QUANTA

VOLUME 7 ISSUE 1 FEBRUARY 1990

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INFORMATION ON THE GROUP

Membership of QUANTA, the Independent QL User Group, is by subscription to the group's newsletter, which is published monthly. Membership details are obtainable from the Secretary. Membership of the group is open to anyone with an interest in the Sinclair QL and compatible systems.

Members requiring assistance with problems related to the QL may write to or 'phone a Committee member. An attempt will be made to put them in touch with a member who can help with the problem. Alternatively send a note to the Editor, and the problem will be mentioned in the newsletter.

Workshops will be arranged from time to time in various parts of the country. Copies of the group's constitution and annual accounts are available from the Secretary.

The group maintains a software library. Most of the programs are free to members. Library lists and programs are available from the Sub-Librarians.

HONORARY OFFICERS OF THE GROUP

Chairman	Alex Tegg School of Information Systems, University of East Anglia University Plain NORWICH NR4 7TJ	Membership Secretary & General Secretary	Philip Borman 15 Grosvenor Crescent GRIMSBY South Humberside DN32 0QJ Tel (0472) 349850
Newsletter Editor	Sarah Johnson The Corner House Loxley Warwick CV35 9JT Tel (0789) 842543	Treasurer	Sydney Humphreys Wychwood, The Street Bramerton, NORWICH Norfolk NR14 7DW Tel (05088) 463
Software Librarian	Leighton Davies Glanmor, Brynna Rd Pencoed BRIDGEND CF35 6PD Tel (0656) 860398	Industry Liason Officer	Dennis Briggs 53 Gilpin Road Admaston TELFORD Shropshire TF5 0BG Tel (09522) 55895

Submissions to the Editor should be on a Microdrive or disk - any format, in a 'jiffy' bag or similar. Please include a paper copy where possible. Submissions for the library should be sent in a 'jiffy' with return postage to the Quality Controller, David Johnson, The Corner House, Loxley, Warwick. Tel (0789) 842543

The opinions expressed in the newsletter are those of the contributors, and are not necessarily those of the Editor or Committee Members.

SUBGROUPS

Title	Location	Date	Contact
Essex	The Cock & Bell Inn High Easter	1st Sunday Every Month 2.30 onwards	Trevor Watson 9 Lucy Gardens Dagenham, Essex Tel (01) 592 5928
Solent	The College of Maritime Studies Warsash, In the Fire & Safety Centre	1st Saturday Every Month 1500 to 1900	Graham Evans (042) 121 3350 or Eric London (0329) 663501
Sweden	Physics Dept Chalmers University of Technology Goteborg	2nd Saturday Every Month 1100 to 1400	Johan Boman Toftaasgatan 73 S-421 47 Vastra Frolunda, Sweden
Mid Anglia	Robinson Hall Lolworth Cambridge	7.30 to 11.30 Every 2nd Monday	Peter Rowell 347 St Neots Rd Hardwick, Cambs Tel (0954) 210692
Leicester	Ancient Order of Forresters 35 St Nicholas Place Leicester LE1 4LD	8.15 every 2nd Tuesday of each month (ex July)	Peter Ash 53 Woodland Road Leicester LE5 3PG Tel (0533) 766857
Birmingham	Holloway Pub Holloway Head Just off inner Ring Road. Central Birmingham	7.30 every 1st & 3rd Monday	Mike Bedford White 16 Westfield Road Acocks Green Birmingham B27 7TL Tel (021) 708 2560
Mid Cheshire	The Merlin Pub Middlewitch Road Crewe	Every Monday 7.00	Alex Robertson 12 Bude Close Crewe, Cheshire Tel (0270) 500565
Merseyside	3 Barnard Road Birkenhead	Alternate Mondays	Don James 3 Barnard Road Oxton Berkenhead Tel (051) 652 7366
Northampton	Kingsthorpe Community Centre	2 to 5pm every 2nd Saturday	Terry Harman 304 Obelisk Rise Northampton Tel (0604) 842875
East Anglia	Guildhall Thetford	2nd Saturday Every Month 6.30 to 11.30	George Katsoulis 167 St Johns Way Thetford Norfolk, IP24 3NT. Tel (0842) 753843

Quantox (Oxon/Berks/ Bucks/Wilts)	Wheatsheaf Inn East Hendred Wantage Oxon	2.30 to 5.30 1st Saturday Every Month	Alex Waye Curly Cottage West Hendred Oxon, OX12 8RR. Tel (0235) 833284
South-West	Dartmoor Motel Ashburton Devon	Next meeting Sunday 11th March 2.30 to 7.00	Roy R.Johnson Flat 2 66 Victoria Road Exmouth, EX8 1DV Tel (0395) 275290
Bristol	Portcullis Fishponds	Sundays every 4th week	Chris Gregory 7 Argyll Street Eastville Bristol Tel (0272) 513653

If your sub-group is not mentioned here, write to the editor with full details for inclusion in future issues.

CALENDAR

February 10th	New Horticultural Hall, Westminster, London	All Formats Computer Show 10:00 - 18:00
March 4th	Bristol, Portishead	Quanta Workshop
March 24-25th	Northampton	AGM and Workshop

URGENT

Unless someone puts themselves forward for the post of treasurer, THE CLUB WILL CEASE TO EXIST. The club constitution states that we must have an elected treasurer to the committee. If you would like to take on this position PLEASE let Phil Borman know immediately. Sid Humpreys will be able to answer any questions related to the work involved.

AN EDITOR'S FAREWELL

It seems fate has taken a hand in forcing me to relinquish my post as Editor of Quanta a little earlier than I had intended. Also due to the capable efforts of Sarah Johnson both continuity and quality has been maintained which has made me feel easier about standing down.

Most of you will know that I suffered a small heart attack in October and could not work on the magazine at that time. I may have considered taking over again in December but I had to re-enter hospital due to a further problem with my breathing. With luck the problems may now be overcome but as Sarah is able to cope with Quanta production until a new editor can be elected next year I have decided to leave things in her capable hands and retire from the scene now.

I have enjoyed my time as Editor over the past almost two years and have benefited from the friends I have made and the information exchanged in both directions.

I know that many members are happier that Quanta is now being produced on a full QL only system and It makes sense to do it that way. I would have done so myself probably if arrangements had not already been made to use Ventura on a PC before I really got into the job. Anyway, It's QL produced now and you won't have any problems with listing errors.

I hope that with the extra time I shall have available I may be able to contribute a few more hardware articles for Quanta and do not intend to fade away completely if I can possibly avoid it.

Well, thanks again for all the good wishes and I hope to pen a few items to members in the near future.

Good luck to Sarah Johnson and all future editors -

Roy Barber, 44 Dallin Road, Bexleyheath, Kent. DA6 8EJ
16.12.89

NEW SUB-GROUP?

Would any Quanta members in Dublin and/or Ireland care to contact me with a view to forming a contact group (be it formal or informal) to swap news/views/information or problems.

Gary Cooke, 25 Ventry Park, Cabra West, Dublin 7, Ireland.
Tel: 384605.
(At the time of printing there are 12 members in Ireland. SJ.)

REPORT OF THE FIRST ITALIAN QL USERS MEETING

As you probably know, the first Italian QL meeting took place on Saturday 23-9-1989, from 0900 to around 1900. It was a good success, with slightly less than 150 QL users in all. We had five firms (three English and two Italian) and three clubs/associations. Most of the participants were Italians but we also had some representatives of Europe and Middle East. Among others, many thanks to Mr Ian Pizer of Quanta, who came from Geneve, Switzerland, and to another QL user who came from Israel (to be more precise, he was already on holiday in Europe).

The meeting was really two things at the same time; a congress and a fair. The congress took place in the main room of Villa Alba and lasted the whole of the day, with 11 presentations about many QL related matters.

Mr. Giovanni Zane of the organiser committee, opened the congress with a brief speech about how the meeting was organised and what were its main intents.

Mr. Guido Masoero of SPEM then spoke about his new QL hard disk, soon to be on the market. It is something like the Miracle one, and claims to be 7 times as fast as a floppy disk drive.

Mr. Stuart Honeyball of Miracle System talked about the first successful QL hard disk, the new 40 megabyte unit shown in Italy for the first time ever. Miracle had two hard disks with them, and they were literally 'stolen' from their hands! Loading speed was found to be up to 110k per second!

Mr. Paolo Montrasio spoke about his very good Core War development package for the QL. It is a Public Domain program that can be equally a game, a strategy match, or a programming training area. This program runs even on 128k QLs and should reach the Quanta library very soon. (It has just been included. ED)

Mr. Freddy Vachha opened a long demonstration session of DP software. We saw demonstrations of the Editor Special Edition, Professional Publisher, Lightning Special Edition and the marvellous PC Conqueror, a new IBM emulator....and how fast it is! It can almost match a real 4.77 Mhz PC-IBM if run on an Atari ST QL-emulator or Thor XVI.

In the afternoon the congress continued after a brief pause for the lunch. I, Eros Forenzi, spoke about two topics: a brief demonstration of Text87, and a list of possible upgrade paths for those who are looking for something beyond twin disk drives and 640k. Well there are at least ten different accessories that let you stay with the QL and increase its power.

1) Atari ST QL-Emulator (hardware).
2) Tony Tebby forthcoming QL-compatible operating system, to be fitted on an Atari ST (software).
3) ABC Elektronic Mega-Ram.
4) ABC Elektronic QL hard disk.
5) Miracle hard disk.
6) Miracle Trump Card.
7) Thor XVI (not really a bare expansion card!).
8) Mike Lilley board (based on Quanta reports)
9) Rebel hard disk.

I did not really speak about all the above, only about half of them, but I have included the rest in the list here for completeness. About Text87, buy it, it really chucks Quill out!

Mr. Filippo Ghilardi then spoke about a very good Italian communication program for the QL: QLCOMM. It can operate correctly with Xmodem and even at 2400 baud.

Mr. Giuseppe Zanetti then talked about his good desktop publishing program, Impress Publisher, much more powerful than Front Page, and still it runs with 128k.

Mr. Romaldo Parodi spoke about a very interesting expansion card that can alternatively act as an extra 192k of eprom space or 192k of RAM space, or a bit of both. It addresses over the 512k expansion RAM area and it is controlled via little switches. It is battery backed up, so (if you already have a 640k QL) you actually have almost the equivalent of a Trump Card or a QEPROM board or both.

You can burn your favourite programs in static rams, without even needing an eprom programmer! Great! I must thank Mr. Parodi for providing a new QL hardware development almost every month. This has been the most exciting, but it is not quite the last to come!

Mr. Roberto Innocenti spoke about a new development in QL graphics. How to have more colours and resolutions without stipples (up to 32 REAL colours in mode 4, in fact)!

Mr. Augusto Delsante then talked about his wonderful animation program QL Film. This is a supreme demo that puts the Amiga to shame! You can digitise many images from a video recorder (you need the Spem digitiser) and then animate them at TV speed (25 frames/second). Every 640k QL owner can run the program and see the many animations already provided (about 10, each up to 3.5 seconds long). Use a B/W monitor if you can, because it gives you the illusion of watching a real B/W television!

Two hardware freaks closed the congress, Mr. Roberto Amorosi and Mr. Alberto Rubinelli, with details about analog to digital conversion applications on the QL.

Three othe QL users did not have the opportunity to do their presentations, because the evening was approaching and many had already left Villa Alba. My apologies to them. We aimply had too much in the programme, and could not maintain the timings.

About the exhibitors: There were five firms and three associations.

Miracle Systems had two 40Mb hard disks, several Trump Cards and Expanderams, and other pieces of QL hardware accessories. Many thanks to the Miracle team who came to Italy by train as far as 50Km away from Villa Alba, then, from there to Villa Alba they travelled by bicycle...yes, I mean bicycles, those no-engine two wheel vehicles! We all have words of admiration for the enterprise spirit of these two English QL users; well done Miracle!

Digital Precision had its complete range of QL software, including a beta-test copy of PC Conquerer which was used for the demonstrations.

EEC Ltd had many microdrive cartridges at bargain prices (all sold within a few hours), several complete QLs, power supplies, some working QL pc-boards, and other bits of QL hardware. I liked the very low prices of everything, never found here in Italy. Many thanks to EEC boss, Mr. Bill Richardson, for coming.

Spem had the first functioning unit of its QL hard disk. It appears to be less safe than the Miracle one (it lacks the in-built autoparking of the Miracle hard disk) but almost as fast.

Human Interfaces is an Italian firm that work with THORs in the business area. It had two THOR XVIs on show, one hooked to a Tandy laser printer. One of the machines was a normal one (the same as you can get from Thor International). The second computer was really a super Thor XVI in IBM AT tower clothes. Human Interfaces have put a Thor XVI, twin 720k disk drives, 40 Mb hard disk and two megabytes of ram, into a new case (a tower configuration, like many of the latest i386 MS-DOS compatible machines). This souped-up Thor was really impressive, and was networked with the other Thor XVI driven by an improved network device (MEM device, QL World July 1989 p38). Mr. Luca Pivato and Mr Fulvio Morsella (authors of MEM device driver) are in effect Human Interfaces. Address: Human Interfaces, Piazza Trevi 86, 00187 Roma, Italy. Tel: (06) 6780970.

Club-Ware had many of its members turning up during the day. Organiser Roberto Orlandi was busy all day demonstrating many QL programs made by Club-Ware members. This club has remained the only one who regularly publish a bi-monthly QL newsletter of about 20 A5 pages: News-Ware.

Gruppo QL Grande Lago was the real organiser of the meeting. Many thanks to its members for the great work done to make all this possible. Most of the QLs, monitors and disk drives were G.Q.G.L.'s.

QItaly Group was in fact myself. It is not a real association. I just coordinate the making of a public domain Italian QL disk magazine: QItaly 1 to 8. More details about QItaly next time.

So far so good. We have nearly finished, at last. Many thanks to those who brought and installed the giant video projector (all demonstrations of programs in the congress section were done on this super video hooked up to a Trump Card twin disk QL). Many thanks to God, for having provided a sunny Saturday. Many thanks to to everyone who came.

We hope to be there again next year. See you then. Goodbye!

Eros Forenzi, Via Valeriana 44, 23010 Berbenno (SO), Italy.
4.12.89

A PROLOG INTERPRETER FOR THE QL

Imagine you are a QL. Your owner treats you like a little slave, throwing commands at you like

```
SAVE boot     or     printf ("hello world\n");
```

Wouldn't you lock up after a while?

This rudeness is typical of the so-called 'imperative' programming languages like SuperBasic or C. There are, however, more polite ways of treating your QL.

Some time ago I came across the book 'The Art of Prolog' by Leon Sterling and Ehud Shapiro (M.I.T. press, Cambridge, Mass, 1986). It is a beautiful book that gives a refreshing look at computers from the viewpoint of 'logic programming'. A logic program is a collection of facts and rules. One of the first was written by Aristotle:

```
mortal (X) <- man (X).
man (Socrates).
```

The first line is a rule, stating that all men are mortal, the second one is the fact that Socrates is a man. In this programming style you don't give commands, instead you ask polite questions like:

```
? mortal(Socrates).
```

to which your QL will gracefully respond:

```
true.
```

affirming the conclusion which Aristotle reached more than 2000 years ago.

You might even ask

```
? mortal (Who).
```

and get the answer:

```
true.   Who = Socrates
```

Logic programs can be executed in several ways which all involve some kind of searching for matching rules or facts in the program. In our example, your QL would match the question

```
   ? mortal (Socrates).
with the rule
   mortal (X) <- man (X).
reducing the original question to
   ? man (Socrates).
```

This is a fact in the program, no open questions remain and your problem is solved.

The computer language Prolog (derived from French 'programmation en logique', programming in logic) is the simplest and most widely known language of this type. After its invention in the early 70's it was not immediately recognized as the powerful language it really is, but nowadays it has become very fashionable and many implementations of it exist for almost any computer.

Now even our dear QL has one: I made a simple interpreter which you can get free from QUANTA, together with some example programs (a Prolog version of Weizenbaums classic 'ELIZA' program, a program performing symbolic differentiation and a simple one for the ubiquitous N-queens problem). The interpreter is written in C (the Lattice/MetaComCo compiler is much better than many of you think and if the PDQL compiler is an improved version of it then it must be very good indeed). The 'unification algorithm', performing the matching of questions against rules and facts, was written using the excellent GST macro assembler for maximum speed.

The program needs an expanded QL and looks best under QRAM, it is compatible with Taskmaster and the usual screen accelerators. No Prolog interpreter will ever be blazingly fast and this one is no exception, but I tried to make it as fast as possible without sacrificing the clarity of my original design.

I know you will enjoy Sterling and Shapiro's book; I hope you will have a good time using my interpreter.

Hans Lub, Maliesingel 71, 3582 AB Utrecht, Nederland.

SOFTWARE COMPATIBILITY

As the QL gets more and more software it becomes difficult to predict whether or not products will interact. This is not helped by 'knocking' copy in some magazines! Quanta has an important role to play in encouraging co-operation. At the last few Quanta workshops I've discussed compatibility with many users, and in particular with programmers David Walker of PDQL and Tony Tebby of QJump. This note discusses some of the progress we've made.

All QL software developers share a responsibility to protect and preserve compatibility. This can mean a lot of extra work, but it's worth it - otherwise we face an ever-shrinking market for QL software. As the author of Supercharge, Speedscreen and QL World's DIY Toolkit, and designer of Turbo, I've had a lot of practice adapting code as new products are released! We put a great deal of effort into testing and ensuring compatibility, as configuration diversity is one of the QL's greatest strengths.

SPEEDSCREEN and QRAM
Both CodeWorks and QJump produce products that improve the performance of the QL while retaining compatibility with older programs. In the past this has led to conflicts between enhancement packages, such as QRAM and Speedscreen, which were developed at much the same time. These conflicts are now banished, as a result of work by QJump and CodeWorks.

Both Speedscreen and QRAM contain code to correct a ROM bug which stops MODE working properly if the display device has been re-defined. Incompatibilities only crop up if both corrections are in force at the same time.

Each Speedscreen customer receives eight versions, suitable for a range of configurations. From release 1.21 onwards, version 'P' of Speedscreen has been compatible with current releases of QRAM in all display modes. Very early customers may return prior versions for a free upgrade.

The other versions of Speedscreen work fine with QRAM in display MODE 4, but if both MODE 4 and MODE 8 are required the QJump utility FIXPF should be used to re-define the MODE command, after loading Speedscreen and before loading QRAM.

Speedscreen version 'P' is a small version, intended for MODE 4 only - but it works in MODE 8 too, speeding up scrolling and window clearing, in conjunction with the QRAM MODE correction. QJump's FIXPF removes the redundant MODE correction in other versions of Speedscreen. FIXPF should not be used without QRAM.

SPEEDSCREEN and C tasks

Many Quanta members will be aware of a bug in Metacomco's QL C compiler which means that incorrect parameters can be passed to QDOS devices, including the display. C programs are fussy about the value in the high word of register D1 when text is output with IO.SSTRG. This bug does not affect calls to Sinclair ROM code, but it deviates from the QDOS standard and hence causes problems for enhancements which follow that standard, such as Speedscreen.

The bug in the compiler library can cause problems for users running C tasks such as PDQL's DiscOver, Multi-DiscOver and Digital Precision's XOver. These problems have been fixed in two ways.

1) A new C compiler library has been developed by PDQL. This conforms to the QDOS specification and thus works perfectly with Speedscreen. Versions of Multi-DiscOver from 2.13 onwards are compiled with the new library; corrected versions of other commercial compiled C tasks should soon be available from the original suppliers.

2) Creative CodeWorks has developed a modified version of Speedscreen specially for users of the Metacomco C compiler. Thus they can gain the fast displays of Speedscreen without the need to re-compile their programs.

This version, 1.29, has been developed as part of work on the enhanced Speedscreen ROM in Rebel's fast QL hard disk system. Version 1.29 is slightly larger than earlier versions of Speedscreen, but functionally identical.

Upgrades to version 1.29 are available to registered owners of Speedscreen who return their master disk or cartridge to CodeWorks at PO Box 1095, Harborne, Birmingham B17 0EJ. The upgrade price is £6.50 for ROM or RAM versions.

FAST THOR GRAPHICS

Thor XVI users may have been a bit disappointed by the PIXEL%, PLOT and DRAW code in recent issues of QL World. The new commands work very fast in the QL's MODE 4 and 8, but the version in the magazine did not support the Thor's unique 16-colour MODE 12.

After some pestering from Thor enthusiasts, I've been in touch with former CST engineer Graham Priestley, and worked out how to support MODE 12. You'll need an 'RGBI TTL' monitor, as used with many PCs - an old QL 'RGB TTL' monitor can't handle more than 8 colours.

The new versions of PLOT and DRAW pick up the MODE 12 ink colour, or stipple. PIXEL% now returns a number between 0 and 15, with codes 0 to 7 matching MODE 8, and 8 to 15 for the 'new' colours.

The changes are a bit long-winded to print in Quanta, but I can supply the full source and code for all three routines on request to any Quanta member who sends proof of membership and a formatted Thor disk to CodeWorks address, above.

WORK IN PROGRESS

I'm still plugging away with work on Quickfax, and am ploughing through the QPTR documentation at the moment to make sure other planned releases work despite QRAM. I'd recommend QPTR to anyone who like QRAM and finds the QL Technical Manual exciting to read. CodeWorks has two Secret Weapons in the works at the moment, besides the less-than-secret database project, which is approaching its second birthday. Your patience is appreciated!

DIY Toolkit has taken up a lot of my time during 1989, but I think it has been worth it, particularly in view of collaborations like MEM and Taskforce. I'm running out of ideas for new commands, which is why recent issues have alternated the DIY column with reviews and information about ROM bugs. Please write to QL World if you want new commands written - it's definitely the cheapest way to expand your QL!

This note was typed with Psion Quill running on a 640K QL with Minerva 1.63 system ROM, Speedscreen version 1.29p, QJump HOTKEY version 1.12, QPTR toolkit 0.06, QRAM 1.16, PTR_GEN 1.18, and WMAN 1.10. How's that for compatibility?

I'm now using Minerva all the time in my main QL. As Stuart McKnight pointed out in the November Quanta, Minerva is an ideal complement to Speedscreen; Minerva does not speed up QL text output, but takes full advantage of Speedscreen. Quanta members are entitled to ten per cent discount from CodeWorks, so Speedscreen costs £18 on disk or cartridge, or £27 on ROM.

Minerva has properly integrated ROM code to speed up graphics and floating point operations. Minerva speeds up all QL maths and graphics, including ellipses and programs that call the ROM RI package directly. It's a snip at £25 (OK Stuart?).

Keep up the good work, and play; I hope to see some of you at forthcoming workshops.

Simon N Goodwin
6.11.89

FITTING A SWITCH MODE PSU

Those of you who have dismantled their QL's and put them in proper boxes and fitted real keyboards no doubt will also have added better power supplies such as switch mode units. These are more efficient and therefore cooler running and are the PSU's used in all modern computers. If you are at the stage of considering such a step here is some information on how to proceed. I am not including any help on where to put the PSU as you will have made up your own minds on that. I will point out that it must be installed in a suitable box out of harms way as most of these units are sold uncased and mains voltages are on many accessible components therefore make sure it is not in a place where it can be touched!

The units I have used are Astec 65 watt uncased supplies available at about £20 from such suppliers as Loutronics and similar surplus dealers. The Astec unit has supplies of 5 volts at 6 Amps, 12 volts at 1.5 Amps, 12 volts at 2.1 Amps and -12 volts at 0.25 Amps. I have not found suitable plug-in connectors so have soldered wires to the pins to connect to the QL.

Wiring to the QL is straightforward apart from one aspect, that's the supply to the add-on boards which I will come to later.

On the QL first remove the 5 volt regulator, just unplug it and remove with the heat sink for now. Cut off the 3 pin regulator plug and connect a thick wire from either the old regulator centre wire or if you can get at the under side of the QL board you can solder it to the common point where the old centre wire fits but take care as most QL's have a bodged extra wire fitted there by Sinclair. This wire goes to any of the PSU common connections. Now fit a wire from the PSU 5 volt connection to the left wire or solder hole vacated by the old regulator or its wires. That's the one farthest from the reset switch.

Next find the two regulators IC's 36 and 37. These look like plastic transistors and are found near the reset switch - IC36 between the reset switch and the innermost network jack socket and IC37 near the old 5 volt regulator metal supporting pillar. IC36 is the minus 12 volt one and it's connection nearest the reset pushbutton needs to be lifted from the board so that a wire can be connected from the board at that point to the -12 volt PSU connection. You can leave the rest of the regulator soldered in or remove it entirely. If you leave it in bend the unused wire up out of the way.

Next do the same with IC37, the plus 12 volt regulator but this time connect your wire to the left hand pad farthest from the reset switch and next to the negative wire of the large (usually blue) 470uf. capacitor. Again, bend up the unused regulator pin or remove the regulator. Connect to the PSU V2 or 12 volt 1.2 Amp supply. That's enough to get the bare QL running but DO NOT switch on yet as the PSU will not stabalize until a load is connected to the V3 2.1 Amp output. The Astec supply uses this output as a regulator reference and if a load is not present you may get damagingly high outputs on all the supplies. If you are not using an Astec unit find out which output provides the regulator reference and make sure it is loaded by something. Failing any information run the supply with say 1k 6 watt resistors on all outputs and monitor the supplies; then remove the loads one by one and check for the 5 volt output departing from 5 volts. When it does you have found the line that provides the reference and it must be loaded by something. You could solder the 1k resistor permanently on the reference supply to common to play safe but I feed my disk drives from this supply and just ensure that I always have at least one plugged in.

That should be enough to get a bare QL running but we still have to deal with the Sinclair provided 10 volt supply for peripherals and if you are using them the mdv motors.

The easy and usually acceptable way around this is to simply couple the 12 volt wire to the remaining unused wire or solder hole where the original regulator fitted. (The one nearest the reset switch) This will provide 12 volts to all the points that were originally given raw 10 volts from the Sinclair supply and as all the devices have their own regulators, including the mdv's they should work. This means any add-on boards get 12 volts instead of 10 volts but I have not found any of mine overheat. Some may so you should test by putting your finger (Carefully) on each regulator of any plug-in cards. If the regulator is too hot to touch continuously after being on for about 1/2 an hour it will be advisable to reduce the supply to them.

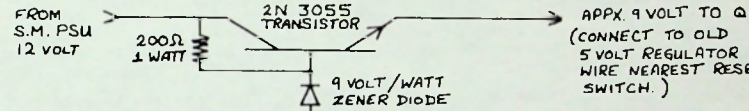
If the 12 volts causes too much heat or you are just a perfectionist break the 12 volt lead from the PSU and insert a simple regulating dropper as I have done on one occasion. This can consist of a cheap power transistor with a zener diode and resistor as shown in the sketch. this will provide about the ideal 8.5 volts at up to about an Amp and all your regulators should be cool.

The other alternative if you don't want to bother with mdv's is to join the original 10 volt bus to the 5 volt line by connecting together the outer pads or wires of the old 5 volt regulator (remove the 12 volt wire for this) and short out the regulators on all your add-on boards thus providing them with the stabalized 5 volts from the PSU. As you are unlikely to approach the 6 Amps available this is the best solution but does not allow the use of mdv's unless you separate their supplies. Also there may be some peripheral boards that need the 10 volt supply for something - check this first.

I am using the Astec units on two of my QL's and have no problems. One of the units blew up quite spectacularly and I thought the attached QL must have been damaged but connecting a replacement PSU showed no problems and I am in fact typing this on that machine.

These PSU's are quite capable of supplying the usual quota of disk drives so one of these units can provide all the power normally needed by a system, except of course for the monitor. The smoothing provided by switch mode units is usually better than that provided in the QL so you may well get additional spin-off improvements.

Finally, I repeat - keep fingers away from the unprotected PSU components, mains voltage supplies are dangerous.



Roy Barber.

BACK TO THE BEGINNING

It was a bit sobering to come across a member this summer still operating with mdv's only, no memory expansion, AH ROM and version 2 Psion software. One can perhaps get a bit smug about one's own progress to more sophisticated things. So to begin with beginners...

The very beginning is power supply. I thought I'd left such problems behind me in Bahrain when we took 2 QL's and one TrumpCard back to Yorkshire with us this summer. While I use Dennis Briggs type power supplies here (supplied by Norman Vacher) with a Tony Firshman mains cleaner, I just plugged in bog standard QL power supplies in Yorkshire, and yep, the same old things happened. First came lockups even though I'd long since substituted 78S05's in the QL's, so an urgent phone call to Dennis for two of his p/s's. Then came a power glitch which mucked up open files, so off to Redcar to get a power cleaner (I couldn't raise Tony on the phone). Reliability starts at the mains socket.

My wife was busy churning out docs to try and catch up on her OU assignments on the 128k machine and the same old problems started developing very soon with def_tmp files tripping over themselves and fouling up everything, so another urgent phone call to Miracle for a 512k Expanderam. (I did this so I could mount a CST interface to read BBC disks - there are some things TrumpCard can't do.) Quill starts overlaying your doc to mdv with a file called def_tmp when your doc gets too big to be held in memory. Reliable handling of docs of any length needs memory expansion, particularly if you've just got mdv's. I managed the other day quite unintentionally to make Xchange grind to a halt with Trump Card and a full meg of memory with a doc that grew to over 15000 words and over 50 pages. Well, obviously a single doc that size is ridiculous anyway, so I split it. I was able to get enough action out of Xchange to manage that although it wouldn't take any more text entry or editing. So, point two of back to the beginning is to match your memory size to your doc length.

I'd given some programs to my friend with the Psion V.2, and he can't load them. Point three of the beginning is get hold of at least V.2.3, and preferably V.2.35/2.38 of the Psion software if you don't already have them.

Oh yes, don't forget Cartridge Doctor for recovering busted files. That was the very first program I ever bought, and it has been the most valuable and the most used, apart from the Psion suite itself. And its useful to remember that much of your file is on the def_tmp file, as I have often been able to rescue most of a busted doc file from the def_tmp file when the regularly named file to which I'd been saving proved unco-operative. Call that point one and a half. Murphy's Law is the fourth law of thermodynamics, maybe even ahead of the law of gravity.

Next, use QUANTA. Make phone calls to members about problems and get the library. There's unbelievable goodies in there, and now that it's been reorganized it's easier to pick and choose. But if you have disks then I'd advise you to be greedy and take everything. With only mdv's it's an awful lot of cartridges. Of particular interest to the beginner who has only mdv's are a lot of the utilities at the beginning of the library on fast copying, directories, etc.

While you're doing all this, get to know your User Guide, and try to get the latest version. It will have "QL User Guide Second Edition" on the page after the title page, and 12/84 printed in the bottom left hand corner of a lot of pages to show that that was the date of the revision. There are still some glitches in it, but none that will really bother the beginner, and I found it a darn good introduction to the machine, to programming in SuperbBasic, and to using the Psion suite. Part of my job as a lecturer is to review all kinds of text books for "teachability", and by the standards of the text book market place the User Guide gets very high marks from me indeed.

After using the QL for a while the next thing you'll likely want to do is get rid of some of the annoying sluggishness, especially with Quill. Here the answer is part hardware and part software. The hardware part is relatively expensive - for memory expansion you're looking at a good chunk out of £100 at the best, though obviously how much you spend depends on how much memory you get. Disk drives, including interface, will put you well into the £100's. The first priority should likely be memory expansion since it's cheaper, and will mean that your mdv's only run twice in a session - once to load and once to save. But if you can afford to go whole hog, then Miracle's Trump Card plus disk drives package has got to be the best value for money around, not least since TrumpCard has Tony Tebby's Toolkit II built in. We've got two of them, one in Yorkshire and one here. If you're using a lot of cartridges, then it can be cost effective to get disk drives because of the money you will save on buying cartridges. That's how I justified my first venture into disks. One 5.25" disk costs around 50p, while 7 cartridges to hold the same amount of data will cost around £12 to £15. My pay back period was less than a year.

There sometimes seem to be problems finding cartridges. You can get them from the British Telecom sales office in London over the phone complete with the nice little storage box, and W.H Smith's in Middlesbrough stock them in both packs of 2 and the usual 4 in a wallet. They say they always have them in stock, so presumably would other W.H Smith outlets.

For software you've got basically two choices, well three choices now with Minerva. If you're mostly doing text and memory is limited then probably the best way to give Quill a boot up the backside is TurboQuill+. It modifies your Quill program (but note that it is version specific!) and really shakes up the handling. As a bonus it gives you a nice white cursor to indicate caps lock on and makes no drain on your memory availability. Jean was using TurboQuill+ with expanded memory and mdv's, and it thrilled her to bits - till I let her get hold of the disk drives, but that's another story. If your interests are more general, however, and you've got enough memory so that you don't mind giving away a little bit, then probably Lightning is a better answer as it will improve screen handling in all circumstances, and speeds up math processing as well. I made Lightning part of my boot program when running with TrumpCard.
And by this time you're not a beginner any more...

THANKS TO QUANTA FOR...
...Republishing Jan Jones' book, "QL SuperBASIC, The Definitive Handbook". I had sorely missed not having it and have made good use of it already. It by the way ranks a "magnum cum laude" in my "teachability" evaluation.

...The Tandata modem offer. At £25 it was irresistible. I had put comms at the bottom of my priority list, partly because of the absence of local bulletin boards here (though Norman says there is one...I'll have to check it out) but mostly because of the horrifically high international telephone charges from here. But someday we'll be back in the UK for good and obviously it will be almost essential then.

...Taking over the math package from Chalmers in Sweden. I've sent my £15 and eagerly await its arrival.

STATISTICIAN'S HANDBOOK
I have long been frustrated by the incomplete nature of the published tables for some fairly standard probability distributions. As a by product of the paper I mentioned, I have written a program in Archive to provide the cumulative probability and 1-cumprob (the other tail of the distribution) for the normal distribution, gamma distribution, Student's t distribution, the chi squared distribution, the F distribution and Beta distribution for all possible values of the parameters, degrees of freedom, etc. The program also gives the values of the gamma function, digamma function, trigamma function, Wallis' Integral, and the Gini coefficient for income distributions when they are modelled as gamma distributions. The whole thing is menu driven to act like a Statistician's Handbook - just put it in the background if you're using QRAM, for example, and call it up when you need to know a particular value, go to the appropriate "table", and enter the values requested. There is an indication of reliability on each screen, mostly 10^-14, sometimes 10^-12 but never less than 10^-10. This may sound like overkill, but back at the beginning I found myself going nuts with round off errors in SuperBasic, and switched to programming in Archive to salvage the situation. Many of the algorithms are very badly behaved in this respect. In the event I manipulated some of the algorithms to cut back on round off error, but while 16 digits - 6 for rubbish = 10 good digits, 8 - 6 for rubbish doesn't leave much except rubbish. There is a long doc outlining the algorithms, where they came from, and why I've manipulated them. A copy has been sent to the Quality Controller for the Library, but interested members are invited to contact me directly. Warning - it apparently won't load on V. 2 software.

TIMO SALMI'S STATPREP PACKAGE

This is in the Library, and I used it a fair bit in writing the paper. It is quite nicely laid out and very user friendly. It is a nice modular package in SuperBasic for data entry, followed by a variety of statistical analyses. It gives scatter diagrams and graphs, calculates correlation coefficients, etc. and allows manipulation of the data to try out non-linear models (logarithmic, polynomial, etc.). The program calculates the t values, F ratios, etc. for your data set; you can then look up the probability in the Statistician's Handbook. I've just been reading a photocopy from my brother in Canada of a long review article in the March/89 PC Magazine on statistical packages to run under MSDOS. Well, Timo's program can't quite compare with SPSS or BioMed, but it doesn't come off half badly at all compared to those reviewed, doesn't cost £300.00 and one doesn't have to be a walking sigma (as they used to say about the boys from Case) to use it.

TIMO SALMI'S LINPREP PACKAGE

Timo's companion piece on linear programming is also a very useful and user friendly program. It can accommodate enough variables to be genuinely useful to the person in business or government with a real problem to solve, (the number of variables in real life problems tends to multiply like rabbits) and gives the shadow prices and so forth for sensitivity analysis. I haven't tried it out on a "real" program, but did put it through its paces with a number of textbook problems from an Operations Research course I used to teach. Always my concern with these programs is whether with only 8 digits they will wander off into round off land, but the algorithms have been around for a long time and have a reputation for being robust beyond what pure theory would justify, so I think the user can proceed with confidence even without double precision capability. Someday maybe I'll try to add a routine to Timo's program to deal with integer programming problems (you can't schedule half an aeroplane). Or I'd be very obliged if someone else did. The point is that Timo's program is worth adding to.

Dr. S.E. Peterson, P.O. Box 33012, Isa Town, Bahrain. 9.10.89

CODE NAME QHD

Following the plea by Ron Barber in the October issue, here are some details of our hard disk system. We don't deliberately withhold details of our products it's just finding the time to put finger to keyboard; pressure is always on to develop the next product. However, I do think we owe it to QUANTA members to provide something extra. QHD stands for QL Hard Disk in case you were wondering.

Before work on a product is undertaken we must believe it to be something that people will see as good value at the projected selling price. It became obvious to us about a year ago that it was possible to produce a hard disk for the QL for a sensible price using a hard disk designed for the PC. Once components have reached a low price it usually means they are readily available and from several suppliers, two other factors vital to the success of a product. What we make is as physically no-frills as possible (in case any of our customers hadn't guessed) and although this may lose some sales to people who are swayed by appearance it keeps the selling price and development time to a minimum.

Well that's enough background, now let me explain to people who have never used a computer sporting a hard disk how much more pleasurable it can make a few hours at the keyboard.

One advantage of a hard disk is that since it is a sealed unit it should be more reliable than a floppy disk. This can lead to a false sense of security and it is

sensible to store valuable data on floppy too. The hard disk may never suffer an error but if there is a power surge or failure while data is being written then some or all of the files on the drive may be lost. Of course storing software on hard disk is a form of backup which saves having masses of diskettes lying idle. It is not really practical for anyone still operating a QL exclusively from Microdrives to change to a hard disk since it would require around 400 cartridges to back up a full drive of the current size. PDQL's hard disk backup program HardBack will allow this so I may have to eat my words. Good luck to anyone patient enough to try! The Hard Disk is aimed more at people who already have floppy disk drives of which they make heavy demands. Further, the current Winchester driver software needs around 55K of RAM to operate so this precludes unexpanded QLs.

The most obvious attribute of a hard disk is high speed when compared to other forms of magnetic storage but I believe that the main benefit comes from having all software and data files accessible from the keyboard. This saves rooting through piles of diskettes and looking at screenfulls of file names. With a hard disk this can normally be reduced to running a boot file from a directory named according to the application to be started. It is usually possible to keep the associated data files in a sub-directory within the application's directory which reduces screen clutter when doing a DIR of any particular directory. For example if QUILL is stored in a directory of the same name and a directory QUILL_DATA has also been created (making DATA a sub-directory in the QUILL directory) then doing DIR QUILL_ will only show one extra file name. Similarly, doing DIR QUILL_DATA_ will only list the data files.

The electronics which interface the QL to the hard disk controller card are quite simple although the design has mutated out of all recognition since its conception. We try and make all our products compatible and as the Trump Card already hogged almost all the address space in the QL the only place left to connect a hard disk was the ROM port. The ROM port is read-only but this did not present a problem; data is read from the port as usual but a byte to be written is supplied via address lines A8 to A1 using a word sized read. A word read allows the disk controller card sufficient time to latch the data. Address lines A9 to A13 are used for register selects and read/write control.

Several companies make use of the ROM port for their products (Eidersoft mouse, language compiler ROMs, SuperToolkit II for example) so the ROM port had to remain free. In order that the QHD device driver is loaded transparently its ROM must be seen first and the obvious way to do this is to provide circuitry which detects the QL being reset. The reset detection circuitry enables the EPROM in the QHD which pages itself out once the initialisation is complete. Code in the QHD ensures the QL looks at the ROM port again which, this time, allows any ROM plugged in to be read.

We never needed to know things like seek time or data transfer rate during the development of the QHD so I can't supply them. The best I can do is to say that our Hard Disk is over seven times faster than the Trump Card with floppies when doing a 32K LBYTES. EXEC uses the same routines as LBYTES so tasks load similarly quickly. The capacity of the current Hard Disk mechanism is 80156 sectors (of 512 bytes) but this is a maximum and may format to less than this if the disk has manufacturing defects. It is not easy to produce defect free surfaces to the standard required for a hard disk and it is too expensive to throw rejects away. This sector count will almost certainly change if we decide to use another manufacturer but it gives some idea of how much data could be stored for virtually instant access.

One last thing: come on DP, rewrite TURBO to work with MINERVA's second screen facility. Please!

Mike Tomlinson. Miracle Systems. 29.11.89

QL EMULATOR for the AMIGA

I had been toying with the idea of buying an AMIGA for more than a year, sure it looked a terrific machine on paper - it's graphical/sound capabilities were very impressive, and it was a true multitasking machine, unlike the ATARI ST.

On the minus side, when WORKBENCH (the WIMP front-end used on the AMIGA), was out of the way, the command line mode of operation seemed cumbersome, awkward and so slow compared to QDOS - no commands are normally resident. So, despite all it's flashiness, I felt the AMIGA was not a great leap up from the QL.

What changed my mind was that Phil Borman told me a QL Emulator for the AMIGA had been written, though no one he knew had seen it. It turned out that Rainer Kowallik, in Germany, was the author and that the emulator was not a commercial product, but Public Domain software!

Well, that was the clincher for me. I immediately went out and bought an A500 AMIGA. After a protracted search and various phone calls to distant parts of Europe, I found that the "Quantum Leap Emulator" was available from SOFTVILLE PD/Shareware Service (address below), for the unbelievable price of £3 !!

The emulator comes on just one disk, with documentation consisting of notes on the author, his reasons for writing it, details of the emulator itself, plus a very personal guide to QDOS and SUPERBASIC.

Various configuration startup-sequences are included, to suit different RAM sizes. So how does it compare with a real QL? Well, the really good news is that it runs programs at almost twice the speed of a normal QL. Rainer has used the AMIGA Blitter chip to handle the screen emulation, which frees the CPU for other tasks. This makes screen - updating very quick. Programs I have tried include The PSION Suite, MONQL, XCHANGE, MASTER-SPY, FILED, DISCED, SQUADRONS, MATCHPOINT (too fast to be playable though!) and all SUPERBASIC programs. These will run without any modification. This is not a complete list by any means, but only some of those tested.

Others I tried but which did not work correctly included QRAM, CHESS and DIGITAL's PC Emulator. There is a very good reason for their not working, which is explained fully in the documentation supplied. Apparently, the AMIGA cannot cope with the 'TAS' instruction (Test And Set), which is often used in QL machine code routines. This means that any programs which include this instruction are bound to fail on the AMIGA. That being said, Rainer has sorted out this problem and has written a program which replaces any occurrence of 'TAS' in real QL software with code suitable for the AMIGA to swallow.

The other major problem with the emulator is that any disks written to by the AMIGA running the emulator, cannot be read by a real QL. Now the converse is not true ie. any viable QL disk can be read on the AMIGA. This is disappointing, of course, but Rainer believes that the problem lies with his 'CRC' calculation routine in the floppy-driver code. If that is the cause of the trouble then I am sure it will be sorted out fairly quickly. He asks for help in this respect and includes the source code for his routines so that others may contribute enhancements or corrections where appropriate. He has plans to add the NETWORK driver and a recoverable RAM DISK (as is available on the AMIGA when in it's native mode). He also wishes to add the AMIGA 32 colour, extra half-bright, interlace and overscan attributes to his screen drivers. Rainer adds that he has not enough time as he would like to attend to these projects as he is involved in writing a thesis for his physics doctorate.

Incidentally, he complains bitterly about the unavailability of the 'English keyboard AMIGA' in Germany. Consequently, some keys do not work correctly in his emulator - the 'Y' and 'Z' are swapped round and the underscore is found on the '?' key. There are others too, which often means a fumbling search for some commonly used characters. In the short term this can be easily overcome by using the ALTKEY facility from Toolkit II, though what really needs to be altered is the QL/ASC table in the QDOS_ASM source code.

Apart from the MICRODRIVES and the NETWORK, all the standard devices are implemented: CON_ , SCR_, PIPE_ , SER1 , PAR , FLPn_. It must be said that disk access operations are very slow compared to those on a real QL, and it takes all of 8 minutes to format a disk! A useful tip included for cutting down on read - write times is included, which involves formatting a disk from the emulator, then transferring QL files to that disk. There are also routines to transfer files via the serial link between the machines (that is as an AMIGA / QL link).

All in all, I am well pleased with this amazing piece of software, despite the niggling bug in the disk write routine, and though I am not quite ready to part with my real QL just yet, the KOWALLIK Emulator is very close to performing the successful transplant of QDOS onto yet another 'superior' machine. What is most amazing of all is that AMIGA owners can now upgrade their machines for the princely sum of £3.00 !!
Emulator available (Catalogue code 'USPEC 13') from:-

SOFTVILLE PD/SHAREWARE SERVICES,
Unit 5, Stratfield Park, Waterlooville, Hampshire, PC7 7NX.
Tel: 0705 266509.

Price is £3.00 inc.
Author of the emulator is:-

RAINER KOWALLIK, Eisackstr. 14, 1000 Berlin 62, West Germany.
Tel: 030 855 866 5

Rod Crookes 29.11.89

MULTIDOS DISK ACCESS UTILITY

I developed this QL utility to read code and text files from the aging Video Genie computer which I used to write programs and over 200 magazine articles between 1980 and 1988. The program is on the disk COMMS_XFER in the Quanta library.

Quanta was founded by the same people who started the National TRS-80 and Video Genie User Group. Like many other Quanta members, I was once a member of the TRS-80 group. I've still got lots of useful stuff on Genie disks, even though the QL is now my main machine. After many hardware and software upgrades, my own Genie has developed a fault that stops it reading disks.

The Quanta librarian has three TRS-80s, and other members have large stocks of Genie disks, so I've decided to put my utility in the Quanta library, so other people can use it, for free. It was publicly demonstrated at the West Midlands Quanta sub-group meeting at the beginning of April 1989.

My QL program reads files from a wide variety of single and double density disks, regardless of the disk operating system that created the file on the old computer.

The Video Genie is a 'clone' of the Tandy TRS-80 Model 1 level 2. Along with the Apple 2 and Commodore PET, the TRS-80 was one of the first three home micros. Like the Genie itself, my program should also read disks created by compatible machines, like the PMC-80, System 80, LNW-80 or Tandy TRS-80 Model 3.

Back in the late seventies, writing a disk operating system was a popular project for keen hackers - rather like writing a RAM-disk driver is now. Consequently there are many different TRS-80 DOS formats, with varying degrees of compatibility. I have successfully read every TRS-80 or Genie DOS in my collection with this program.

My own DOS collection is made up of 35 and 40 track disks formatted in single and double density by TRS-DOS 2.3, IS-DOS (written in the UK), Newdos, Newdos Plus, Newdos 80 V2, LDOS 5.0, LDOS 5.1.3D, DOS Plus 3.4D, and my personal favorite, Multidos 1.2D.

The program reads single-sided disks with between 2 and 127 tracks, as long as your QL drive and interface can cope. You do not need extra RAM. I used a C8T Q-Disk interface with a 1440 sector Computermate drive.

Apparently a few QL disk interfaces will not read single density disks. My C8T Q-Disk had no trouble reading single density disks created by an obsolete Genie 1771 controller, or double density disks created by a 1791. My Genie drives write 40 tracks per inch (TPI), but I have had no problems reading 35 and 40 track disks on an 80 track 96 TPI QL/BBC drive.

The program is configurable for 40 or 80 track drives with any QDOS device name. You must have a QL disk ROM that supports direct sector access. To check this, enter this command:

```
OPEN #3,"flp1_*D2D" : CLOSE #3
```

If this is executed without an error, the Multidos reader should work on your machine. If not, you need an upgrade to run Multidos and most other programs that read 'alien' disk systems like PC, ST and CP/M. Upgrades for most disk ROMs are available from Care Electronics or QJump.

By default the program copies files from TRS-80 disk format to QL format without changing them in any way. However if you select the relevant option the program automatically converts documents produced with Tandy's Scripsit word-processor so that they can be loaded into The Editor or imported into Quill.

I have also used it to transfer Molimerx Pascal files, using another option that converts carriage return characters into the line-feeds the QL expects.

You can transfer Microsoft BASIC programs to the QL with the Multidos reader, but these must first be saved on the TRS-80 with the:

```
SAVE "name",A
```

option, rather than the normal:

```
SAVE "name"
```

The ",A" tells BASIC to write out the text of the program - like a listing - rather than Microsoft tokens, which make no sense to the QL.

The utility is intended to transfer program source and data files. There's not much point moving Z80 machine code onto the QL, as it won't run without the TRS-80 or Genie display circuit, ROMs and Z80 processor - dozens of chips in total. The QL has its own circuitry and machine language which is faster but very different. A TRS-80 emulator for the QL might have a better chance of running at an acceptable speed than a PC emulator, but it would be a very big job bringing scant returns.

With my program, the QL can read almost anything on a TRS-80 disk. The program disables password protection, and gives you the option of seeing 'invisible' and 'system' files as well as normal 'user' files.

The code comes in two versions: one compiled with TURBO and another to run under the SuperBASIC interpreter. The un-compiled version is slower, less friendly, and does not multi-task - but you can edit it. You don't have to own TURBO to run the compiled task, but you do need TURBO (or Supercharge and a Toolkit) to make a new compiled version.

I cannot offer to adapt the program for you, or guarantee that it will read all your disks, but I have put the commented SuperBASIC source and TURBO-compiled code into the public domain, so you can adapt it as you wish.

The code is specific to TRS-80 and Genie disks, but could be adapted to other disk systems, if you know the directory structure (don't call me...)!

I would be interested to hear from anyone who has managed to develop this program further, or knows how I can get my beloved Video Genie working again. Please enclose an SAE if you'd like a reply.

Simon N Goodwin,
c/o Creative CodeWorks, P.O. Box 1095, Harborne, Birmingham B17 0EJ.
5.11.89

OPD / TONTO KEYBOARD

Anyone wanting to put a fresh keyboard on the QL should look at the OPD/Tonto keyboard. There are some of these available for around £5. The existing matrix is not useable on the QL but there are 20 terminals to the PCB which is correct for the QL J11 (9) and J12 (11) connections. My suggestion for fitting the OPD/Tonto to the QL is as follows:-

Remove all screws from the PCB/Keyboard joint, cut all tracks on the PCB next to the key pin points, there are five diodes in the PCB which can be removed (you could use these for Roy Barber's real time backup, Quanta Sept 86). Next remove the 20 core ribbon, use "Solder Wick" or sucker.

You will now need either "wrapping wire" or a suitable wire from transformer, choke or armature windings. The next step is to connect 65 keys to the 20 terminals on the PCB in the correct QL matrix. All the qwerty keys are retained of course, but the other keys need careful thought. There are no function keys so I suggest using the first five of the numerical keypad (Some users may want to keep the numerical keypad, if so then it may be possible to use Alt/No. or Ctrl/No. but you will have to figure this out yourself). The Key caps can all be used with the following alterations, blank out third character on the numerical keys, use small sticky labels to alter the following keys.

Top row, 11 = £, 12 = \, 13 = [, 14 =], 15 & 16 blank.
Third row, 1 = Caps, 16 blank.
Fourth row, 13, 14 & 15 blank.
Bottom row, 9 & 10 blank.

Now follows the wiring sequence (all keys are numbered on the PCB, study these carefully as there are four pins for each key, these are linked internally and are top paired and bottom paired so only one top and one bottom needs connecting, the gaps between keys are smaller than the gaps between the paired pins.

The 20 terminals should be read as you look at the board with the keys underneath and the terminals at the top, J11/1 will be the rightmost terminal, numbering to the left. 9 is J11/9, 10 is J12/1 and leftmost terminal is J12/11. Use a length of ribbon cable (26 core is suitable, tear off 6 cores or if you use a QView Capsled then tear off four cores, the extra two can be used for the capsled), solder the marked core to J11/1 and the next 19 in order across the terminals.

```
        J11
Line 9  to 58 - 51 - 40 - 52.
Line 8  to 12 - 71 - 39 - 57 - 56 - 55 - 54 - 53.
Line 7  to 50 - 48 - 46 - 44 - 42.
Line 6  to 11 - 59 - 38 - 49 - 47 - 45 - 43 - 41.
Line 5  to 13 - 26 - 37 - 35 - 32 - 31 - 29 - 27.
Line 4  to 24 - 36 - 34 - 33 - 30 - 28 -  3 -  1.
Line 3  to 25 - 23 -  9 - 22 - 20 - 18 - 16 - 14.
Line 2  to 10 -  8 - 21 -  6 - 19 - 17 - 15 -  2.
Line 1  to 66 - 65 - 64 - 63 - 62 -  7 -  5 -  4.

        J12
Line 1  to 52.
Line 2  to 51 - 40.
Line 3  to 62 - 53 - 41 - 27 - 16 -  2 -  3.
Line 4  to 63 - 71 - 43 - 42 - 29 -  1 - 15 - 14.
Line 5  to 64 - 45 - 44 - 31 - 18 - 17 - 28 - 54.
Line 6  to 20 - 19 -  4 - 30 - 32 - 46 - 47 - 55.
Line 7  to  6 -  5 - 33 - 22 - 35 - 49 - 56.
Line 8  to 38 - 37 - 57 - 48 - 34 - 21 -  9 -  7.
Line 9  to 13 - 59 - 65 - 39 - 36 - 23 -  8.
Line 10 to 12 - 11 - 10 - 24 - 25 - 26 - 50 - 66.
Line 11 to 58.
```

The ribbon cable can be connected directly to J11 and J12 with the Tonto 20 way strip cut into a 9 way and 11 way (you may have to lengthen them with some short wire jumpers) and the Keyboard could be mounted on top of the QL Case if the original keys and the Sinclair name are removed.

For the "All in one box" fraternity, it may be more convenient to use a 26 way connector as used for disk cables, and have a remote keyboard. If so, I suggest mounting the Keyboard on a piece of hardwood with alloy or plastic angle trim.

Number crunchers may like to retain the numerical keypad, if so, then I suggest that they use CTRL/I for TAB, CTRL/SHIFT/[for ESC and the TAB key wired for]. The five brown keys of the numerical pad could be wired as Function Keys and the numbers are then wired in tandem with the top row numbers.

Peter Rowell, Quanta Mid Anglia Sub-group, Cambridge.
5.12.89

MEDUSA - a QL-compatible computer

Recent articles in Quanta have suggested that there is considerable interest in a QL-compatible machine with a bit more potential for expansion than is currently possible, along with a more powerful processor. The only alternatives available at the moment are the Steve Lilley board, which is restricted to the 1Mb address space of the QL, or the Atari-based QL emulator, which costs at least £455 for a sub-512k, single drive system, and cannot use existing QL expansions - if you've got a good QL

system already you can use nothing other than the monitor with an Atari. The Thor XVI is a nearly mythical beast, and suffers from the need for "Thor versions" of some QL software. Which software? Your guess is as good as ours.

Enter the QView International MegaCorporation. We'd quite like a machine with a bit of poke, at least 1Mb of usable memory, but making use of our investment in disk controllers and drives. We obviously can't do new custom chips, so anything we design has to use (a) off the shelf parts, (b) programmable logic (EPROMs and PALs), and (c) existing QL chips. A little puttering about with data books produces...

The Preliminary Tentative Draft Specification Discussion Document.

Requirement: a low-cost replacement for the QL, which in at least its entry-level form will be fully QL-compatible, to the extent of running QDOS from an original ROM (image?). The improvements at this level will be in reliability and an increased memory address space (4Mb using 68008FN). More provision for expansion in a number of areas: additional memory, additional peripherals both onboard and on expansion slots (at least one of these QL-compatible), enhanced processor, floating-point co-processor.

Implementation: base machine has 68008FN and glue TTL with a small number of PALs. QL custom chips to be used to keep compatibility as well as low cost - most customers will be able to save by cannibalising (one of) their QLs. Video will use 8301 with 64k of byte-wide video RAM and 8301 device driver ROM (optional) on a separate card - if video is of prime importance to a user it can be upgraded. Main memory on motherboard (up to at least 4Mb with enhanced processor option). Processor may be upgraded to 68020 running at various clock speeds. On-board locations provided for the following, starred items are not required for a functioning system.

68008	) processor, one fitted as standard
68020	)
ROM	for QDOS/Minerva/SMS2
RAM	512kb of 8/16 bit memory, DIL: 1/4Mb of 8/32 bit SIL
8302	interrupt/serial/microdrive/network control
8049	keyboard/serial/sound
* 1772	disk controller
* 68681	improved serial (2 channel)/timer
* 6850	serial keyboard
* 6522	parallel port/timers
* 68881	maths co-processor
* 37C65	1.44Mb floppy controller (alternative to 1772)
* 5380(?)	SCSI controller

Video board has sockets for:

8301	video/RAM controller
* ROMs	8301 device drivers/speed enhancers (e.g. Lightning)

Boards will be supplied with one processor, glue TTL and on-board RAM controller, video card with 64k video RAM, links set to use standard QDOS ROMs (68020 Minerva/020 or SMS2 only). Options include QL custom chips, disk controller and drives, case, optional chips (* above), serial keyboard, power supply. Design should permit upgrades to be fitted by the user - the 68020 upgrade will probably involve removing the 68008, putting in the 68020, changing a few jumpers and moving some chips.

Software: the basic operating system would be QDOS, Minerva, or possibly SMS2 if Tony Tebby felt it worth while (folding drinks vouchers always being persuasive). Support for such things as SCSI, 1.44Mb floppies, an improved serial port, serial (IBM) keyboard might well be patchy initially - it would seem reasonable to get the hardware out fairly rapidly, with new device drivers following on later.

Limitations and omissions: no provision for DMA or memory management: QDOS relies quite heavily on applications being able to access memory that doesn't "belong" to them. No improved sound facilities. Note that standard QDOS will not run on a 68020. No possibility of using a 68000, it's much easier to attach a 68020 to the QL custom chips, and the work required to replace these would be prohibitive. Sorry about that - I KNOW 68000s are only £10 and 68020s are £100. Expansion sockets are very expensive - we could economise by tracking for four of them, but only fitting one or two. We could go for the 68030 instead of the 68020, but it doesn't seem to be commonly available.

Price: difficult to tell without doing the hardware design and totting up board area, number of holes, and glue chips required. We're probably looking at a minimum of £150 for a bare-board system, requiring power supply, box, disk drives, keyboard, and QL chips and RAM to be added.

Jonathan Oakley, QView

A XVI OWNER BEGS FOR HELP !

I have been a QL owner since the early days and aside from those days when I wanted to throw it out the window, when the microdrives failed or it locked up, I am still a strong supporter. I am fortunate to have a THOR 8 and a XVI at work and a dismantled QL at home, I'll put it into the SPEM II box one of these days !

I would like to write an article which would educate and interest members. However my expertise or lack of it, is not up to it so my reason for writing is to beg for help. Although I have what I consider to be almost the Super QL in the XVI, all it needs is an expensive hard disk. My first problem is that as a QL World article confirms, 6.46 version is bug ridden. It seems that version 6.39 or 6.41 are more reliable.

In normal operation everything seems o.k. but forget running the Editor, it crashes everytime. Dansoft advertised and asked buyers to register and if they wanted to, to request the newest ROM. I did, twice, but nothing followed. I wrote on three further occasions but again Dansoft ignored me. I had hoped that P.M. Engineering could help, as they had a repair contract with Dansoft. But they no longer exist. I am looking for a 6.39 ROM or a 6.40 ROM. I am willing to pay whatever the seller deems reasonable.

My second problem is that the serial sockets on the XVI are din socket RS423. This means that owners upgrading from the QL, most of who purchased a serial printer or a Miracle Centronics Interface cannot print on the XVI. In the letters to Dansoft I asked for help. I contacted Miracle, twice by letter, no reply was received. I phoned and found that they thought that they could do it. I wrote twice again. I am still waiting. Can any member alter a Miracle Centronics Interface to fit the XVI. Again I am willing to pay for the IP and the alterations, etc. I can supply the diagrams of the connections which were sent with the XVI. I don't feel competent to make the alterations.

Dennis Briggs's article on how to cure lockups, etc. was fascinating. But many of us would be unable to attempt the improvements. Dennis does not seem to have time, I wrote. Is there not a market for someone handy with a soldering iron to undertake

these alterations. Would vendors like EEC not consider offering boards with the alterations?

I see various drives being used by the more adventurous and I saw an ad for 1.44Mb 3.5" Citizen drives at 59.00 each, which seem cheapish to me. Can such drives be used with Trump Card without alteration? Are the cable connections standard?

One problem I always have when writing financial reports is finding my calculator! I see Electrone selling IBM type keyboards with integrated calculators. Can these be used with the keyboard interfaces for the QL replacement keyboards and/or the THOR keyboards?

It surprises me that the only programmable database for the QL, Archive, is underexposed in the QL media. A database must be one of the most commonly used pieces of software, Yet aside from Chas Dillon's Wedding notes in the Library, Albert Russell and Mike O'Reilly's books (which only tell half the story), no one has written a comprehensive book on programming Archive.

Is Archive that much worse than Dbase or the others which seem to have dozens of books written for them? Trained programmers probably don't have problems with it but as an average user who has, slowly, written a few major applications, I find great difficulty in obtaining information. I still have great difficulty in using a number of files together and I know that my programs, while they work, could probably be halved by more efficient programming. I hope to submit the programs to the library. They may help those grappling with Archive and hopefully someone who tries them can help me improve them.

Does any one know if a run time version of Archive is available for PC4 on 'compatibles'? I travel a lot and so use an Amstrad PPC to run the Psion suite. Using a 'compatible' has convinved me that my choice of the QL was the right one. How can anyone use a computer that does not multitask and that has 'dumb' ROM? And 'they' scorn us!

David McCullagh.
28.11.89

HELP! - I need somebody.

By the time this letter appears in our magazine / newsletter I will be the proud owner of a Minerva rom. However, being completely hamfisted, I dare not lift the lid of my trusty Q.L. - never mind actually proggling (Spellbound didn't like that) about inside it. So here is my cry for HELP - is there a member in the Grimsby area who feels confident enough with things 'technical' to fit my Minerva rom for me?
{Phil has already obliged on this, but the following offers are still available. SJ}

I have little to offer Quanta in exchange for this kindness - no all-singing all-dancing program; or simple solution to an insurmountable problem; not even an interesting / amusing letter - my talents lie elsewhere (where I have yet to find). However (again), I do have one or two bits and pieces which new / poor members might find interesting but which I have outgrown;-

(M)Ice rom - no mouse I'm afraid
Qflash ramdisk, Front-Page Extra 2, GraphiQl all on microdrive.

All are the original masters with accompanying documentation and are totally free (p&p included). Anyone interested? Give me a ring after 5.00pm weekdays or 10.00am (I'm lazy) weekends.

Whilst I am putting finger to keyboard I must congratulate the committee and participating members for doing such a good job on the newsletter. To hell with single / double / triple columns, I couldn't care less. What impresses me is the fact that it arrives regularly each month, it is readable without squinting and the content is informative for both novice (me) and expert. Also I must comment on the service of the librarians - post order for four disks of programs at 5.15pm on friday, receive them back first post Monday morning - can't be bad.
Thank you all for your time and effort. Where would the Q.L. be without you?

Colin Julier, 13 Carlton Rd., Healing, Grimsby, Sth. Humb. DN37 7PN tel (0472) 883370

TASKMASTER BUG

I have been unable, despite many hours spent in the effort, to get my Atari MegaST2 running the Jochen Merz QL emulator incorporating Tony Tebby's drivers, to run the excellent front-end program Taskmaster which I have used with every satisfaction over a period of several years with my expanded QL.

I am sure I've read at least one report of Taskmaster being used with an Atari QL emulator and I'd be most grateful if somebody could assist me with information as to what needs to be done to run Taskmaster within the emulator environment.

With Taskmaster running, any attempt to load and call the Atari-English and Atari_Bin files supplied with the emulator just locks up the machine, requiring a reset. With the emulator software running, an attempt to run Taskmaster produces the same outcome.
I did approach Jochen Merz about this problem but he replied that he has no experience with Taskmaster and suggested that I should use QRAM instead!

For any respondent who may not wish to write to my Oz address above, my UK contact address is c/o Syblings, Walford Rd., Ross-on-Wye, Herefordshire, HR9 5PQ.

Don Atkins, P.O. Box 23, Waterloo 2017, Australia.
27.11.89
{Phil tells me that this is a known 'bug' in Taskmaster. SJ}

OKI MICROLINE 82A PRINTER SOLUTION

I've just received my first 4 copies of the QUANTA newsletter, and found them most interesting (should I also have received an introductory leaflet of some sort - this seems to be implied in some cases?).
{It is something which has been talked about a lot, and although much needed, no-one has got round to putting it together. SJ}

In your October issue, a reply to the Taxan/Kaga printer problem with a 2K RS232 interface buffer was printed along with a request for information on the Oki Microline 82A. Co-incidentally, I have an 82A which displayed similar corruption after the contents of its 2K buffer were printed. A read of the user manual, as opposed to the RS232 interface manual, provided the solution - pin 4 of the ser1 port should be connected to pin 11 of the printer port, which is SSD. Also, one of the DIP switches needs to be set to indicate the polarity of the SSD signal to be sent. This is because of the different functions of the handshaking lines, and I would recommend examination of the manuals for the printer in question to sort this out.

A brief summary of the handshaking on the Microline 82A with a 2K buffer is:

pin 4	RTS	Ready To Send. Notifies computer that printer wants to send data. Fixed at mark (i.e. of no relevance).
pin 6	DSR	Data Set Ready - notifies printer that data is ready. Connected to pin 6 on serl port, is set permanently high.
pin 11	SSD	Supervisory Send Data. Notifies computer that buffer is available for next data transfer.
pin 20	DTR	Data Terminal Ready. Notifies computer that printer is switched ON and in SELECT mode.

These may well also be applicable to the Taxan/Kaga printer.

In response to Sid Dimmock's request for help on the Microline 82A, the connections for an RS232 port are as follows:

QL pin	RS232 pin
1	7
2	2
3	3
4	11
5	5
6	6

QL pins are numbered from 1 to 6 so that 6 is nearest to the little tag thingy that sticks out of the side of the plug.

There are 3 sets of DIP switches when an RS232 board is fitted. The ones by the front panel should be set as follows:
For US ASCII character set, 1-4 all OFF, SW5-8 OFF.
For British (pound but no hash), 1, 3, and 4 OFF, 2 ON, SW 5-8 OFF

The switches inside at the back at the top right (1 bank) are set as follows:
SW1 ON, SW2-6 OFF.

The two jumper switches just to the left of the previous switches are both connected to the 'A' side.

Finally, centrally in the back (if the RS232 board is fitted) are two sets of DIP switches. The bank marked '1' should be set as follows:

SW1	OFF
SW2	ON
SW3	OFF
SW4-6	ON (9600 baud)
SW7	ON
SW8	OFF

The bank marked '2' are set as follows:

SW1	OFF
SW2	OFF
SW3	ON
SW4-8	OFF

If Mr. Dimmock needs further information I will be only too pleased to supply it, but I feel that reproducing the entire Oki manual in the Quanta newsletter might be considered as somewhat specialist.

Mike Fleming, 64 Cringlebrook, Belgrave, Tamworth, Staffs B77 2NQ.
25.11.89

CST RAM WITH EPROMS

I use a CST RAM-Plus 512k Memory Expansion with my QL (with JS software, maybe Minerva later). The CST handbook says that they will supply a kit to allow EPROMS to be fitted on the board. However CST at their new address do not answer my request for the kit. I would appreciate guidance on how to do this modification from somebody who has done it on their own CST memory board. I would send an international reply coupon to anyone who responds to my request.

Ian Pizer, 49 CH.Machery, 1292 Chambesy, Geneve, Switzerland.
21.11.89

NEW QL PROMOTION

EEC LTD, who are now the main supplier of new and Backup QLs are giving a year's free membership to QUANTA to their new customers who purchase a complete QL kit, and for members of QUANTA there is a £5 discount. The discount, at first glance would not seem to be of much value to members, as they probably would not need a new complete QL kit. However it gives them the opportunity to buy one for a non-member, so someone gets the £5 advantage, and QUANTA gains another member.

To any user of the QL it's advantages are obvious, but they cannot be explained in an advertisement, and first time buyers of a computer are likely to be confused by the large choice offered in the stores and press. QUANTA members are in a good position to demonstrate to acquaintances, friends, and relations the advantages of the QL as a really cost effective tool for so many purposes, and even as a hobby or toy.

There is no doubt that the QL is a strange and interesting 'beast' in the world of Computers. It has been declared extinct several times a year for at least 5 years, and yet 'clutches' of them are still living and quietly working away all over the world. EEC LTD's sales go steadily on, QUANTA's membership grows, and many new friends are made.

For the newcomer to computers the QL, besides being a very practical computer, has one unbeatable advantage. The starting price is ridiculously cheap, so that it is possible to experiment without spending serious money, and if the venture fails the loss is bearable as opposed to losing £450, or more. If the experiment succeeds as it usually does with the QL then it can be expanded to cope with most tasks. QLs do not often end up in the attic, in fact EEC LTD had two reports last year of QLs being rejuvenated for the next generation.

All of this is probably obvious to the QL user, but there are probably thousands of people 'out there' who have a suppressed longing to get their hands on a keyboard, or have come to the point where they have a feeling that a computer might help them in their tasks, but do not know where to start. They either do not know about the QL, or have been 'put off' by unfair criticism in the magazines, or can't afford to spend at least £400 for the computers in the advertisements. The forces of marketing today are persuading people to buy more than they need, or can understand and use. So it is up to QUANTA members and QL users to help these people. The people most needing encouragement are the young, the retired, the hobbyist, and the small business man or freelance who's efforts are starting to show promise.

Felix Fonteyn for EEC LTD.
Tel: (0628) 22822

LIBRARY PROGRAMS

I have sent 3 programs to the library:- Super_bank_bas & Super_bank_task (one is a turboed version of the other). It is a much more powerful version than my bank_bas program. It will handle up to 10 different accounts off of any device and loading and saving is by single key press for the main devices (mdv 1 & 2, flp 1 & 2, fdk) plus it will also load and save from any other input device. It is menu driven and riddled with pop up's. It is only for expanded machines.

Bank_bas & Bank_task (again basic + turboed). This an upgrade of my previous version with improvements (you cannot get stuck if you try to print; alter; totalise or delete with no entries in the account). You can abort a delete if you wish to. It is suitable for 128k machines. Also available with the super version is a program to convert the format of the records made by bank_bas to suit the super version (bank_alter_bas)

Words_bas & Words_task (basic + turboed). This program is already in the library but I have found a bug (just one) it will not save 9 letter words because of one missing line which is in the replacements, for those who wish to add it themselves and recompile, 2895 IF len%=9:ADD_TO_ARRAY WORD_9
R.C.Myers, 18 Mirlees Court, 45 to 56 Coldharbour Lane, Camberwell. London, SE5 9QW.

LIBRARY CORNER

The new American Sub-Librarian in place of Rich Bezan is:
Paul Holmgren,
5231 Wilton Wood Court,
Indianapolis,
Indiana,
46254,
U.S.A.
Tel: 317 291 6002

I have been asked by several members to give a guide as to postage charges when they buy media from the Library. The following chart is to be used as a guide ONLY, our kitchen scales although great for checking ingredients for our Christmas cake is not up to P/O standard!

All orders are sent Airmail, either Letter or Small Packet, Europe (including all EEC countries) has a single tariff, Non-European countries are divided into Airmail Zones, a guide to these zones below.

Airmail Zone A : Algeria, Bahrain, Israel, Oman, Saudi Arabia.
Egypt, Jordan, Kuait, U.A.R..

Airmail Zone C : China, Tonga, Papua New Guinea, N. Zealand, Samoa.
Australia, Japan, Philippines.

Airmail Zone B : Just about everywhere else! (YES it's ZONE B)

Firstly, for the Library Guide, 1 disk / 3 Mdv's. includes jiffy. Sent Airmail letter service for fastest delivery. (Hopefully!)

3 1/2 in. Europe = 41p : A/mail zone A = 74p, B = 82p, C = 91p.
5 1/4 in. '' = 41p : ''' '' A = 88p, B = 98p, C = £1.09p
3 x Mdv's '' = 41p : ''' '' A = 88p, B = 98p, C = £1.09p

Now for the bulk orders, I will list 3 1/2 inch first. You will note the Small Packet service is about 1/2 letter rate.

The weights shown are for the European rate which is in 50g steps. The Zoned rates are 10g steps, the postage for those Zones taken to the next 10g step rate, usually below the European rate.

Jiffy bag 140 x 200 mm Max capacity of 8 disks.

No of Disks	Total Grams	To Europe	Zone A Letter/SmPkt	Zone B Letter/SmPkt	Zone C Letter/SmPkt
4 =	100g	£0.60p	£1.58p/£0.78p	£1.78p/£0.97p	£1.99p/£1.07p
6 =	150g	£0.80p	£2.14p/£1.02p	£2.42p/£1.29p	£2.71p/£1.43p
8 =	200g	£1.00p	£2.70p/£1.27p	£3.06p/£1.61p	£3.43p/£1.79p

Jiffy bag 170 x 225 mm Max capacity of 12 disks.

8 =	200g	£1.00p	£2.98p/£1.38p	£3.38p/£1.77p	£3.79p/£1.97p
10 =	250g	£1.20p	£3.68p/£1.68p	£4.18p/£2.17p	£4.69p/£2.42p
12 =	300g	£1.40p	£4.38p/£1.86p	£4.98p/£2.41p	£5.59p/£2.69p

Jiffy bag 200 x 250 mm Max Capacity of 20 disks.

14 =	300g	£1.40p	£4.38p/£1.98p	£4.95p/£2.57p	£5.59p/£2.87p
16 =	350g	£1.65p	£4.94p/£2.22p	£5.62p/£2.89p	£6.31p/£3.23p
18 =	400g	£1.85p	£5.50p/£2.46p	£6.26p/£3.21p	£7.07p/£3.59p
20 =	450g	£2.05p	£6.06p/£2.70p	£6.90p/£3.53p	£7.75p/£3.95p

hy orders for more than 20 disks will be split between 2 Jiffys.
lemember, some of you will have Customs value limits on imports.

Now for the 5 1/4 inch disks. Including sleeves!

Jiffy bag 170 x 225 mm Max Capacity of 6 disks.

No of Disks	Total Grams	To Europe	Zone A Letter/SmPkt	Zone B Letter/SmPkt	Zone C Letter/SmPkt
4 =	100g	£0.60p	£1.58p/£0.78p	£1.78p/£0.97p	£1.99p/£1.07p
6 =	150g	£0.80p	£2.00p/£0.96p	£2.26p/£1.21p	£2.53p/£1.34p

Jiffy bag 200 x 255 mm Max Capacity of 18 disks.

10 =	250g	£1.20p	£3.68p/£1.68p	£4.18p/£2.17p	£4.69p/£2.48p
14 =	300g	£1.40p	£4.10p/£1.98p	£4.66p/£2.57p	£5.23p/£2.87p
18 =	350g	£1.65p	£4.80p/£2.28p	£5.46p/£2.97p	£6.13p/£3.32p

Jiffy bag 240 x 350 mm Max capacity of 40 disks. (Full Library)

20 =	400g	£1.85p	£5.78p/£2.58p	£6.58p/£3.37p	£7.39p/£3.77p
25 =	500g	£2.25p	£6.90p/£3.06p	£7.86p/£4.01p	£8.83p/£4.49p
30 =	570g }	Actual weight	£8.16p/£3.60p	£9.30p/£4.73p	£10.45p/£5.30p
35 =	620g }	shown for	£8.86p/£3.90p	£10.10p/£5.13p	£11.35p/£5.75p
40 =	750g }	£3.15p	£10.68p/£4.68p	£12.18p/£6.17p	£13.69p/£6.92p

Jiffy bag 120 x 180 mm Max capacity of 12 Mdv's.

No of Mdv's	Total Grams	To Europe	Zone A Letter/SmPkt	Zone B Letter/SmPkt	Zone C Letter/SmPkt
12	150g	£0.80p	£2.00p/£0.96p	£2.26p/£1.21p	£2.53p/£1.34p

Jiffy bag 140 x 200 mm Max capacity 20 Mdv's.

20	= 200g	£1.00p	£2.98p/£1.16p	£3.38p/£1.77p	£3.79p/£1.97p

Jiffy bag 160 x 220 mm Max capacity 30 Mdv's.

30	= 300g	£1.40p	£3.83p/£1.74p	£4.43p/£2.25p	£4.87p/£2.51p

Larger orders for Mdv's will be split equally between 2 (or more) Jiffys depending on size of order.

As can be seen from the above lists, the Small Packet service is quite cheap, and is usually the service I use, I would normally split the 40 disk order for 5 1/4 inch disks to 2 Jiffys in the case of there being a Customs limit for import value before you get stung!

However, the Small Packet service is now not available for European Countries any longer, letter service therefore is used.

The Small Packet service (Airmail) is generally rated to be within 2 - 4 weeks delivery, surface anything up to 12 - 14 weeks! Except to RWANDA, where surface mail takes at best 6 MONTHS !!

ALSO these countries ONLY accept Packets up to 500g : Australia, Bhutan, Bolivia, Burma, Colombia, Cuba and Papua New Guinea, any orders from these countries will be split so not to exceed this weight limit.

PLEASE NOTE. These are a GUIDE to charges you may expect for your media orders, they may be lower, or, higher depending on what Jiffy bags I get hold of, labels, string or plastic clips (for Small Packets especially) these scales are based on the current stock of Jiffy bags.

I am having problems with the Post, (who isn't) with apparantly several letters etc. being delayed for considerable periods before being 'found' and delivered, if anybody out there does not get a reply from me within (say) 4 weeks for over-seas orders sent direct to me, or, enquiries by letter within 2 weeks, would they please write again, or 'phone me.

Why ?.

David Johnson and I are having a running war with dear P/O at the moment due to lost/delayed/damaged/smashed letters/packets/parcels etc. (you name it it's done!) sent between us, even a recorded delivery packet has gone missing! (shame you say!) it's worth about £100!

Never mind ordinary mail zooming around the countryside with post-codes on it (I've stopped using post-codes for David with amazing results on delivery times), try it yourself and see!

All for now, watch this space.
Leighton Davies.

SMALL ADS

FOR SALE

An R.C.A. AR88D receiver, covers 350KHZ to 32MHZ, HEAVY! works great, has variable crystal 'notch' filter to remove near stations for CW operators, offers around £75. Buyer collects or by arrangement will meet somewhere.

A Marconi TF867A Signal Generator, 15KHZ to 30MHZ, HEAVY! Used for repairs and tweaking up of CB and other HF receivers, offers around £125, collected or as above.

AN I.C.L. VDU/keyboard unit type 7181/1/2, complete with the manuals/circuits, HEAVY! Does work but I'm not able to get it to do much as I just have not got the time to delve into it, fabulous looking monitor! Offers around £50, collected or as above.

A VHF/UHF Signal Generator, I used this to set up my VHF Amateur radio gear, covers 2 Metres, and 70 CM, HEAVY! worked last time I switched it on (August) offers circa £50, collect or as above.

Boxes (literally) of other Radio orientated gear, valves, high power transformers, chokes, capacitors, ceramic valve bases, etc, etc, etc, all must go, I need the room, when I get a chance I'll sort it and then send a list to Hon. Editor for you to peruse.

A TRS80 Colour computer 2 (I think) It's a 32K (?) version, does work, uses TV, with a box of cassette s/ware and some books to go with it, CHEAP! offers anybody?

An Apricot F1 with 512k RAM, new 3.5 DD/DS 630k drive, Infra red keyboard, mono monitor. Spare main processor unit. Spare keyboard. Plus tuturial software pack (MSDOS). £300. or very nearest offer.

Leighton Davies, address & 'phone number in front cover of QUANTA.

RE-INK WITH Q_INK

Having re-inked my own ribbons for the past year or so I can now offer a fairly cheap good re-inking service to QL owners through QUANTA. Is it a lightning fast service? No! It will be reasonably fast but we can not guarantee a 24 hour turnaround because it depends how many are sent in at any one time.

Will it make my old ribbon as good as new? No! Nothing can do that BUT it will give you a ribbon nearly as good as new, depending upon the original condition of the fabric. (I have only bought 1 new ribbon for my Citizen 120d in the last eighteen months. The printer is used extensively to produce photocopy ready printouts for Newsletters / Diary & Handbooks / Official Reports as well as my listings, graphs etc. I get through many thousands of sheets of A4 a year.)

The cost is £1.25 a ribbon (Citizen, Epson, Canon/Taxan, Walters, GLP, etc.) This is not a trial offer it is the standard price for QUANTA members.

Z88 EPROM ERASING for 50p. Again for QUANTA members only.

FOR SALE OR SWAP - ALL ORIGINALS WITH MANUALS

Speedscreen, BetterBasic, Digital 'C', Professional Astrologer,

Desktop Publisher Special Edition,

John B. Parkin, 13 Effingham Rd., Harden, Bingley, West Yorkshire, BD16 1LQ

Tel: (0535) 274160

WANTED

Circuit diagrams and other technical information on:

PCML b4 512k RAM card CPB 05-2

Sandy SuperQboard V1.16 84

Sandy Superdisk V1.16 AG

All costs will be refunded. Searching contact with anybody with a working SPEM / Sandy bus expansion board.

NEEDED A Quanta / QL hardware library!

Tom Erlandsen, Gerbeweg 31, CH-3280 Murten, Switzerland.

WANTED
Complete QL system, colour monitor, printer, TrumpCard, twin disk drives, good software etc. Reasonable price paid.
Louis Haylett, 19 South Galson, Isle of Lewis, Scotland, PA86 0SH.
Tel: (0851) 85453

FOR SALE
QL 640k JS ROM with Psion 2.3 software, Schon PC style keyboard. £130
Spellbound and Filebound (3.5") £15, Qapell £5, QL Technical Guide £10,
QL Entrepreneur £10.
Jim Turner, 11 Sandford Close, Kingsclere, Newbury, Berkshire. RG15 8LZ.
Tel: (0635) 298096

FOR SALE
Amstrad PPC640 IBM compatible, with twin disk drives, modem and seperate monitor. Has had light domestic use only. £500
Basil Hillman, 24 Hill Top, London, NW11 6EE.
Tel: 01-455 1106

WANTED
Toolkit II on eprom, 30+ used microdrive cartridges, QL schematic,
Penpals >20 yrs old.
Renato Zannese, 615 Roding St., Downsview, Ontario, Canada, M3M 2A6.

FOR SALE
QL (JM Rom) with 512K Miracle Extra Memory, Twin 3.5 Cumana Disks with interface, Miracle Modem, Schon Separate Keyboard + Original, Microvitec Cub Colour Monitor with swivel stand, Manuals, QL Books, 40+microdrives, lots of software. £500.
THOR Twin Disk fitted with TT/TK2/Speedscreen Rom, Thor mouse, Phillips 8833 Colour Monitor, Computer stand/keyboard drawer, All Manuals, XCHANGE SUITE, other software inc PRO PUBLISHER/SPECIAL EDITER/EYE Q/TURBO ETC. £700.
Panasonic Printer 1080. Manual. £100
All in good working order.
Tom Gomer, "Kailas", 11 Kipling Place, Stanmore, Middlesex, HA7 3NG.
Tel: 01-954 4173 (after 6.00pm)

FOR SALE
Sector Software: Page Designer 2 £17.
Digital Precision: Solution (vanilla - without MS-DOS) £20. Editor Special Edition £25. Adventure Creation Tool Special Edition £25. Ultraprint £10.
Ultrasoft: The Painter £15
All of the software is complete with full (original) documentation.
Andy Wright, 29 Clifton Rise, Windsor, Berkshire, SL4 5SX.
Tel: (0753) 858466

FOR SALE
Thermal paper 8.5" X 100 yds. £5 per roll (13 left)
Ken Shaw,
Tel: (0865) 863666 Evenings and weekends.

FOR SALE
Quanta magazines - Aug '84 to Nov '89 inc. £20.
QL World (formerly QL User) - Dec '84 to Nov '89 inc. £16. (Will consider splitting)
QL Liberator - Full edition £25. Official QL Service Manual £8.
Official bound QL User Manual £5. All mint - UK carriage inc.
Alan Mason, 3 Bransdale Road, Nottingham, NG11 9JG.
Tel: (0602) 217880

BEG, STEAL OR BORROW

Please, Please, PLEASE, can anyone lend Tony Firshman of TF Services a Sandy Super Qboard so he can copy the PAL, the only chip he's not been able to replace attempting to repair my board. The one needed is apparently the 'old' issue PAL.
A disk interface has.
Stephen Meech, 45 Freeman Way, Maidstone, Kent, ME15 8AR.
Tel: (0622) 675226

STOP PRESS

QUANTA WORKSHOP (PORTISHEAD) 4th March 1990

The last workshop held on the 12th November 1989 was a huge success with an attendance of around 200, the only downfall was the low attendance of traders, which this time it is hoped will be rectified. The 'BRING & BUY' will be operating again so do bring all your old bits & pieces.

One new activity this time will be 'Seminars' which will enable software traders to demonstrate their wares in a more effective form. These will take place in the reception area of the hall and will consist of two 27" Monitors mounted on stands in front of several rows of easy chairs. It is hoped that a programme of seminar times will be advertised before the event to enable members to time their attendance accordingly.

We are also trying very hard to secure the attendance of as many foreign traders as possible, it looks quite promising that at least some will coming.
Refreshments will be available as usual and the bar will be open between 12:00 and 3:00pm.

Transport will be available between 'Temple Meads Station' and the workshop, anyone interested in using this, please ring us so that times can be arranged.
The workshop is situated in Somerset Hall, Portishead, on the A369 4 miles from junction 19 of the M5 and will be clearly signposted. The event will start at 10:30am.

Chris Gregory, 7 Argyle St, Eastville, Bristol. Tel 0272 513653
Roy Brereton, 94 Teignmouth Rd, Clevedon. Tel 0272 871917

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