Trilogic: The Experts

Sometimes a product can be so successful that a company seems to be a one-line firm. Like Hoover and vacuum cleaners, Trilogic are inseparably linked to their Expert cartridges but there's much more to this Bradford company as we shall see. Before looking at the range of Trilogic's catalogue a look at the Expert's place in the marketplace is inescapable.

The Expert Menu

Trilogic consists of a five man team headed by Graham Kelly and Ian Jones. Back in the days when the Pet was everyone's idea of the perfect small business computer, Kelly got involved with programming and the need for backup tapes led to the development of the highly successful DCL1 tape to tape direct backup system which is still in use today for Datasette backups. The advent of the Commodore 64 gave rise to the idea of a cartridge-based, external RAM backup system which would be invisible to software but could be switched in without disturbing the contents of normal RAM memory.

At the time of its launch, the Expert was partially eclipsed by the appearance of the first Freeze Frame cartridge and it became clear that Trilogic would not have things all its own way. Rather than becoming despondent, the team saw this as a challenge. It was obvious from the start that software houses would produce new and more sophisticated protection systems and that is why the Expert was conceived with an upgradable RAM base
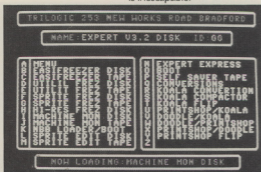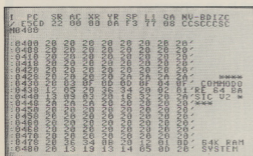

Experts Monitor

which made it simple to combat and compete with all of the ROM based cartridges which soon followed in Freeze Frame's wake.

Two more unforeseen problems assailed the fledgling Expert when companies started using the non-maskable interrupts which were at the heart of the cartridge's operating system and with the appearance of the C128. The C128 in C64 mode was relatively easy to cater for but the NMI problem was much more difficult to overcome.

Eventually, a module was produced which could be fitted between the cartridge and the computer. All later versions of Expert incorporated this ESM module but compatibility with the original cartridge was affected so an upgrade offer was made to all owners of the Mark I cartridge (an offer which still stands today).

Several operating systems have appeared for the Expert and there are few facilities which the cartridge cannot replicate. All but one of these is of no interest to Trilogic but I know that they are envious of the incredibly fast turbo loading system which the latest Action Replay cartridge possesses. At the moment the team are hard at work producing a comparable system which will really prove the value of using RAM chips (check the news).

Trilogic say that owning an Expert is like possessing a range of cartridges because their disks and cassettes contain several separate operating systems which can be individually loaded into the cartridge. This not only means a wider range can be supplied but also allows each facility to be more comprehensive than those crammed into the limited space of a ROM chip. The current version of the Expert disk is V3.2 which contains such facilities as a 64K monitor with assembler, sprite finder and saver, hi-res screen saver and printer dump, disk turbo and compactor, sprite editor, joystick port swap, autofire command and infinite lives command in addition to the full backup system and a simplified version of the backup system called Easifreeze.

Into The System

The main system within the Expert library is the monitor/assembler which acts on all 64K of the computer memory without changing it significantly. The Expert monitor is probably the most comprehensive one available with no less than 31 commands.

The only disadvantage with a RAM system is that it is volatile memory or, in other words, when the computer is turned off the cartridge contents disappear and need to be reloaded. In tests I've found that the RAM chip is of good quality and it is possible to flick the computer off and back on again without losing

the memory contents. This is not a recommended practice but can be very useful in cases of dire, do-or-die emergencies.

The menu makes loading easy and guidance screens help to make loading possible without reference to the manual. The process is to load and run the menu like a normal Basic program. All of the files are displayed and selection is made by pressing the relevant letter key. From this point the operation is automatic. Firstly, a Trilogic symbol appears with a snappy piece of music and the company name snakes around the screen while an invite to 'press space' flashes on and off. When this is done a new screen appears which similarly implores you to switch the cartridge from PRG to ON and press the reset button.

The cartridge has now been loaded and a welcome screen appears which outlines all of the commands available to the user for the selected operating system. This is a reminder and cannot be recalled once the OS proper is entered when the space bar is pressed again.
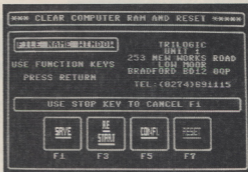
Now you find yourself in the monitor mode and to return to C64 mode the letter 'N' is entered and the computer resets to the familiar power-up screen. At any time the cartridge can be re-entered simply by pressing the RESTORE key. If this is done accidentally, 'R' followed by RETURN will return the computer back to C64 mode at the exact point at which it was left. The advantage of this is that a program can be loaded, customised through the monitor and restarted.

When writing machine code programs this function can be really useful for debugging because the program can be interrupted at will, all registered checked and altered, and then the program can be restarted. A dynamic way of debugging when normal program tracing fails to reveal the problem.

And There's More

Trilogic also produces a utility disk to accompany the latest operating system disk. Most of this disk is filled with parameters for backing up multiload programs but there are two more programs, one for moving files from one disk to another and the other for further compacting Expert files.

The Super Compactor is probably the most powerful commercially available compactor and its power is truly awesome. It may take 15 minutes to sift through a file but with an average 75% saving on disk space and, consequently, loading time this is a stunning program by anyone's standard. I tried it out on last month's disk version of Atlantis which occupied 188 blocks in normal Expert format. After compaction this was reduced to a mere 133 blocks, a saving of 55 blocks - or more than 13 kilobytes! Trilogic have on record a program of 230 blocks which was almost reduced by half to 123 blocks, which leaves me absolutely stunned.

Easy Freeze

Complaints are still received from cassette users that the turbotape function 'doesn't work'. Tests proved that this was attributable to alignment problems within the Datasette and so the idea of Datasette Doctor was born. The Doctor runs two loading tests at different baud rates and a high-baud saving test. Additionally, a head cleaner and demagnetiser is included in the pack.

Behind The Scenes

The Trilogic workshops also provide repair facilities and their electronics expertise gives rise to various useful add-ons. No-one makes power supplies like Commodore. Apart from a tendency to fail totally, these handy little units have a facility which creates a constant irritating hum which lets you know that it's plugged in. The Titan is Trilogic's alternative power unit which, though compartively expensive, have the advantage that they are extremely robust and can easily be repaired if they fail through ageing.

The units come in two versions - Titan 1 or Titan 2. Version 1 is a straight forward replacement for the Commodore PSU with the addition of a fused output and a larger reservoir capacitor which smooths out irregularities in the mains supply. Version 2 is the deluxe model which incorporates a mains interference filter and surge suppression circuitry which protects the computer from the more vicious power surges, or spikes, which can occur on the normal household ring main.

Spikes are often caused by refridgerators and central heating systems. I experienced the mayhem that spikes can cause when I lived in a house with an old fridge. Each time the cooling system came on it would at best cause a loud click through to the computer making a warm start, very annoying.

Another annoyance with the C64 or C128 is that some software manufacturers insist on using different ports for joystick control or sometimes a two player game unnecessarily involves using a joystick in each port. Unless you're lucky enough to own two joysticks, the resultant plugging in and unplugging of the joystick is not only irritating but also causes excessive wear and tear on the plug and sockets. To combat this the Scorpion port switcher has

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Ready for action

been devised. This unit plugs into both ports and the joystick can then be connected to either port at the flick of a switch.

Trilogic's DJA1 is a stand alone unit or a companion to the Scorpion which allows two devices to be connected to one port. Users with a mouse or lightpen and a joystick will appreciate the value of this unit. If you own a joystick mouse and a lightpen, two DJA1s will allow all three to be simultaneously connected to one port.

The final unit of particular interest is the Sound Digitizer (the spelling gives away its American origins) which will convert sounds from a cassette recorder, hi-fi or radio into a digital signal at least 14 seconds long. The signals can then be reproduced through the SID chip or further processed using the customiser software which is provided on a disk that comes with the digitiser.

Amiga Upgrade

Some C64 owners may be currently thinking of upgrading to the Amiga and wondering what to do with their old machine. Trilogic have the answer which is a bit of an ignominious end for the trusty C64 but one heck of an addition to any Amiga system. Instead of buying new leads for printer connection, why not use the C64 as a large printer buffer? With such a highly intelligent buffer quite a few possibilities are open.

Monitor Commands

For the moment a 4K operating system is

employed to manage memory movement but maybe in the future some of the 60K buffer space may be used for downloadable print faces which can be pushed into the printer when required under Amiga operating system.

The obvious advantage of a massive buffer is that the Amiga is freed from printer output much faster than normal and the whole

wordprocessing business can be speeded up immensely.

Small is beautiful and Trilogic has maintained a long history of software and hardware development through its compact family atmosphere. It has not always been plain sailing and some of their projects have hit insurmountable snags. Whatever happened to the much advertised RamboX or Phantom turbo disk systems?

RamboX has been placed on the back burner and a massive rethink is underway. The details of this rethink is something which I'm not allowed to reveal yet but the result will be stunning. Phantom has been abandoned because it is a specialised system which means that demand is relatively low but production is time consuming. A number are ready for delivery but you'll have to be quick to grab one before they all disappear.

One future development which Trilogic are considering is a battery-backed Expert which means that your favourite operating system can be loaded and stored for use, effectively simulating a reprogrammable ROM pack. If all goes well this should be available later this year but no price has yet been decided. Current owners of the Expert can quell their fears with the knowledge that the new cartridge will maintain compatibility with the current one.

The dynamic duo refuse to be drawn on how long the C64 can last but as long as there is a sizeable user base, Trilogic will be there.