

The Action Replay MK IV Could be Yours

Win this month's competition and you could be flying high with the Action Replay MK IV cartridge from Data!



Well, you've read about them, seen pictures of them and now, here's your chance to win one of Data's Action Replay MK IV cartridges. The first ten correct entries pulled out of the hat will become proud owners of this sought after cartridge. So send your entry in now!

How to Enter

Study the two cartoons on this page; there are a number of differences between them. Once you have decided how many differences there are, complete the entry coupon and send it to the editorial address (see coupon). Write the number of differences that you have found on the back of the envelope. If you don't your entry will not be accepted.

The Rules

Entries will not be accepted from employees of Angus Specialist Publications and Data Electronics. This restriction also applies to employees' families and agents of the companies.

The How to Enter section forms part of the rules. The Editor's decision is final and no correspondence will be entered into.

Action Replay MK IV Entry Coupon

Name

Address

Postcode

Number of differences found

If I win I would like the format of my copy of Action Replay MK IV to be:

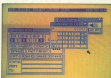
Commodore 64 tape **Post to: Your Commodore,**

Commodore 64 disk **Action Replay MK IV Competition,**

Amiga disk **1 Golden Square,**

(please tick as appropriate) **London W1K 1AR**

ULTIMATE



Are the latest cartridges on the market the ultimate in C64 add-ons?

By Stuart Cooke

Even though the C64 has always had a cartridge port, it is only over the last couple of years that the cartridge market has been getting the attention that it deserves. Unfortunately, for the software industry, many of the cartridges developed were designed to enable the user to copy commercial programs.

As time has marched on, more and more cartridges have been developed, each offering more facilities than the last. Now Datal has added two more cartridges to the ranks of ever ready programs in the guise of the Final Cartridge III and the Action Replay MK IV. Both of these cartridges offer their owner facilities for making copies of commercial software. However, both offer the user of these cartridges many more features, making them stand out from others in the market.



Final Cartridge III



Action Replay MK IV

To Copy Or Not To Copy

Even though many cartridges offer 'backup' facilities no man stress that Four Commodore does not condone the copying of software for purposes other than the owners own use. We do understand the importance of having backups of much used software to guard against accidents. Cartridges that offer copying facilities should be used for just this purpose.

Making backups of programs can also give an increase in loading time. Using the Warp 25 option of the Action Replay IV cartridge, more of this later, the loading time of my wordprocessor was reduced from 1 minute 40 seconds to just 9, yes 9, seconds, impressive eh?

The Final Cartridge?

When the original Final Cartridge made its way on to the UK market it proved to be immensely popular. Originally the cartridge added numerous 'utility' functions to the C64, such that the computer was in need of. DOS functions were added allowing the user to access a directory listing without having to LOAD it over the program in memory. Basic programmers were given a number of useful commands including a monitor, while machine code users were given access to a monitor that wasn't resident in the computers memory. The Final Cartridge III offers all of the above facilities and much more. For a start the C64 is given a new, Macintosh like, desktop. Pull down menus, windows and icons giving the computer owner access to many facilities via the keyboard, mouse or joystick.

Upon power up the desktop is

CARTRIDGES?

automatically entered, C128 users don't panic, just press the computer's reset button and you will be in C128 mode, though I found I had to take out the cartridge in order to use 80-column mode. The disk top offers various menus. I will deal with each one in turn. First of all you are given the chance to use what version of cartridge you are using, and the authors names - all standing stuff!

The second pull down menu, SYSTEM, is where we start to access the cartridge proper. This menu allows you to set up the mode that you are using the cartridge in. Choosing Basic drops the user back into C64 Basic, with new functions added. FINAL KILL disables the cartridge. FREEZER access the program manipulation menu which will be dealt with in a moment. The next option REDRAW does just that, it redraws the screen so that all of the windows that are open can be seen.

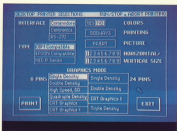
The third pull down menu, SYSTEM, indicates that update software will be released for the cartridge. CLUNK and TINK are detailed in the manual as standing future extensions from disk or tape. A further option NOTEPAD, gives the user access to a notepad where you can store notes and create small documents. Facilities to alter print style, line spacing, print the text and save and load documents exist.

The UTILITIES menu gives the user of the cartridge access to some of the most useful functions of the desktop. PREFERENCES allows you to change such things as the speed of the cursor, the screen and cursor colour, which port the input device is in and whether you are using a mouse or joystick. BASIC PREFERENCES allows you to set up a number of default parameters that are used when the programmer access Basic. Facilities available are:

Turning on/off a keyboard check;
Make all of the keys auto-repeat;
Make the cursor blink, or be steady;
Set up a default device for LOAD and SAVE operations;
Set the border colour;

Give C128 users access to the numeric keypad in C64 mode.

What I feel is missing from both of the above options is the ability to save your own personal defaults on disk or tape so that you can set up the computer as you like it very quickly. At the moment you have to alter the settings yourself every time you power up.



Choosing the CALCULATOR option gives you, yes you've guessed it, a calculator. Once this is on the screen you can either move the pointer to the keys that you want to press or use the keyboard. C128 users have an advantage here as they can use the numeric keypad.

The TAPE option allows you to LOAD a program from tape. Options are given to LOAD with a normal program or one that has been SAVED using the cartridge's tape turbo.

Disk users are well catered for with the DISK options. Here the user has the ability to perform any of the following: Change a program's name;
Load and RUN a program;

Alter the name of a disk;

Fast Format a disk;

Empty a disk by just giving a new disk name;

Initialize a disk;

Validate a disk;

Search a program;

View a disk directory.

The directory option is quite unique as it allows you to display the contents of up to three different disks on screen at any time.

I must admit to finding use of the disk menu a little long winded. To access any command you need to perform the following:
1) If accessing a program highlight it on the directory.



- 2) Select the operation that you require.
- 3) Input any text required, such as new name, etc.
- 4) Select the ISO option to start the command.

A newcomer to Commodore computers may find this great, personally I felt that I could enter the necessary commands quicker at the keyboard.

The last desktop option is CLOCK. This allows you to set up the time and set an alarm. The time can be displayed at the top right of the desktop bar.

Basic Plus

As previously mentioned, the Final Cartridge III adds a number of extra facilities to Basic, these are:

- Bi-directional scrolling of Basic programs;
- A printer interface;
- Screen dump facilities;
- A disk and tape turbo;
- Pull down menus;
- 29 new commands;
- New editing commands.

The new editing commands allow you to jump to the bottom of the screen, delete characters after the cursor to the end of the line and freeze output to the screen - useful with the LIST command.

The printer interface mentioned above allows you to connect a non-Commodore printer to the C64 via a Centronics interface.

All of the new Basic commands can either be entered directly from the keyboard or selected from a pull down menu. Obviously space won't allow me to detail all of the commands available so I'll just mention a few: AUTO - gives auto line numbering facilities;

BAR - allows you to turn on and off the pull down menu;

APPEND/DAPPEND - adds the specified program to the one in memory from either tape or disk;

DESKTOP - takes you into the cartridge desktop;

DISK - allows you to send commands to the disk drive, and get directory listings, with ease;

DUMP - list variables used by a program;

FIND - search program for specified information;

KILL - disable the cartridge;

MON - enter the cartridge monitor;

RENUM - renumber a program;

PACK/UNPACK - compress and

decompress the program in memory. I - allows you to use a hexadecimal number

Printer

As I have already mentioned the Final Cartridge III allows you to make backup copies of programs, - well this is the section of the product that does it, however, it doesn't end there.

Once you have accessed the Printer you can manipulate the program in a variety of different ways. Firstly, there is an extremely powerful printer dump option that will send a copy of your current screen to the printer. One extremely impressive feature of this screen dump is the fact that not only is the backup sent to the printer but sprites are also printed. This is the only printer dump that I have come across that does this. It is worth pointing out that due to the complexity of some programs you can't successfully print out everything.

Cheats are entered for by the ability to disable sprite/sprite collision detection and sprite/background collision detection. When playing some games selecting these options will allow you to avoid being killed. A GAME AUTOFIRE option transforms your normal joystick into one with auto-fire capability. When you hold down the fire button the joystick keeps firing.

When finished manipulating the program in memory you have the ability to return to the program, exit to the desktop or go into the machine code monitor.

Monitoring

The machine code monitor offers all of the commands that you would expect to find such as assemble, disassemble, memory display etc. A number of other useful commands have also been added that make the monitor extremely powerful. Commands exist to edit characters and sprites. These aren't 'real' editors but allow you to enter a series of '%' and '^' in the shape of the character or sprite that you require. A disk monitor allows you to access and modify the internal memory in your disk driver. As well as being able to modify the internal, your drive's memory facilities exist to read areas of the disk in the drive into memory.

Speeded Up

I have already mentioned that the

Final Cartridge III has both a disk and a tape turbo.

To use the tape turbo you simply LOAD and SAVE programs with a device number of 7 rather than missing it out or using 1. The tape turbo is around ten times faster.

The disk turbo is automatically used with any disk command. The improvement on loading speed is around 15 times. It is worth pointing out that if a program is protected then not all of it will be loaded at turbo speed. Though this can be overcome by loading the program. In my own tests I found that my wordprocessor actually loaded slower when the Final Cartridge III was enabled than the same program did when the cartridge wasn't present - and that program doesn't have its own turbo.

Final Cartridge?

There can be no denying that the Final Cartridge III has some extremely powerful and useful facilities. My own view is that the Basic utility commands and screen dump facilities are excellent but that the desktop facilities, though extremely pretty, are gimmicky and anyone using the cartridge will soon get fed up of using many of the facilities offered. The idea of having a stopgap facility permanently available was extremely appealing to me as I could use it for writing quick notes and taking telephone messages, however when you move from Basic to the desktop any program in Basic memory is lost. In other words you have to SAVE your programs before accessing the desktop. In my mind this makes options such as the stopgap and calculator useless since you can't flick between them and your programs.

So would this cartridge be my Final one? Well to be honest it is good, but it's not that good.

Action Replay

Reading adverts in Your Commodore it sometimes seems that the Action Replay cartridge is upgraded, re-released every month. In fact the newest re-generation is only number four and is the most comprehensive to date.

So much is packed into this cartridge that Dandel had a custom LSI logic chip designed by Motorola for the cartridge. As well as this there is also 512 of ROM and 8K of RAM inside the small red box that plugs into the cartridge port.

Back Again

As with all of the previous Action Replay cartridges the emphasis on this one is the ability to backup programs. When saving a backup you are presented with various options. You can SAVE the program as one of the following types:

Standard speed.
Turbo.
Warp 25.

Standard means that the program uses the normal disk/Computer LOAD routines and will re-load at the normal Commodore snail pace. A turbo saved file will re-load quicker than normal, however both of these options become redundant once you've used Warp 25 after all what's 2 times the normal LOAD rate?

Warp 25 files are of such a format as they can only be loaded either with the cartridge present or from a special loader program. An option exists within the cartridge to save the loader onto your disks.

All files saved at WARP 25 will re-load in 6-7 seconds, or so Daniel claims. In practice loading time is a little longer as you do need to LOAD and RUN the loader program if the cartridge isn't present, however this only adds a couple of seconds onto the loading time - who needs a parallel disk operating system?

If using cassette then you too have an option regarding the speed of the SAVE. TURBO saves your programs in such a way that they will re-load at between 3 and 5 times faster than normal. SUPERTURBO saves the programs so that they will re-load at 10 times normal. Super turbo requires that the deck is in good condition and that you are using good quality tape. If not the results can be unpredictable.

For those awkward to copy programs facilities exist to enter POKE into the program and LOAD parameters from a special disk available from Data.

Pretty Pictures

As well as giving excellent backup facilities a number of graphic options also exist. As with the Final Cartridge III you can disable sprite collision detection enabling you to "cheat" at some of those difficult games. It's important to note that not every program will work with sprite detection disabled. Another parallel with the Final Cartridge III is the ability to edit sprites, however, the

editing facilities of the Action Replay IV are far superior. The sprite editor is a 'real' one with the ability to display sprites in either normal or multi-color mode, change the colours, alter the sprites, insert sprites, etc. In fact as a stand alone program the sprite editor would be fairly useful. For a games programmer this non-memory resident sprite editor is a must as it will allow them to stop their program at any time, tweak the way their sprites look and then carry on with the game. The non-programmer can have great fun altering the sprites in their favourite games.

Options exist to dump screen to a printer or save it out in such a way that it can be re-loaded by an auto package such as Blazing Paddles (also from Data). The graphic data is not as versatile as the one on the Final Cartridge III and doesn't include sprites in the picture. Epson and Commodore printers are covered for.

One 'throw away' feature of the cartridge is the Text Modifier, this allows you to search through memory for a specific string and change it to another - great if you want to modify your own name to the high score table of a game before you SAVE it.

Utilities

A number of useful facilities are provided by the cartridge. These's a fast formatter for disk sets. A file copier will copy individual files, including WARP 25 files. You can even change normal programs to Warp 25 and vice versa. The file copier comes into it's own when you realize that it will work with two disk drives - no more tedious disk swapping! Should you want to copy a whole disk then a disk copier is provided for copying unprotected disks.

More from Basic

As well as providing the expected cartridge orientated facilities the Action Replay IV cartridge, like the Final Cartridge, adds a number of new facilities to Basic.

Firstly a DOS is included so that you can access the drive with ease, get disk directories etc. Furthermore the function keys are defined so that some commands can be entered with one key-stroke, for example loading and running the first program on disk.

A number of extra Basic commands are provided, not so many as the final cartridge but still useful.

Naming a few of the new

instructions:

GILD - will restore a NEW program.
LINESAVE - saves a range of lines to disk.

MERGE and APPEND allow you to mix/add two programs.

AUTO gives automatic line numbering.

PLIST sets a listing to the printer.

Monitoring

An extremely powerful machine code monitor exists within the cartridge.

Unlike all other monitors entering it doesn't perform a test to stop the program currently running. Upon entry all of the computers memory including the screen, stack and zero page are all frozen, all 64K of the computers memory remains unaffected by the monitor.

Once again all the expected commands are present, including disk monitoring and disk editing facilities. You can examine memory contents in hex, ASCII and CBM screen codes. Conventions between binary, decimal and hex exist as does the unusual ability to perform a Basic function.

In the Ring

Both of the cartridges looked at here offer the user essentially the same facilities. The Final Cartridge is more gimmicky than the Action Replay cartridge and for me has a number of facilities that would soon become redundant.

If you are a newcomer to Commodore machines then you will probably like the pull-down menu/icon driven environment - very friendly. Furthermore, Basic programmers will no doubt find the wealth of useful commands useful.

If you are an advanced programmer and are more interested in programming your computer in machine code, then the monitor in the Action Replay cartridge is excellent. Disk editors will also find WARP 25 a delight. Don't forget you can even backup your own programs and save them at turbo speed.

So which one would I say was the overall winner? Well both cartridges have their own good and bad points and I could find a conflict one for both of them. I could say buy both, if you did you wouldn't be disappointed. Should I have to make a decision to purchase one then the Action Replay IV suits my requirements as a serious user far better than the Final Cartridge. 25