a machine language program, jump to any address in memory, display a block of memory, or return to Basic.

DoSoft also has a version of Action Replay combined with Diskmate II which includes a 10-screen formatting routine, single keystroke disk commands and a track all the CPUS.

### Mother Load

With all these cartridges around you may well find yourself plugging and unplugging them from down all day. It won't be long before the cartridge port starts to wear out with all this activity so why not invest in a motherboard for your cartridge slot before it's too late?

### Cardboard 5 / Precision Software / £30.99 (plus VAT)

This board has slots for five cartridges which can be switched in and out as required. A fuse and a reset button should prevent any mishaps and a bank of LEDs for each slot shows you which cartridge is currently in use.

### Datel Motherboard / Datel Electronics / £46.99

The Datel Motherboard has three slots for cartridges, a safety fuse and a reset switch but no LED indicators.

### Evesham Motherboard / Evesham Micros / £28.00

A useful little board that comes in two varieties. One has four vertically mounted cartridge slots but the other only has three with a handy through socket to fit a modem.

### Stack Motherboard / Meedmore (Distribution) / £28.00

A four-slot, stackable motherboard with an optional modem slot facility.

