

SINCLAIR SCENE

Miracles and CueWells

by Sid Martin and Timothy Green

Plagued by mice? Irritated by icons? Is CueWell the answer, or just another devious pun? Also, the debut of a cheap QL hard disk

THE BIRMINGHAM contingent of Quanta, the QL User Group, had something of a scoop in February. Forty-odd people crowded into the front room of a city-centre pub to see Tony Tebby in action, along with what was, at the time, the only existing prototype of the Miracle Systems QL hard disk.

Most of the hardware in the disk unit comes from IBM-compatible systems, via an ingenious interface that links a Western Digital Filecard to the QL. This add-on was first mentioned in our February Microfair report.

Miracle (0454) 317772 has had to be devious, because its market-leading Trump Card expansion fills almost all of the QL memory space, gobbling up the 256K Sinclair allocated for peripheral expansion. The Hard Disk has to find another niche for its software and 512 byte sector buffer, without precluding other expansion.

At first, Miracle considered interfacing via the microdrive expansion connector. This was intended for extra QL microdrives, but is seldom used in practice. Most users considered two microdrives quite enough, and opted for disk expansion when they needed extra capacity. You can plug Spectrum drives into the QL connector, but they are away from you because the microdrive port is at the opposite end of the machine from the Spectrum one!

In the event, Miracle left the microdrive connector alone, and ended up using the ROM cartridge port. There's a substitute socket on the drive box, in case you want to plug in a 16K ROM cartridge alongside your 768K Trump Card and 30 Megabyte Winchester.

This is all very clever, when you consider that the cartridge port theoretically only allows input. Miracle are using it to read a full 16K of ROM, as usual, and to read and write disk sectors at high speed.

The technique used is a secret, but Tony Tebby says it works sufficiently well that you can use interrupt-controlled ROM software at the same time as the disk. It remains to be seen whether this techno-trickery will cause compatibility problems when it comes into contact with other QL gadgets.

Tebby's disk control software was still under development. There was less than 800K of data on his hard disk, suggesting that it had been re-formatted shortly before the demo. The 'delete' operation had temporarily been lost in the course of software development.

Apparently, 'delete' worked fine until hierarchical directories were added at the end of the previous week. The hierarchy allows you to split the directory up into sections, so you don't get 32 Megabytes of files listed every time you type DIR!

Disk space is allocated in 2K lumps, so in theory you can have almost 16 thousand files onto one hard drive. These allocation steps are smaller than on most hard disk systems, which should mean less wasted space at the end of small files.

Directory access is much faster than on floppies; 32K of main memory is allocated to the disk system as soon as you start to use the big drive. This area holds the 'File Allocation Table',

which records the location of files and free space.

The demonstration confirmed that the hard disk was faster than a floppy, but loading speed still seemed rather disappointing. Tony explained that the code had not been optimised, and said that 'tweaks' should boost the speed towards a theoretical maximum about five times faster than QL floppy disks.

Miracle hopes that the missing features and fine-tuning should be complete 'by the beginning of March'.

This is not the first QL hard disk system, but it's by far the cheapest yet, at £399 for drive and interface. CST produced a usable hard disk add-on almost three years ago, at a price of over £1,100. This design is now licensed to ABC Electronic in West Germany, which hopes to cut the price to under £500.

The CST/ABC interface uses SCSI - the 'Small Computer System Interface', originally designed for workstations and mini-computers. SCSI transfers

data a lot faster than ST-506, but drives are more expensive.

The CST/ABC package allocates disk space relatively wastefully, in 8K lumps, 'limiting' you to a maximum of about 2,400 files on a 20 Megabyte drive. QL floppy drives allocate space in 1.5K steps.

Homebrew hardware

Meanwhile, several Quanta members are working on their own hard disk designs. A couple of prototypes use cheap IBM-type ST-506 drives, while two other members have designs based on the SCSI interface. The weirdest of all is based on Transputer components, which makes it efficient but expensive.

It's pretty tedious making a backup of 32 megabytes onto 720K floppy disks, let alone 110K microdrive cartridges. Prolific PDQL programmer Chas Dillon is working on 'HardBack', a semi-automatic backup system for the Miracle and CST drives; meanwhile his 20 meg Thor disk has crashed while he was waiting

Clone news

THE NORDIC saga of the QL clones continues. A prototype board for Tony Tebby's ill-fated Futura design has surfaced in West Germany. After a little while trying to get it to work, the hackers involved took it to Denmark, in the hope of selling it to Sansoft boss and CST sugar-daddy Helmut Stuvén.

Helmut reportedly turned down the offer, still hoping to clinch a deal to sell lots of Thor XVI's to the Russians. We are told that the Thor circuit board has been completely redesigned, so it should be extra-good when CST and its subcontractors get around to manufacturing some more. As usual, this is expected to happen 'imminently'.

Meanwhile the new release of Argos, the Thor's 'all-new QDOS-compatible operating system', is getting closer. We've heard reports that 'Beta-test' copies have been sighted, and have been promised an upgrade at some unspecified date when the new code is

'firm'.

The English edition of the manual was not available last summer when we reviewed the XVI, and we've been waiting for a copy ever since. Apparently the Danish government has accepted that the Thor is a Danish computer, and given Thor International a grant to translate the existing manual into English, so there should be signs of progress soon.

Not content with their SCSI disk deal, ABC Electronic of West Germany has announced another QL-compatible, the Enigma. This beastie is promised to arrive in March, even though *Shopper* gossip columnist Greg 'Scoop' Ingham pre-emptively dismissed it in his last column.

Enigma uses the 68008-SN processor, making it the same speed as a QL but capable of handling an extra three megabytes of memory. One megabyte will come as standard, at a price of £599 including souped up software, one

720K 3.5 inch disk drive, a mouse and a PC-style keyboard.

The target market is German corporate buyers, who know a good thing when they see one and already have a significant investment in QLs. ABC also expect to sell a few machines to home users, although the price may be a bit high for the lowest-common-denominator UK market.

What with the Quanta design mentioned in the January issue - Mike Lilley's QL-PC - the QL world looks set to mount an imminent attack on IBM. Well, almost!

Never one to play the ball when he could go for the man instead, Greg Ingham predictably babbles that the QL is a 'weed' - but it is showing all the signs of being hardy and perennial. You do have to use one for a while to appreciate its advantages and addictiveness, but we can't expect Greg to realise this when he's absorbed in a 'devastating' critique of early Sinclair marketing.

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for CST and Tebby to agree on a format for incremental backup data!

Another Quanta member has addressed the backup problem by hooking up a large capacity tape streamer, similar to the ones used in 'Black Box' flight recorders. He's stepped in where Miracle feared to tread, and decided to send the data through the Microdrive expansion connector. What with Jonathan Oakley's keyboard status indicator, hooked up to an unused pin on the second processor (*Shopper* issue 12), the QL's expansion potential seems to be putting on a late spurt at the moment.

We plan to check out all the latest offerings at the National Quanta Workshop in Northampton on 18th March, by which time Miracle's commercial unit should be finished and working. Other things being equal, we shall report from the workshop in next month's Sinclair Scene.

Ant emulators

Digital Precision's fabled QL MsDos emulator was scheduled to make an appearance at the Quanta meeting, but in the event DP boss Freddy Vachha didn't show up. Tony Tebby commented "he told me on Friday that he had it working". The unseen emulator has been advertised since December, and was due to be launched in January.

We're still waiting for a copy of *Success*, DP's CP/M Emulator. We offered to review it a year ago, intending to compare it with Sandy's CP/Mulator (now handled by Power Computing). Freddy promised to send a copy of *Success* as soon as the faster ROM version was available - Sandy's emulator runs in ROM, making it faster than RAM code. Since then we've heard nothing.

Meanwhile, the first PC Emulator for the QL has been revamped "in order to provide extra facilities to make it a direct competitor to Digital Precision's".

Ant Computing wrote to us at the beginning of February to say it would send a copy of version 2 of its IBMulator as soon as possible after release. The new one is said to be faster, to support CGA colour graphics as well as MDA text, and allow QDos tasks and MsDos emulation to run at the same time.

It seems likely that the first version was rushed out to beat DP onto the market. We haven't been able to get hold of a copy, but second-hand reports indicate that it had quite a few bugs, even making allowances for the activities of DP's propaganda machine. We shall give you our own first-hand assessment as soon as possible.

CueWell

CueWell is a 'front-end' package for the QL - a program intended to make the machine easier to use by reducing the need for typed commands. The original version has been out for a while, but Rob-Roy Software have released a souped-up version 2 which expands on the basic features.

CueWell is billed as 'the cure for QL users plagued by micc or irritated by icons'. It loads as a

this is not too frustrating as you're only expected to type 5 characters. If you miss off the underscore at the end of a device name, *CueWell* appends it for you.

Other configuration options let you set the serial port speed or change the display colours from green on black to red on white. Once you've configured things to taste the 'S' key prints a copyright plea and saves the config-

between 32 and 64 are displayed.

Twenty six names are shown on each screen, with a single letter next to each. Only the first 15 characters of file names are displayed. QL file names may be up to 36 characters long, but *CueWell* expects you to copy your files, if necessary, to ensure they have short names. This is tedious and should be unnecessary.

Long file-names are a good feature of QDos, and utilities should not dissuade people from using them. This is a common mistake - in the misguided quest for neat displays, HiSoft's *Devpac* limits you to 15 characters of file-name, while Psion forces names into the MsDos corset of eight characters plus a three-character extension. Yuck!

If you've got more than 26 files in your directory *CueWell* splits it into pages - up to four on version 1.2, or six pages (156 names) with version 2. The '1' key selects the first page, while '2' winds to the next and '3' prints the latest page.

The printed version is neatly formatted, with the medium name and capacity at the top of page 1, followed by names and sizes in order, without the blank lines and index letters shown on screen. Sadly, you still only get the first 15 characters of each name. There's not a hint of how to configure the printer device. We used the default, SER, and printouts worked first time.

You select a file by pressing the letter key shown next to the name on the current page. Tasks and SuperBasic files are distinguished automatically, as long as the SuperBasic file starts with a line-number. Tasks have a special file-type, so it's easy for *CueWell* to spot them.

As far as we could tell from the sparse documentation, all other files are assumed to be machine-code. If you select them they are loaded into RESPR space after *CueWell*'s own code, and CALLED. If the file is a Quill document, direct SuperBasic commands, or other data, this is a sure-fire way of crashing the machine.

The use of memory after *CueWell* means you can load code while tasks are running and the size of the RESPR area is frozen. However, you must pre-allocate all the memory you might need when you first load *CueWell*, and can't use it for anything else in the meantime. Most of the time this means that you might just as well load the code at the start and have done with it.

We had consistent problems running SuperBasic programs from *CueWell*, even though we were using the latest, relatively bug-free version of QDos. The programs ran OK, but errors

CueWell directory display

```

PRESS LETTER A-Z TO CHECK FILE  PAGE NO. 1
GRAM  SPARE SECTORS 192  TOTAL SECTORS 1440
A ACROSS_SAV 1  B BOOT 1
C BOOT_BAS 1  D BOOT_MAKE 1
E BOOT_REXT 87  F CLONE_BAS 1
G CPMU_EXE 27  H GRABBER 6
I GUARDIAN 6  J HOTKEY 48
K HOT_MAKE 7  L HUT_SAV 1
M INSTALL_BAS 9  N LOCATIONS 5
O MAZE_SAV 1  P MDV1_WORLDMAP_5 52
Q NOTES2 14  R OLD_FOOLKIT_TAS 48
S PTR_INT 19  T ORAL_HELP 28
U RHPRT 11  V RDCPM_EXE 62
X READ_ME_DOC 21  Y RISK 67
Z RISK_BOOT 1  RISK_TK 22
1=1ST PAGE 2=NEXT PAGE 3=PRINT ENTER = MAIN MENU
  
```

CueWell's large character display appears very quickly as it bypasses QDos printing routines

resident procedure, accessed from SuperBasic.

When you type CW the screen clears and a menu of five options appears in large, friendly letters. Function keys F1 to F4 read and display the directories of various drives - the program comes configured for two microdrives and two floppies, but you can re-configure any of the device names by pressing F5. Names must be five characters long, so you can't use wildcards like FLP_1BAS, for all files ending '_BAS', or sub-directories like FLP1_TEST_.

There's no cursor when you type in a new name, and no way to correct mistakes once you've pressed a key. If you make a mistake you have to start again, but

ured code on any device. SHIFT CTRL Q returns you to a blank SuperBasic screen; we'd prefer to use ESC.

The directory display is probably the best feature of *CueWell*. File-names are sorted into alphabetical order - by rows rather than columns - and the size of each file is shown in sectors (512 bytes). It takes no more time than a normal DIR, but tells you more and doesn't scroll away.

The screen-dump (see the figure '*CueWell*' directory display) shows *CueWell*'s large-character display, which appears very quickly as it bypasses QDos printing routines. The first snag is that only capital letters, underscores, and characters with codes

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other than 'not complete' caused the machine to lock up. This only happens if we load the Basic from *CueWell* - everything works as normal if we issue the usual LRUN command.

CueWell 1.2 runs in a minimum of 7.5K of RAM, making it just compatible with Quill on a 128K QL. You can't call up *CueWell* until you leave *Quill*, unless you have another 'front end' program that can make the Psion software multi-task. There's no way to reclaim the memory used by *CueWell* once you've loaded it.

CueWell 2.00

Version 2 has the features of version 1.2 plus some potentially interesting additions. You call it up with the SuperBasic command C2, so you may need to rename a variable in pidgin-Basic programs.

We tried putting this command in a compiled Basic program, in the hope of being able to call up *CueWell* at any time; the call worked, but the machine crashed when we pressed SHIFT CTRL Q.

Version 1.2 could only load a file once it was selected on the

CueWell has some useful features, like the fast sort and directory display

screen. Version 2 gives extra options; for instance, 'D' deletes the file, and 'C' copies it to another device.

The name of the copies file is unchanged, so all you have to do is type 'C', then a function key to indicate the destination device. There's no way to copy a whole batch of files in one go - you must handle them individually. Other front ends like ICE, Taskmaster and GRAM let you nominate and copy a group of files automatically.

'R' renames a file. You must type the new name, which cannot exceed 15 characters. There's still no cursor and no way to correct mistakes if you mis-type a character - this is annoying, especially as there's no documented way to escape at this stage. *CueWell* renaming is slower than the RENAME command of

SuperToolkit 2 and disk systems; the time taken seems to depend on the file size.

Keys 'A' and 'S' Add or Show a description of each file on a disk or cartridge. This is a sequence of up to 96 characters, thankfully entered using a normal cursor editor. This text is stored in a 17K pre-allocated file on the same medium as the files it describes.

You can call up text by selecting names in the directory display, but it takes a while for the text to be read from microdrive. Curiously, there's no option to 'view' the contents of a file.

CueWell 2 uses about 10K of code, but the supplied BOOT program reserved a whopping 60,000 bytes, and there was nothing in the eight-page A5 manual to indicate the significance of this value.

We consulted the piece of paper that comes with version 1.2 and tried reducing the space to around 15K, but then the machine fell over when we tried to read a file description. The keyboard stopped working, coloured lines rolled up the screen and the QL make a warbling noise. This is one of the QL's favourite responses to memory conflicts - Tony Tebby calls it the 'fart and pyjamas crash'.

UnWell

The new features in version 2 do not seem to have been tested very carefully. There's no report if you fill up a disk or tape while trying to copy a file that's too big to fit - the first part of the file is copied, but there's no message to warn you that the copy is incomplete.

CueWell 2 crashed unless we made it the first thing loaded into our QL. If we loaded any other code into RESPR memory the machine would lock up at unpredictable points thereafter.

Error-handling was rudimentary or non-existent. We tried copying a file to the same device we were reading it from, to see how *CueWell 2* would trap the error when it tried to create a new file with the same name as an existing one.

The disk buzzed briefly (odd, as we weren't using it), then the entire screen turned black, with no cursor. Thankfully the display re-appeared when we typed SHIFT CTL Q in the hope of release to SuperBasic.

The format option works OK with floppy disks and micro-drives, but there is no message if formatting fails.

We couldn't get *CueWell 2* to format RAM disks to a specified size. We tried stating the size when asked for the medium name - like a SuperBasic FORMAT command - but *CueWell 2* just deleted any existing RAM disk, without setting up a new one.

File names containing small letters are converted into CAPITALS throughout. Some other characters are not displayed, or appear as gibberish. If a name contains un-recognised characters *CueWell* refuses to do anything with the file.

QDOS lets you use any characters you like in file-names - even ENTERs or a null string - but *CueWell* can't cope with accents, control codes, square and curly brackets, or the Copyright sign that marks the start of CP/Mulator file names.

In fact, the underscore character was the only one after 'Z' in the ASCII sequence that appeared correctly.

Oh Well

CueWell sorts, displays and prints directories clearly and quickly, as long as you avoid long or strange file names. File copying is much faster than the SuperBasic COPY command, but it can fail without warning.

CueWell may seem an upgrade to anyone using the old, bugged ICE front-end, but it is very limited compared with newer utilities like *GRAM* and *Taskmaster*. These cost around 30 quid, but they also help with windowing and task control. If all else fails, QL freaks use them to soak up the RAM in a Trump Card, and *CueWell 2* fits that dubious bill.

CueWell has some useful features, like the fast sort and directory display, and it's cheap, at £5 for version 1.2 or £10 for the latest code.

Even so, it's hard to recommend version 2 until it is fully documented, corrected and compacted. We'll report back when Rob-Roy Software sends us a revised version.

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