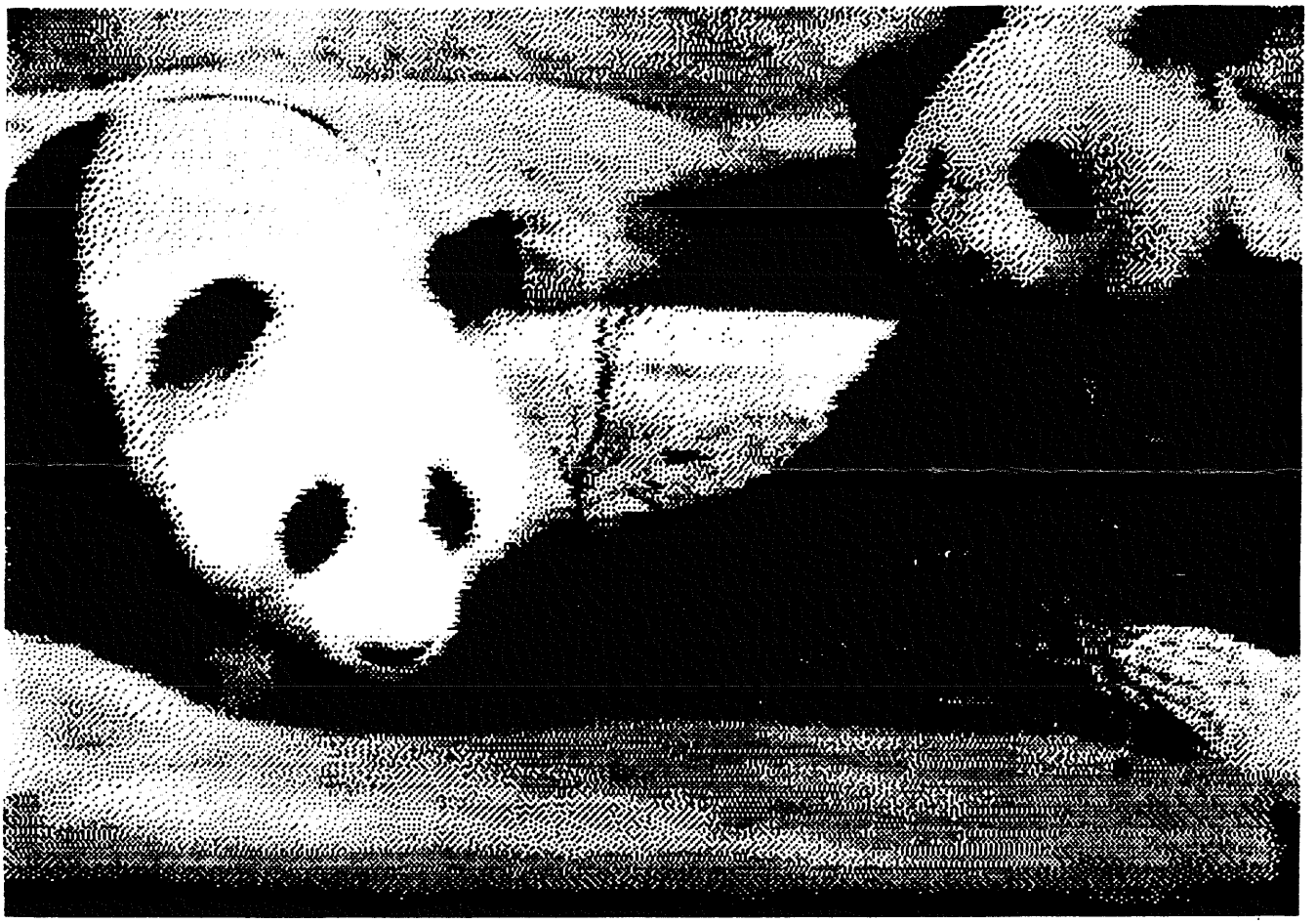
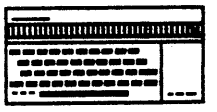
SINC-LINK

JULY-AUG '93 VOL 11 #4





TORONTO TIMEX-SINCLAIR USERS CLUB

SINC-LINK

JULY-AUG '93 VOL 11 #4

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THE TS2068 & ZX-81 GROUP MEETS ON THE FIRST WEDNESDAY OF EACH MONTH AT 14 RICHOME COURT, SCARBOROUGH, ONT. 7PM START.

THE QL SIG WILL MEET THURSDAY, JULY 15TH AT 586 ONEIDA DRIVE, BURLINGTON, ONT. 7PM START. AUGUST DATE TBA.

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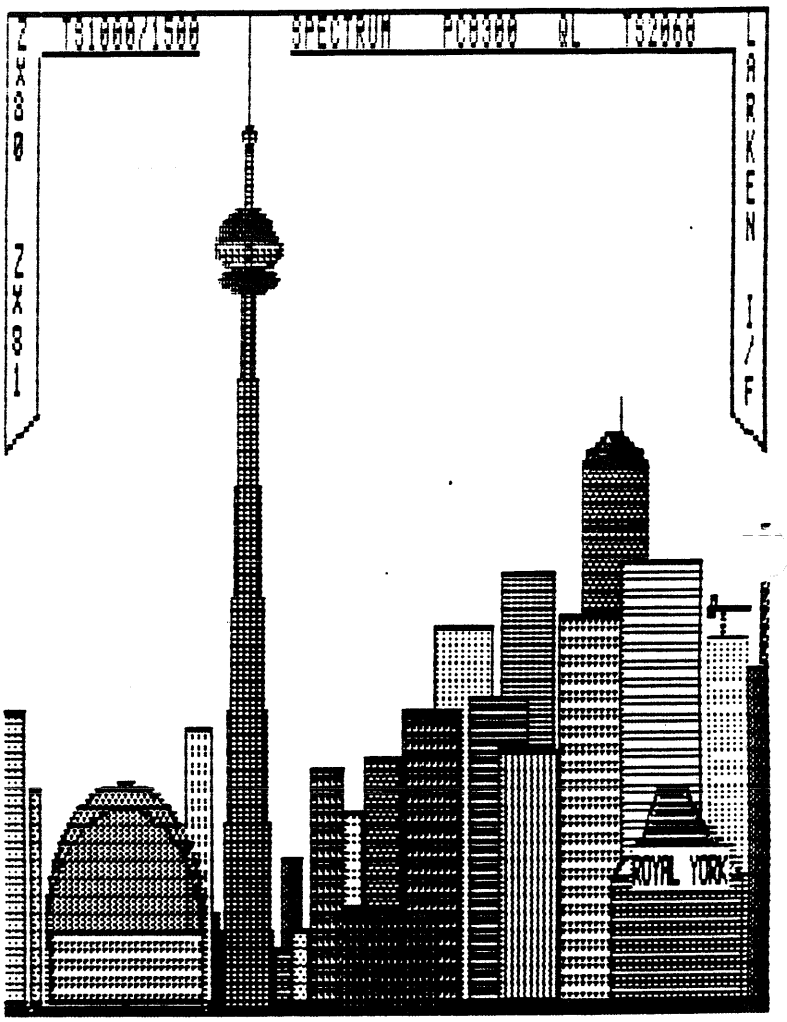

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TORONTO TIMEX-SINCLAIR USERS CLUB

HOT SUMMER 1993

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EDITORIAL

Well, we got an interesting package in the mail this week. A U.K. public domain software company dedicated to the Spectrum has sent me a sampling of their utility programs on both tape and a +D format 3.5" disk.

You may recall that I ran a copy of *PRISM PD's* advertisement a couple of issues ago and after a long delay on my part, I decided to try them out. I was particularly interested to see if the Larken system would be able to read the +D disk. More on that next issue.

Also included in the package was another ad, this time aimed at North American users, and a well-assembled newsletter. If this newsletter is any indication of their commitment then it looks like *PRISM PD* will be around for a while.

See their new ad and the first couple of pages of the newsletter near the back of this issue. They certainly offer a lot of selection.

NEWS ON NEWPORT

In early June, Hugh Howie attended the QL Fest in Newport, Rhode Island. Hugh manned a table, handed out info on our club and met lots of fellow QLers. See his report this issue and pay particular attention to his request for comments. Who knows?

BYE BYE, YOUR SINCLAIR

Also included in the above-mentioned package from the U.K. is the sad news that *YOUR SINCLAIR* is preparing to fold. With it goes the last commercial publication in the U.K., so if you want to continue seeing products for your Timex and Sinclair computers you're going to have support the few remaining dealers, clubs and magazines still around on either side of the Atlantic.

That's all for now...

J.T.

AN INTERBANK DATABASE FOR THE TS2068
Larken Library Disk #30
by G. Chambers

The Larken 2068 library has a disk #30 , called INTERBANK DATABASE. This disk has a suite of programs that make use of the bank-switching capability of the TS2068, when used in conjunction with the Larken RAMDISK. These programs were developed by Larry Crawford, a longtime club member from London, Ont.

We think of the Larken RAMdisk as a solid-state disk drive which has as 48 "tracks" on it, when eight 32K memory chips are installed.

However, through a little-used capability of the TS2068, each of these memory chips can be selectively interchanged with the upper 32K of computer memory, using OUT commands. Larry Crawford has written a program which makes use of this feature to provide us with a very useful database program. The most significant feature of this database is it's size. It's bank-switching capability means that a single database can expand to eight times the usual computer memory. Our disk #30 has an example of a database using 3 banks of RAMdisk, plus the computer memory.

Not too much use has been made of the suite of programs on this disk. When I look through the material in our newsletter I see very little written up about it. I must take some responsibility for this. I always had some difficulty in comprehending the make-up of Larry's disk. About a year ago I decided to rework it to make it more understandable. In the process I encountered problems (of my own making, I have to admit), and I had to ask Larry Crawford to help me out of them. He has done so recently and this article is to invite Larken RAMdisk owners to sample this disk.

Actually #30 consists of several disks, each with a different database application. The idea being to give you some idea of how you could make use of this program. One disk contains a database of the titles of 2200 movie films. Another has a music collection database. There's one that holds a database of the complete SINC-LINK index of articles. And still another that contains a record of a collection of Spectrum games programs, and an index of games tips from Spectrum magazines.

You may wonder how this program can make use of the RAMdisk, when your RAMdisk is already full of your programs. The answer is really quite simple. During the process of loading the database the program places a copy of the original RAMdisk contents onto the database disk. Then when you are finished it re-saves the database from the RAMdisk, and restores the original RAMdisk contents.

Now, it is not sufficient that a database program be able to store large amounts of data. It must have other capabilities as well. The IBDB program can SEARCH, SORT, ADD, EDIT, DELETE, LIST, and PRINT out to a 2040 or large printer. You can set up the database so that it stores files of up to a maximum 127-character length. It will SORT on any selected column, and can SEARCH for any desired character string.

Do give this very interesting library disk a try!

NEWPORT REPORT

by Hugh Howie

The Newport Miracle which was sponsored by IQLR is now part of QL history.

On Friday June 4th, at the Carlton Motel in Newport, we had a busy time meeting and getting to know each other and general gabbing. Many visitors from all over the country were staying there, with some at other motels nearby. Central point being the Carlton.

The UK contingent consisting of Stuart Honeyball, Tony Firshman, and Bill Richardson were all busy on this day just talking about things in general, and there was a fair amount of swapping of wares and information.

I was able to meet many members of our club, and to discuss our club with them. I was also able at this time to show them a program I have just completed called QUANDEX, which is an index/cross reference type of thing for the QUANTA Magazine from the time it first started. This program is being sent to QUANTA for inclusion in their library. (I hope) It already is in our own QL Library.

On Saturday, I had a table on behalf of our club at the Salvation Army Building where the convention was held, and again meeting many of our members, and also many who were not members. I met many who had heard of us, and many who had not heard of us. Now I can say that many more know who we are, where we are, and what we are at.

I had my trusty QL with me, and all the stuff that goes with it, and also a few demo programs to keep interest alive in my little corner of the area. But shortly into the demo my trusty QL decided it was a bit shy and embarrassed in that hoard of milling bodies, and decided that it did not like the "1" key. So I replaced the membrane hoping that my troubles were solved, but my trusty QL was still not up to appearing in the public eye, and decided the only way to get seclusion was to stop accepting power at the power input socket. Woe is me, a lot of demo stuff to run, and a table loaded with literature, and my trusty QL goes all bashful on me.

However all was not lost. I was able to borrow from Bill Cable a spare unit to help me out, but I was not out of the woods yet!

When I started to install my Gold Card in Bill's machine I bent the pins in the port. But I was fortunate that I had a pair of long nosed do-dads and was able to get deep into the port and straighten out the pins.

I was back in business, many thanks to Bill Cable, and the demos were running again.

Those demos were mainly run using a program called Vision Mixer, utilising many of my EYE-Q pictures, plus some I had made with PictureMaster. I tried to make the demos interesting as well as amusing.

Vision Mixer is a program that allows you to change screens in a nice easy automatic manner, and the screens are changed in many different ways, just like on the TV for example.

While I was getting all this sorted out other parties were going full steam ahead with their own interests giving demos and selling stuff. There did not appear to be a great lack of the green stuff as many were in a buying mood.

Stuart Honeyball from Miracle Systems was there pushing his latest addition to the QL world, the QXL card, and doing good business which was evidenced by the number of bodies gathered around his table. The QXL card is a card that turns the PC into a QL compatible. I don't have a PC and don't imagine I will be getting one, so I was not too involved with being one of the many gawkers at his stand. And don't ask me how much as I can't remember the price.

Bill Richardson representing his own company, W.N.Richardson, was having no problems with empty space around his table. Plenty of goodies for all to buy. Bill was also selling subscriptions to QUANTA and seemed to be doing good business all around.

NEWPORT REPORT

by Hugh Howie

Tony Firshman of TF Services was there giving demos and passing stuff around. He was at the next table to our own, but I did not get much time to see what he was up to. All I knew was that when I wanted to leave my table to get a breath of air, I had to push my way past his adoring mob. He is very strong on HERMES which is the new processor to replace the 8049. HERMES is reputed to get rid of that key bounce, and also to operate at higher baud rates which is what is required for the modem operations, plus a whole lot of other improvements. I think I will get one myself. I believe Mechanical Affinity also have them.

Tim Swenson was in attendance with his QL Hackers Journal. (QHJ). For those who don't know what this is, it is a journal put out by Tim for the advanced programmer, and it deals with many languages in depth. It is available in booklet form, and also on disk. He puts out a new issue about every couple of months. If you are interested I can let you have his address. I also have most of QHJ on disk in our library.

To my right was Mechanical Affinity with Paul Holmgren and Frank Davis in attendance, and every time I looked at Paul I got the impression of a bundle of $$$ in his fist. More like a bookie than a trader. Lucky Paul!

John Impellizzeri and his partner were there showing off their tower assembly where the QL and all its whatevers are enclosed in one neat little stack. Looks mighty impressive to me. I could not get a price out of him for the conversion etc., but it would appear to be quite a bit less than what I had heard rumour say initially. We will have to wait and see what the future produces, and just keep your fingers crossed - a one unit affair for the QL may not be too far away!

Then of course we had Bill Cable of Wood and Wind Computing, he it was who loaned me his spare QL. He was demonstrating his new program called QLerk, which he has been working on for a couple years or so - a program which is suitable to run a small business, or even your household finances. I have been privileged in having the opportunity to have a ver close look at this program, and while admitting there is going to be a period of getting to know QLerk, it is also a very comprehensive book-keeping system.

QLerk will write your cheques for you and keep the bank account in balance, (have you managed to do that yourself yet?) Looks after deductions, wages, accounts payable and receivable, prints purchase orders, balances up to five bank accounts, your wifes (wives?) petty(?) cash outputs, and also to the main thing, which is what is left for yourself at the end of the day. Not much these days I have to admit. Just be thankful for small mercies. egad - how small!

Bob Dyl was pushing IQLR which was the sponsor of the whole show. Thanks Bob.

NESQLUG utilised the serving hatch to the kitchen and provided us with donuts and soft drinks, just help yourself, and it was all for FREE. A very grateful thank to NESQLUG, and thank you for a wonderfu idea. That was also a very popular section of the show.

Who else was there? A whole bunch of dedicated QL users from a young man not yet in his teens, to old fogies like myself.

I have probably missed someone out, and if so, please accept my apologies, and the wet noodle treatment would be appropriate!

After the show closed many of us attended a dinner at the Newport Beach Hotel, where we enjoyed an excellent meal, and many the tale was told at the many tables.

On Sunday, there were little meetings going on the rooms of the Carlton Motel. Lots of coming and going and interesting chatter about programs and what was in the future and all that jazz.

Tony Firshman was running a BBS on two QL's connected by the serial ports, I

could not get near it as there were so many crowded into a small bedroom, but from what I did see it was a most interesting couple of hours.

Miracle are still working on their graphics card which should be coming out fairly soon. Not too much was said about it or its price, but it is going give a very high resolution to the QL. A great deal of interest was evidenced by the questions being asked.

I came home on the Monday, but many stayed on to have a look around at Cape Cod and the surrounding country in general.

From what I gather the UK people are willing and keen to come back again next year, and since I have arrived home, I have been told that the German and some other continental suppliers of QL ware are interested in coming if there should be another convention over here, but I have heard that they would like to see it further inland the next time.

I have also heard the comment that there should have been more lead time to enable a more comprehensive advertising campaign, to generate a greater interest.

In discussion with an interested party, (trader) I asked what they thought of Toronto and was told that would be an ideal place for a convention. I said that I would like to see a Sinclair convention covering ALL the Sinclair computers, and this was thought to be possible.

My thinking, and let me say this right here and now, my thinking is not that of the other club officers, it is just my own solitary single idea off the top of my head. I am tossing this out for comment, and I hope to get plenty of comment.

Owing to the cost of accommodation and meeting places in Toronto, I feel that an ideal area would be in the Hamilton - Toronto corridor. In this area it is easier to move around than in Toronto itself. Accommodation is cheaper. And for anyone wishing to visit Toronto, there is the Queen Elizabeth Way (QEW) for fast commuting right into the heart of the downtown entertainment and shopping of centres of Toronto. There is also a bus service and a train service. The distance by QEW from Burlington to Toronto downtown is 32 miles.

This Hamilton-Toronto corridor is of easy access to travellers from all over. Those from the Eastern States would travel on the QEW, and for those from the South, it is only a few miles from the 401 on easy access highways.

As I have said earlier, lots of lead time is required for organisation and advertising. So if you would like to see this thing, I would like to know by reply exactly what your thoughts are.

Only if a certain level of support was indicated, would it be possible to start the ball rolling. So if you want to see this come off, write to me today and give me your views and comments. I am adding my address at the end of this so that you may write right away.

Remember if you want to see a Sinclair convention in the Toronto area, please write.

And when you write, please let us know what traders you would like to see there. Not all asked would come or be able to come, but at least we could ask them.

Was the Newport Miracle a success? I would say so, and so also would many others. Apart from the traders who appeared to be happy, the general consensus would be that everyone was happy to have attended and to have met so many old friends, and made so many new ones. Is that not what a convention is all about?

Hugh H. Howie,
QL Contact,
586 Oneida Dr.
Burlington, Ont.
Canada, L7T 3V3
(416) 634 - 4929

Q L I P S

by Hugh Howie

Sometimes I sit down and have no idea in the world just exactly what I am going to see on the paper as it comes out of the printer. Today, you fortunate folks out there are going to get a sample of what comes out at one end after I have put nothing in at the other. So just sit back and relax, this is going to be one of those days you don't need, but that still seem to pop up at odd times, only too frequently.

Tother day I was trying to copy a Cartridge to Disk and that darn thing just would not go over - kept getting that old QL story "Bad or Changed Medium" which we have all had with various degress of teadiom (I told you it was going to be one of those days)

Anyway I got that message and do what I might I could not get that copied over, and I badly wanted the transfer made.

A thought came to my mind, at least what is left of it, mind that is, and I copied from Cart to RAM just to see if I could operate from RAM. After doing so for a while I decided to copy RAM to Disk just for kicks and to see what happened. An' by golly that stuff went from ram to disk just like that. (snap-o-da-thum)

So I again tried to get a copy from Cartridge to Disk - No Go. I then tried Cartridge to RAM and RAM to Disk and again by golly you should have seen that thing go over just like that. (Snap-o-da-thum)

Now why will it go from Cart to Ram to Disk, and yet will not go from Cart to Disk direct?

Network Prover.

Every time I say this is it - no more money to be spent on this QL, I see something that tickles my fancy, and recently I saw that there was a Network Prover. A gadget to indicate that the Network system was aworkin. So I spent a few bucks and got this thing from Dilwyn Jones, and by golly that thing really does work!

Often I have wondered if the Net was working or just making look like, but this Network Prover really does send out a flashing light to show that data is being transferred. Cost? £3.50.

Now I can sit and watch the light flash as I wait for the transfer to be made. I never stop being amazed at the wonders of science!

I just looked at my little list of things to write about, and I see the word CARDS, now what the heck is that? It should remind me of something, but what? I just don't have a QLue.

Oh Yes! now I remember. In the past I have made up some "business" cards for members going to a convention or show or whatever. The cards could also be pinned to the lapel for identification purposes. If the owner got lost you always knew where to send him/her.

Anyway, to make those cards was not that easy, as the paper I used was a little bit glossy, the friction feed had no friction, and it did not have those little holes in the side of the paper t help it to run properly through th printer. But I got an idea * FLASH * and my problem was pretty well solved.

I use those 3 1/2 inch address labels in sheets with holes at the edges, (gee thanks - I know they are called perforations) so I saved the strip after the labels had been removed, and taped a piece of cardboard, cut to the required width, to the strip, fed it through the printer from the front, and I have no more of this slipping and sliding and and funny type as the paper goes through the printer.

This works fine with my Panasonic 1124 as it has front loading, but is no good with my Seikosha 1600 as the rollers make the cardboard bend too much.

Well that is how I did it, you do it your own way.

I started with nothing to write about and I have ended up the same way. And have filled a page with nothing.
So There! (Tip of tongue is shown)

TANK VOLUME

Bob Wilson

Here is a TS1000 program listing written by one of our club members to calculate the volume of a tank based on the depth of fluid in the tank. It is a good example of the kind of programs that can simplify the work of the user.

R. Bruneau

```
  1 REM ** TANK VOLUME **
        ** BOB WILSON **
 10 PRINT TAB 11;"TANK VOLUME"
 15 PRINT
 20 PRINT ;"
"
 30 PRINT ;"
"
 40 PRINT ;"
"
 50 PRINT ;" D
"
 60 PRINT ;"
"
 70 PRINT ;"                H
"
 80 PRINT ;"
"
 90 PRINT
100 PRINT "    >B<>            L
     <>B<"
110 PRINT
115 REM ** INPUT **
120 PRINT "INPUT DIMENSIONS IN
INCHES"
130 PRINT
140 PRINT "TANK DIAMETER ""D"""
150 INPUT D
160 PRINT AT 14,27;"=";D
170 PRINT "CYLINDRICAL PART LEN
GTH ""L"""
180 INPUT L
190 PRINT AT 15,27;"=";L
200 PRINT "BULBOUS PART ""B"""
210 INPUT B
220 PRINT AT 16,27;"=";B
230 PRINT "HEIGHT OF LIQUID ""H
"""
240 INPUT H
250 PRINT AT 17,27;"=";H
260 GOSUB 400
270 PRINT
280 PRINT "TANK VOL. IN IMP. GA
L.=";VI
290 PRINT "               U.S. GA
L.=";VU
300 PRINT "                  LITR
ES=";VL
310 STOP
390 REM ** VOLUME CALCULATION *
*
400 LET X=ACS (1-(2*H/D))
410 LET AS=D**2*X/4
420 LET AT=D/2*ABS (D/2-H)*SIN
X
430 IF H<=D/2 THEN LET V=(AS-AT
)*L
440 IF H>D/2 THEN LET V=(AS+AT)
*L
450 LET U=ASN ((H-D/2)/(D/2))
460 LET W=D**2*B/24*(4*COS U*CO
S U*COS U*SIN U+6*(U+SIN (2*U)/2
)+3*PI)
470 LET VI=INT ((V+W)/277*100+.
5)/100
480 LET VU=INT ((V+W)/230.64959
*100+.5)/100
490 LET VL=INT ((V+W)/61.03*100
+.5)/100
500 RETURN
```

```
                TANK VOLUME

D

                H

   >B<>          L          <>B<

INPUT DIMENSIONS IN INCHES

TANK DIAMETER "D"              =24
CYLINDRICAL PART LENGTH "L"=48
BULBOUS PART "B"               =6
HEIGHT OF LIQUID "H"           =12

TANK VOL. IN IMP. GAL.=44.1
              U.S. GAL.=52.96
                 LITRES=200.14
```

Photocopied from the March 1986 issue of Practical Electronics, an english magazine that stopped publishing in 1992. Though the article targets the Spectrum, it should work on the 2068 and the ZX81/TS 1000.

R. Bruneau

Spectrum HARDWARE RESTART

R.Macfarlane

THIS board is designed to plug into the Spectrum edge connector and will allow the user to escape from any running program without losing the memory contents. The action is similar to the BREAK key on the keyboard which jumps to a routine within the Spectrum ROM, prints BREAK and eventually returns to the (K) cursor. However, if the BREAK key has been disabled then the only recourse is to remove the power plug and reset the system which, of course, clears the memory contents. It can also be extremely annoying if during the development of a machine code program the computer enters a loop from which there is no escape. With this circuit the Z80 processor can be forced to jump to any address within the Spectrum ROM or RAM.

When running BASIC programs the address of the Auto List routine in ROM was chosen as the restart address. Executing a hardware restart therefore produces an automatic listing of the first few lines of the program and then returns to the (K) cursor. Further Basic commands can now be entered and run, eg, LIST, SAVE, PRINT, etc.

When running machine code the address E000H was chosen. This is the start address of the ZEUS Assembler program which is used to develop machine code programs. Again, executing a hardware restart produces the ZEUS copyright symbol and by using O for OLD, the original source file can be recovered intact.

However, any restart address may be chosen to meet the needs of the individual user.

SYSTEM OUTLINE

When the Spectrum is first switched on the reset line to the Z80 processor chip is held low for a few milliseconds by the action of Ra and Ca (Fig. 1). This ensures that the supply rails are given time to reach their operating voltage and that the CPU is properly initialized.

The initialisation includes:

1) Forcing the program counter to zero.
2) Disabling the interrupts.
3) Setting the interrupt register to 00H.
4) Setting the refresh register to 00H.
5) Setting interrupt MODE 0.

During reset time the address bus and the data bus go to a high impedance state and all control output signals go to the inactive state. No refresh of the dynamic memory occurs so that all memory contents are lost.

When the reset line eventually goes high the CPU executes the instruction found at address 0000H which is the start of the initialisation procedure for the Sinclair Basic in ROM.

In order to restart the system at a different address two conditions must be met. The reset line must be held low for as short a period as possible so that the memory refresh cycles are maintained and memory contents are not lost. When the CPU addresses location 0000H it must find a different set of instructions to the ones held in the Sinclair BASIC ROM. To achieve these conditions, therefore, the external circuit operates in the following manner.

A short 50µS pulse is applied to the reset line of the Z80 CPU. This is of sufficient duration to properly initialize the CPU but have no effect on the memory contents. Coincident with this pulse the Spectrum BASIC ROM is deselected using the $\overline{\text{ROMCS}}$ line on the edge connector and an external ROM selected in its place.

The CPU will then run the program within this new ROM which in fact holds a jump instruction to another address. When the jump is completed the external ROM must be deselected and replaced by the Spectrum BASIC ROM.

To understand how the ROMs are selected and deselected an explanation of the Z80 $\overline{\text{MI}}$ output is required.

The $\overline{\text{MI}}$ (Machine Cycle One) is an active low output which indicates that the CPU is currently executing an operating code fetch cycle. The OP Codes can be any one of the 158 different instructions that the Z80 can execute, eg, LOAD, ROTATE, CALL, JUMP, HALT, etc.

Examination of the Jump instruction is shown in Table 1.

This is a three byte instruction, the first byte containing the OP Code for JUMP, the following two bytes holding the address to be jumped to. However, only when fetching the OP Code from memory will the CPU issue an $\overline{\text{MI}}$ cycle output signal. The CPU knows that the following two bytes must form an address and the $\overline{\text{MI}}$ output stays high.

OP CODE	C3
Low Order Address	A2
High Order Address	12

Table 1. JUMP Instruction

After a reset pulse the CPU program counter is initialized to zero. The address bus is, therefore, 0000H and the CPU is looking for its first instruction. The $\overline{\text{MI}}$ output goes low as the CPU executes an OP Code fetch cycle. The falling edge of the $\overline{\text{MI}}$ output is used to switch from internal to external ROM and control can be handed back to the internal ROM at the next occurrence of an $\overline{\text{MI}}$ cycle.

SPECTRUM KEYBOARD

As stated earlier, when the CPU is reset the interrupts are disabled and the MODE is set to 0. Without wishing to delve deeply into the interrupt structure of the Z80 CPU it is sufficient to say that the Spectrum Keyboard operating system requires the CPU to be in MODE I and that the interrupts are enabled. Before jumping to the new address, therefore, two extra commands must be executed. These are IM I and EI.

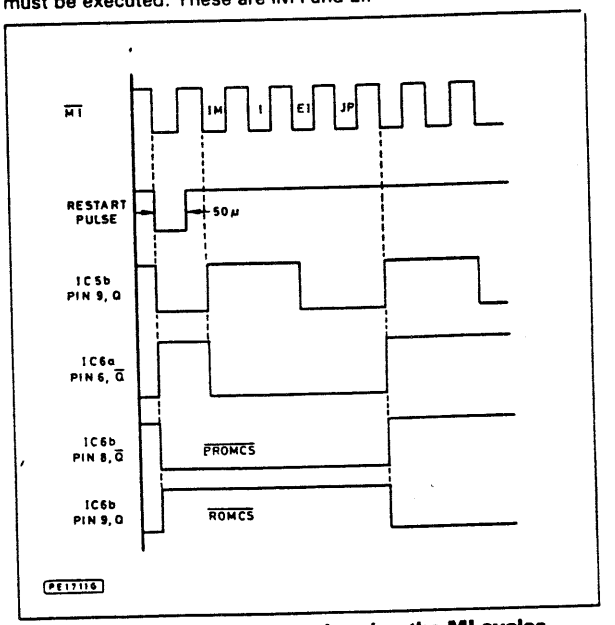


Fig. 1. Timing diagram showing the MI cycles

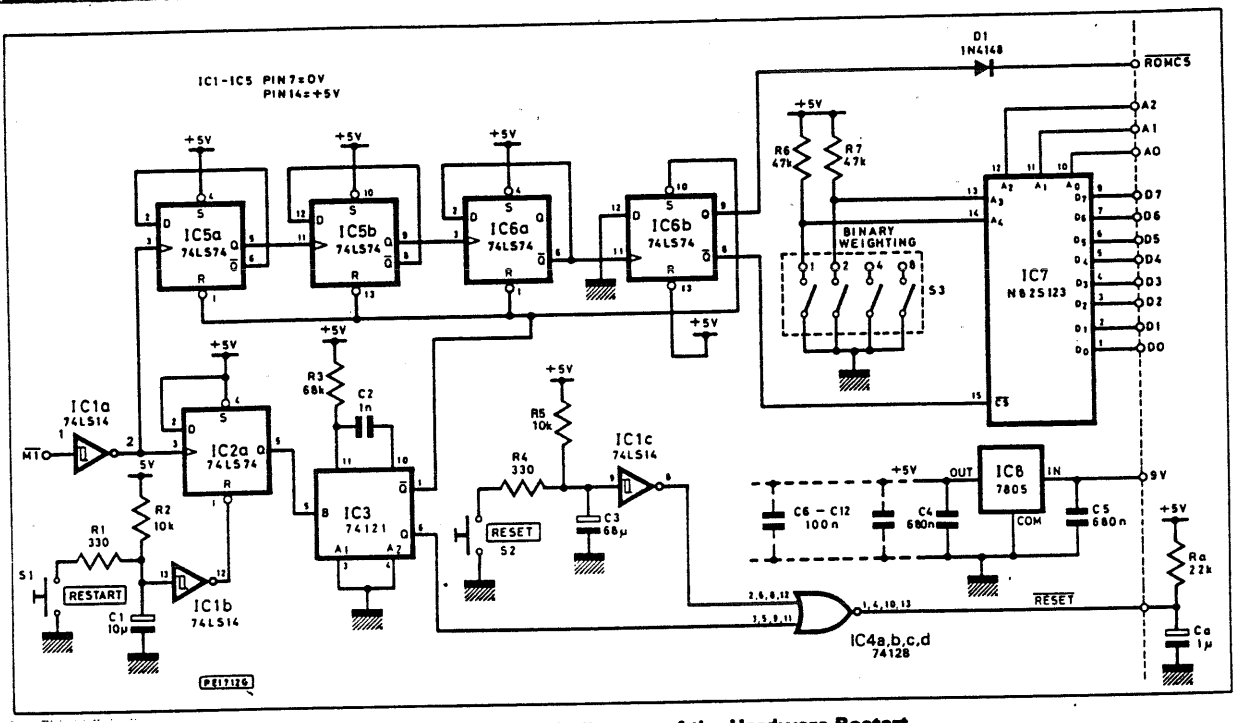


Fig. 2. Complete circuit diagram of the Hardware Restart

IM I is a two byte OP Code and EI a single byte OP Code. This brings the required number of OP Code fetch cycles to be executed in external ROM to four, ie, IM I, EI, JP.

Four MI cycles must, therefore, be counted before returning control to the Sinclair BASIC ROM. The timing diagram of Fig. 1 shows the relevant switching points.

CIRCUIT DESCRIPTION

IC1a buffers and inverts the $\overline{MI}$ signal from the edge connector and the output is fed to the clock inputs of IC2a and IC5a. The reset input to IC2a is held low by the output of IC1b the input of which is held high by R1, R2, C1. C1 serves to debounce the restart switch and R2 limits the discharge current of CI.

When the restart switch is pressed the reset on Pin 1 of IC2a is removed and the next negative going edge on an MI cycle will clock IC2a causing the Q output to go high. Further incoming edges will cause no change since the D input is tied to the 5V rail and only when the restart switch is released will the Q output fall to zero.

The positive going edge at the Q output of IC2a triggers the one shot IC3 to produce a 50µS positive going pulse at the Q output Pin 6, which is in turn inverted by the parallel connected NOR gates of IC4. This parallel connection is required due to the internal combination of Ra and Ca enabling the power up reset for the Spectrum. Using IC4a, b, c, d in this way increases the sourcing and sinking currents and the above timing requirements can be met.

The second NOR input to IC4 is taken from the output of IC1c whose input is identical to IC1b. This provides a means of resetting the Spectrum without removing the power plug and also provides, due to the action of R5, C3, an external power up reset.

The output of IC1a is also fed to the input of IC5a Pin 3, which is connected as a divide by 4 counter. The Q output of IC5b Pin 9 is connected to the clock input of a further divide by 2 stage IC6a. The reset inputs to the three stage counter are taken low during the 50µS Restart pulse by $\overline{Q}$ on IC3 pin 1 and the first negative going edge of $\overline{MI}$ to appear after the restart pulse will cause the $\overline{Q}$ output of IC6a Pin 6 to go low.

After four MI cycles this $\overline{Q}$ output will go high again and is used as a clock input to IC6b.

During the 50µS restart pulse the set input of IC6b Pin 10 goes low causing the Q output at Pin 9 to go high. This deselects the Spectrum ROM and simultaneously the $\overline{Q}$ output at Pin 8 selects the external ROM. When the clock input of IC6b Pin 11 goes high this state is reversed. Further clock inputs to IC6b are ignored due to the D input being tied to the 0V rail and can only change state after the set input is once again taken low by another restart pulse.

IC6b, therefore, selects the external ROM on the negative edge of the restart pulse and selects the internal ROM four $\overline{MI}$ cycles later. Diode, D1 is included in the $\overline{ROMCS}$ line and this input is connected in a wired OR configuration within the Spectrum.

IC7 is a 32*8 tri-state fusible PROM. When the CS Pin 15 is high the data outputs are in a high impedance state and do not affect the operation of the internal data bus on the Spectrum.

Switch SW3 selects one of four 8-byte blocks giving a possible four selectable restart addresses. A0, A1, A2 are connected to the Spectrum address bus and select the program data held in one of these four blocks.

The contents of the PROM are shown in Table 2.

Addr									BLOCK	SW3
00H	ED	56	FB	C3	00	E0	*	*	1	3
08H	ED	56	FB	C3	A2	12	*	*	2	2
10H	*	*	*	*	*	*	*	*	3	1
18H	*	*	*	*	*	*	*	*	4	0

Table 2. Contents of the 32*8 tri-state fusible PROM

POWER SUPPLY

The internal 5V supply from the Spectrum cannot supply the necessary current so an onboard 5V regulator is used. An unregulated 9V from the Spectrum power pack is available on the edge connector and this is used to drive the external restart circuit.

CONSTRUCTION

The printed circuit board is double sided and requires a number of through hole connections to be made using linking pins (Fig. 3).

The resistors and capacitors should be soldered in place first, remembering to solder on both sides of the board where required as some leads form necessary through connections.

The i.c. sockets, regulator and switches can then be added along with the edge connector, being careful to mount this on the

correct side of the board. The i.c.s can now be inserted and with switch SW3 in position 2, the board can be connected to the rear edge connector on the Spectrum.

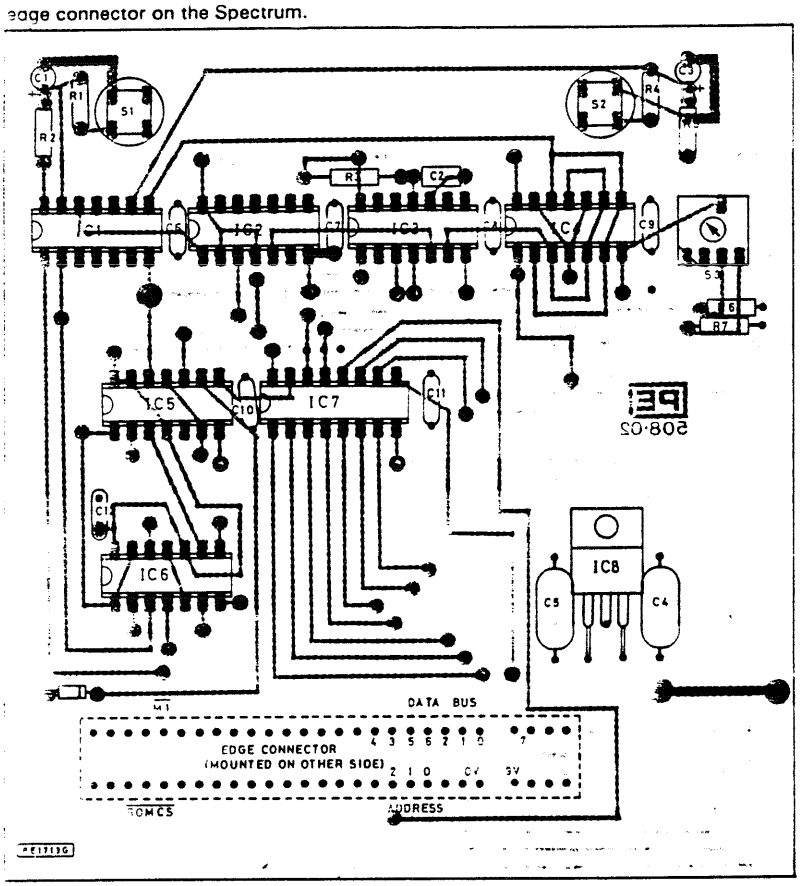
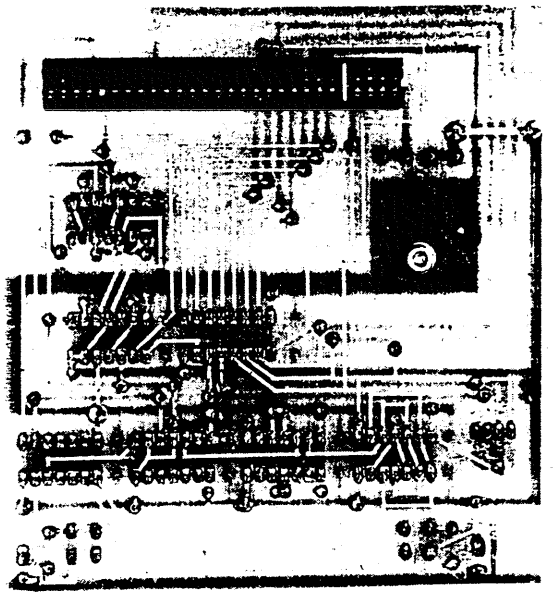


Fig. 3. The p.c.b. design and component layout



TESTING

With the unit connected, power can now be applied. The Spectrum should come up with the familiar white screen and BASIC ROM message. Pressing the RESET button should bring about a similar result.

If the small BASIC program (Test Program 1) is entered and run, execution can be immediately stopped by pressing the RESTART button and an automatic listing of the program will appear. The program can at this point be re-run, listed or saved as desired.

The significance of the restart will become apparent only when the break key is disabled, as the above program could just as easily have been stopped using the break key itself.

Running the Test Program 2 will disable the keyboard interrupt and then print a continuous stream of RESTARTs. There will be no response to the break key and only by use of the RESTART button can the listing be retrieved.

It should be noted that breaking into commercial software is now quite possible but that the board should not be used for the purpose of copying tapes as this is forbidden by copyright.

If running the ZEUS assembler program, then pressing the RESTART button, with SW3 in position 3, will immediately return the user to this program start either from BASIC, without requiring the usual PRINT USR 57344 start up command, or from the currently executing machine code program.

TEST PROGRAMS

Test Program 1

```
40 PRINT "RESTART";
50 GOTO 40
```

Test Program 2

```
10 POKE 23296,243: REM Disable Interrupts
20 POKE 23297,201: REM Return
30 RANDOMIZE USR 23296: REM Run m/c and return to Basic
40 PRINT "RESTART";
50 GOTO 40
```

COMPONENTS . . .

Resistors

R1, R4	330 (2 off)
R2, R5	10K (2 off)
R3	68K
R6, R7	47K (2 off)
All resistors 5% 0·25W carbon	

Capacitors

C1	10µ 16V Tant
C2	1n Ceramic
C3	68µ 6·3V Tant
C4, C5	680n Polyester (2 off)
C6–C12	100n Ceramic (7 off)

Semiconductors

D1	IN4148
IC1	74LS14
IC2, IC5, IC6	74LS74 (3 off)
IC3	74121
IC4	74128
IC7	N82S123 PROM
IC8	7805

Miscellaneous

SW1, SW2	Min. p.c.b. keyboard (R.S. 334–892)
SW3	Horiz. decimal switch (R.S. 334–965)
14-pin d.i.l. skt (6 off)	
16-pin d.i.l. skt (1 off)	
28-way Double sided edge connector (Wire wrap tags)	
P.c.b. Double sided (PE p.c.b. 508–02)	
Linking Pins	

The PROM will normally be supplied with the address of the Auto List routine in SW3 position 2, and the start address of ZEUS in SW3 position 3. The two remaining blocks can be programmed to any user's requirements. ★

MECHANICAL AFFINITY SUMMER SALE

This is our Golden Opportunity Sale! For a limited time only, as we made a great deal at the recent Miracle in Newport Show and are passing on the savings to you. When this special purchase sells out we will go back to our regular prices for these items. This offer expires August 15, 1993 or when supples run out, at which time prices will revert to normal (though we always try to have some great prices).

MINERVA MK1 the ultimate ROM upgrade for the QL plus the HERMES 8049 co-processor replacement chip (normally $105) now only $75!

MINERVA MK2 the same ROM chip and board as above, but with a battery backed clock and RAM plus the HERMES 8049 replacement chip (normally $143) now only $100!

GOLD CARD running at 16 mgh and with 2 meg of memory plus Slowgold Software to control the speed of programs that run too fast, for only $360!

GOLD CARD plus both the MINERVA MK1 and the HERMES for only $396!

GOLD CARD and the HERMES for only $375!

GOLD CARD with the MINERVA MK2 and the HERMES for only $420!

We have also added many new products to our range of QL hardware and software. At this point in time we at Mechanical Affinity feel we have the largest range of both hardware and software of any dealer. Please request a copy of our newest catalog.
To show you some of the new products we are now carrying in our stock, please see below.

QL CENTRONICS INTERFACE for both SER1 or SER2 to parallel printer. Newly redesigned to take up less room. It defaults to 9600 baud, but is able to switch baudrate and comes with a 3 meter long cable. It is available for $44.

FALKENBERG HARD DISK DRIVE CARD for the QL. This will allow you to use a MFM or RLL hard drive, upto 416 meg with your QL. For the HDD interface with either an MFM or RLL controller the price is $310. We also have available the HDD card, controller, case with power supply and 40 meg hard drive for $475. This interface requires that you have a separate BUS EXTENDER CARD to allow you to have more than one peripheral out the expansion slot.

QL-BUS-Driver for the Trump Card based QL, gives you a 5 slot expansion board that follows the QL standards for expansion. This is available for $75. The 2 slot version for the Gold Card is $45.

Also new to our stock are the following items. The longer we do this the better we seem to get. With the support of our customers this is a true statement.

QL KEYBOARD-90 INTERFACE now

MECHANICAL AFFINITY SUMMER SALE

QL KEYBOARD-90 INTERFACE now on sale at $98. This allows you to replace the keyboard that came with your QL by using an IBM XT/AT keyboard externally. This is great for those who want to place their QL in a tower or desktop case, or for those who have just gotten tired of replacing membranes every few years.

QUALSOFT TERMINAL SOFTWARE is the best commercially available terminal program for the QL. It comes on disk or MDV. It can multi-task with all popular QL front end programs, it has a simple text editor to help with uploads/downloads and with your E-mail. It allows you to do screen dumps while online, and if you combine it with a HERMES then you can reliably use it with all known high speed Hays compatible modems as well as Tandata, etc. We have it for only $45.

QXL CARD for the IBM. This simple plug in card for the IBM and compatibles allows you to turn a mundane IBM into a full blown super QL. This can give you from 1 to 8 megs of memory, improved graphics capability, and more speed than the Gold Card. Call us to discuss your needs on this and let us work out a deal you can be pleased with. This allows you to run the QL card as a simple application program on the IBM, giving you the best of two worlds. We have them in stock as of now.

Other new items we have added to our inventory include the following:
TEXT87 PLUS4, QL word processor; 2488 DRIVERS for the 24 pin printers and bubblejets; TYPESET90-DESKJET drivers for all HP deskjets; TYPESET90-EPSON drivers for Epson lasers; FOUNTEXT88 + FOUNTED89 optional dot-matrix drivers; PLUS4 PUBLISHER (the publisher pack) to allow you to combine PLUS4 and LINEdesign to make the best use of text and graphics; LINEdesign and DATAdesign from PROGS are the new top of the line vector drawing package for the QL (a massive new product that enables you to draw, print, scale, rotate any picture or text, and will look crisp and sharp), and the newest version of DATAdesign (which has been completely rewritten so that files can be disk based and larger than available memory, with the bonus that all files are now multi-user).

We also now have available for sale the latest version of QTOP, the program that many call the definitive front end for all QDOS compatible machines. It now offers an icon based FILE-MANAGER such as is found in Windows. We have it for only $52.

TO ORDER FROM US SEND CHECKS, MONEY ORDERS, CASH (foreign add $3), or C.O.D., PAYABLE to Frank Davis or Paul Holmgren to

MECHANICAL AFFINITY
513 EAST MAIN ST.
PERU, IN 46970
OR
MECHANICAL AFFINITY
5231 WILTON WOOD COURT
INDIANAPOLIS, IN 46254
317-291-6002 PAULS PHONE
317-473-8031 FRANKS PHONE

V I S I O N M I X E R - 1

Review by Hugh Howie.

This little gem is from Dilwyn Jones Computing in Gwynedd, which is the Celtic name for Wales, the land of great Male Voice Choirs, King Arthur fable, and Rugby fame. It costs a mere £10.00, and is worth every penny.

I used it the other evening at the QL Sector Meeting to give a "Slide Show" style demonstration of many of the little pictures I have drawn with EYE-Q, and I find that VISIONMIXER 1 is a wonderful program for this purpose.

It could also be used to run a shop window advertising display, or a running display of product and prices, or mixing prices and pictures to attract the eye of the passer-by. There are probably no limitations in the manner this program can be used other than the minds' ability to devise a reason for using it.

The program is easy to learn and to use. The manual helps you along stage by stage. There is also a demo sequence supplied to let you see what the program can do.

After that, it is a matter of having a number of pictures (screens) of your own to load into the program when told to do so. Pictures can be made with almost any graphics program available, EYE-Q, (the one I used), The PAINTER, Picture Master (a sister program I will get into another day), Page Designer, almost any program capable of creating pictures or screens. With very little trouble you can have a demo sequence up and running. Up to 25 pictures can be used in a sequence.

The running speed of the display, can be set at the time of entering the sequence. Then again, the sequence can be run with random timing, The pictures can be displayed in a pre-set sequence, or left to run with a random selection. Same thing applies to the effects. (the way the pictures are changed on the screen)

If you are not happy with the display as set, it is easy to edit the picture sequence and/or effects if you don't like what you have.

Remember those wonderful things you see on TV where one picture is merged with another? Where the merging is done in 101 different ways? Well that is what this program does, only instead of there being 101 ways to wipe a picture onto the screen, there are 111 ways to do it. Wipe in from side, top, bottom, in bits and pieces, zigzag, circles, squares, on and on and on. Just think of an effect you would like and this program can come close to producing it. Place the "box" over the effect and press ENTER. When selecting the "effect", it is possible to have a preview of the effect before entering it into the sequence.

The display can be set as continuous running, or, if you wish to conduct a lecture, the pictures can be displayed and changed at the touch of a key.

Would you like to make a scrolling title for those video movies of the kids? Just type a few words into your favorite graphics program, save it, and it can be used in VisionMixer 1. Do it with the "slide up" effect, start the camera, and you will now have a scrolling effect to title the credits on your video.

VISIONMIXER 1 does require a fair amount of memory, at least 512k. It will run from microdrive, but it should be stated that this is not the best way to use this program. As each _scr picture uses 32768 bytes, (32K) you can only get three pictures on each cartridge, so you are limited there. But in most cases I find that those who have extra memory added to their QL, have also added a disk system at the same time.

If you work in graphics, and like slide shows, or have a use for this type of display, then VisionMixer 1 is an excellent program for you to have.

Darn it! I got so busy telling you what the program can do I forgot to tell you how to do it. But then that is what the excellent manual does, it tells you how to use the program - so why should I re-invent the wheel?

A GREAT PROGRAM FOR DEMOS AND DISPLAYS.

930321

Q L I P S

by Hugh Howie

XCHANGE GOES PD

It has recently been announced that Psion have released the QL version of XCHANGE to the public domain.

It has also been announced that the TSL (Task Sequencing Language) files have also been released to the public domain.

Now I can place XCHANGE in our own library. I have had more than one version sent to me in the past but have been unable to place it in the library as I try not to use anything which is restricted in any way.

For those who do not know what XCHANGE is, it is a multitasking program similar to Taskmaster. I have never tried too hard with XCHANGE as I have always been happy with Taskmaster. By the same token there are many who swear by Xchange. Those who do use Xchange say that it is more comprehensive and more versatile than Taskmaster. I guess it is all amatter of what one gets used to.

Some of the copies I have are a bit older so if anyone has the later version with updates, I would be only too glad to use that.

NETWORKING
DELETING OF FILES
FORMATTING

Recently I came across something in the Network that I had not realised previously.

I had always known that it was not possible to format a disk in NET 2 from Net 1. This is a built-in safety feature to ensure that a disk can not be erased inadvertantly from the remote station, but as I was working I found that I had saved an item to the remote station in error. It would have been easy enough for me to go to the remote and delete the item from there, but I though I would try to erase it from the master station - (Net 1) and it worked!

I can save to the remote, I can delete in the remote, but I cannot format in the remote from the master. This does not appear to be logical.

To protect a disk, it is not possible to format the remote, but it IS possible to delete the remote from the master....

Does anyone have an explanation? Please drop a line telling me more.

WHAT USE IS DATA_USE ?

At the same time as I was finding out the above delete procedure, I wanted to transfer files around in different ways, and also to get print-outs of certain things, without a lot of trouble, and I reminded myself of this DATA_USE thing.

I have mentioned before about the TK2 command "DIR \SER" which will send to the printer a directory of the disk in flp1_. It will also send the wstat the same way. But ONLY from flp1_. Yes? NO and a most emphatic NO.

If you use another TK2 command such as "DATA_USE RAM3_" then use "DIR \SER" the printer will give you a copy of the directory in RAM3_!

Don't forget to go back to the default of flp1_ by using "DATA_USE FLP1_". Of course if you reset without saving the defaults then the next time you load up you will get your original defaults.

And to remind you of what your defaults are just type "DLIST"

You can do the same with PROG_USE, and DATA_USE, and DEST_USE, and SPL_USE.

Now I know I have mentioned this before, but it does no harm to remind you, and sometimes to remind myself, that those things are possible. And it sure can save an awful lot of heads-cratching and frustration on occasion.

Anyway the practice is good for me!

930620

7/1/93
Tampa, Fl.
U. S. A.

A. E. Green
4600 E. Hillsborough Ave.
Tampa, Fl. 33610

QL Contact:
Hugh H. Howie

Hi Hugh;

Well this is the first letter for this month. I have been bending George's ear for sometime now and though I would give you a shot.

Not to much for the QL for the last few months been working on the 2068 and doing things that I did not think that I could ever do with it. Getting the EPSON T-1000 printer made everything fall into place. I even got a copy of PRINT FACTORY, this is a great program. I wish that all programs were this good! Also a MIRACLE interface for the QL now I can run and print out QL-Peintre and FRONT PAGE, is's about time because I got this program for about 3 years ago and just now been able to use it.

I just pick up a new PSION ORGANISER II model CM with the RS 232 interface and the Finance Pack & Oxford Spelling Checker cartridges.
I just found out that this thing can't spell "cartridge"!!!!

The disk that came with the PO II is for the IBM, for uploads and downloads. What about the QL? Can I use this with my machine and the T/S 2068? (The 2068 has 2 serial ports on the Timex disk controller.) I also found out that the Radio Shack Portable Disk Drive 2 will plug into the PO II serial cable without any adaptors.
I would like to find out if I can use this drive like the Z88 can. If you know of anyone that has one and understands the OPL language please let me know. I will need a boot program to access the drive. (Format, Load, Save, etc.) If it can be done.

I like this machine BUT if push becomes shove I am considering trading it of for a Gold Card. When one has 11 2068's one QL, 3 1500, 1 COCO, 2 Amstrads, 2 Atari's (8 bit) and 1 Atari ST they DO NOT need another computer.

All that I use on the QL is QUILL because I can't aford to lose any more programs because of the microdrives. I just purchased Cartridge Doctor and QL-Cavern and lost them at the same time.
Rod Gowen sent QSPELL but pages 4 and 5 were missing from the owners manual.

SINCLAIRLY Yours,

Al Green

STEPPER MOTOR DRIVER

This month's constructional project features a Stepper Motor Driver for use with the Programmable I/O Interface described in the February 1986 issue. The interface can also be used with the simple Four-Channel Output Interface described in June 1985.

The complete circuit of the Stepper Motor Driver is shown in Fig. 1. The circuit is based on a purpose designed driver i.c. (SAA1027) and uses only a handful of other components.

The stepper motor should be a 12V 4-phase (47ohm/400mH per phase) two stator type providing 7·5 degrees rotation per step. Such motors are readily available at reasonable cost from a number of suppliers and are capable of producing a maximum working torque in excess of 50mNm.

Due to the relatively large power consumption of the stepper motor, a separate power supply of 12V, ± 5% at 500mA (max) will be required. **Under no circumstances should the stepper motor power be derived from the Spectrum's own power unit!**

Construction

The stepper motor driver may be assembled on a piece of Veroboard measuring approximately 100mm × 80mm. The precise dimensions of the board are uncritical and those quoted leave plenty of room for the necessary input, output, and power connectors. The use of a low-profile 16-way d.i.l. socket is recommended.

Component layout is uncritical though care should be taken to ensure that the decoupling capacitors, C1 to C3, are distributed around the p.c.b. Links can be made, as necessary, between the components using short lengths of tinned copper wire on the upper surface of the matrix board.

Readers should give some careful consideration to the choice of connectors used. The input connector should be a four-way type whilst the output should have at least five, and preferably six, ways. This latter connector should be rated at currents of at least 1A.

Connections to the stepper motor are depicted in Fig. 3. The power connector should be a polarised two-way type and this again should be rated for currents of up to 1A. If desired, this latter connection can be replaced with suitably coloured flying leads.

NEXT MONTH: Some routines for driving the Stepper Motor Interface will be described and we shall be taking a further look at FORTH.

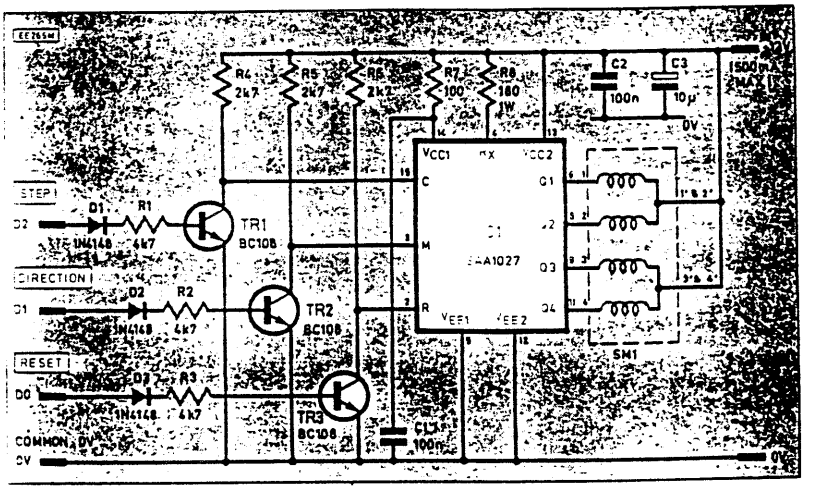


Fig. 1. Complete circuit diagram for the Stepper Motor Driver.

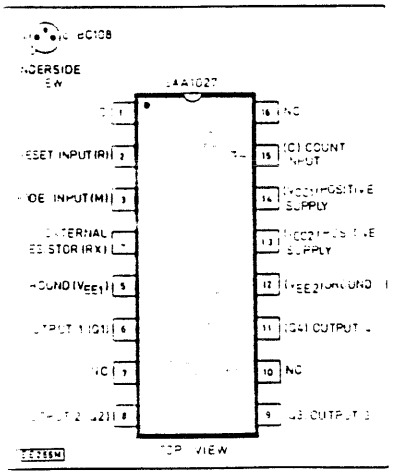


Fig. 2. Pinning details for the BC108 and SAA1027.

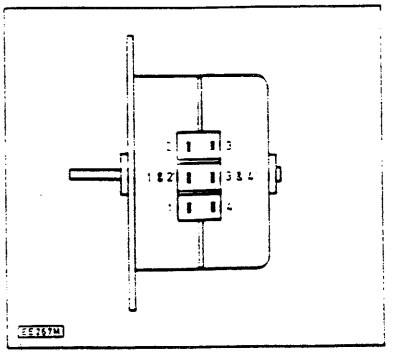


Fig. 3. Stepper motor connection details.

COMPONENTS

Resistors

R1 to R3	4k7 (3 off)
R4 to R6	2k7 (3 off)
R7	100
R8	180 1W

Unless otherwise stated all resistors are 0·25W 5% carbon

See Shop Talk page 208

Capacitors

C1 and C2	100n polyester
C3	10µ elec. 16V p.c.

Semiconductors

D1 to D3	1N4148 (3 off)
TR1 to TR3	BC108 (3 off)
IC1	SAA1027

Miscellaneous

Stepper motor SM1 (see text), 16-pin d.i.l. socket, connectors (see text), 0·1in. matrix Veroboard (or similar) measuring approximately 100mm × 80mm.

Approx. cost Guidance only £16

Index of Articles in Sinc-Link

Quite some time ago, one of our original members Bob Mitchell realized that the list of articles and other items in our newsletter was getting too complicated for our limited human memory, so he put together a database with at that time a complete listing of the information in the Sinc-Link.

At that time he sent me, over my 300 Baud modem, that information and he has kept it up till last year. When he graduated to a CLONE I took advantage of his offer and obtained a copy of his database. Since then I have been updating the file with the end result that it is quite large now. The editor-in-charge is now publishing an index of the articles in each issue of the Sinc-Link, so there is no further need for me to keep it up .
This will be my last revision and an example of the usefulness of this file is shown in the next attachment which consists of a selection of items pertaining to the QL.

Good luck

Louis Laferriere

	1993		
9301	11/1	p.6	Text 87 plus 4 Version 3 H.Howie
9301	11/1	p.6	Message from P.Hale
9301	11/1	p.7	QL Sig meeting H.Howie
9301	11/1	p.8	Some QL stuff H.Howie
9301	11/1	p.15	Superbasic Ramblings A.Pywell
9301	11/1	p.17	QL Backups H.Howie
9301	11/1	p.19	Editor ????? H.Howie
9301	11/1	p.20	QLips H.Howie
9301	11/1	p.21	Gold Card J.Juergens
9301	11/1	p.26	QL Xchange version of Quill R.Blizzard
		p.27	QL vs XT Wordstar Wordperfect R.Blizzard
9301	11/1	p.33	The passing of EMSOFT P.Hale
9301	11/1	p.34	Get up and Go H.Howie
9302	11/2	p.3	Spring Ahead 1993 Index
9302	11/2	p.9	Slow Gold H.Howie
9302	11/2	p.10	Notes on QL Lock-ups H.Howie
9302	11/2	p.17	QL Printing Databases P.Hale
9302	11/2	p.18	QL History H.Howie
9302	11/2	p.24	Text 87 +4 vs Wordstar R.Blizzard
9302	11/2	p.27	QL Quanta Index H.Howie
9302	11/2	p.29	QL Sig Meeting March 17 I.Robertson
9302	11/2	p.30	QL Membership Drive H.Howie
9302	11/2	p.31	Sinclair Prism PD

MORE ON "SLOWGOLD"

by Hugh Howie

In the last issue I had some comments to make about SLOWGOLD, a program available from Dilwyn Jones Computing. This program is intended to slow the Gold Card down to enable some of the earlier QL programs to run on the now speeded up QL.

At that time, I mentioned that I had found a couple of "peaks" in the operation of SLOWGOLD, and although they were there, they did not in any way detract from the value of SLOWGOLD as a valuable asset to anyones library, as the amount of slow-down is adequate for most applications.

I have received further information from Dilwyn Jones as to his research of the problem, and his comments are so interesting, that I have decided to reproduce them here, in the hope they make more sense to you than they do to me. I just aint no technical man! If you want to completely understand what goes on, buy the program and try it out for your own self. You will NOT be disappointed.

QUOTE:-

We reckon by now that we know what causes the odd occurrences with some values for slowgold and it is very difficult to explain. It arises due to interactions between the length of the interrupt loop set up by Slowgold, the scheduler and other 'regular' items or interrupts in the QL. The values at which the effects occur varies depending what is happening 50 or 60 times a second. A small diagram may help to show what I mean, the - shows an interrupt or regular timed occurrence, where there is overlap there may be a clash or something is missed or queued, causing unpredictable effects to cycle round every now and then

```
Slowgold ---   ---   ---   ---   ---   ---   ---   ---   ---   ---

Scheduler
time slices  1111223111122311112231111223111122311112231111223111122311111223
```

You can therefore, I hope, see that while Slowgold is in its own interrupt shown by the --- above (the on time and off times are not in ratio, they will not be 50:50 as shown above) the normal actions of the QL do not occur and the time slices of the jobs currently active don't occur as expected. Generally speaking, the bits chopped out of the time slices occur regularly and you get the same slowdown on a regular basis. But with some values the length of the interrupt will just happen to make things occur such that, for example, if job 1 is active, the interrupts could always occur when the scheduler is mostly attending to task 2 or 3 (even if they are suspended). I hope this is the real explanation for what is happening, we have suspected it for a while but never been able to conclusively prove it. Also, depending on the speed at which the machine is running, what else there is to consume time and so on, the slowgold interrupts may actually overrun their alloted time slots and strange effects such as apparently missed interrupts (leading to loss of slowdown) might theoretically occur, though we haven't been able to prove this.

AUTO FADE FOR THE TS-2068

by George Chambers

The April 1986 issue of YOUR SINCLAIR had an article and a program listing for a feature which provides for a screen black-out if you don't do anything for a while. It has an adjustable time-out interval of up to 20 minutes.

I found that the program works equally well on the TS2068 and with the Spectrum ROM.

The program works as follows. After a timed interval in which no computer keys are pressed the screen attributes are moved and stored in upper memory, and the attributes area of memory is filled with zeros, giving a black screen. The border is also blacked out. At the same time a flashing white square located in the lower right-hand corner of the screen is displayed as a reminder.

Whenever a key is touched the screen attributes are restored and presto, the screen reappears.

The code occupies a space of about 1200 bytes of upper RAM. The code itself is only about 120 bytes, however space is required to store the 768 bytes of the screen attributes.

This location has been carefully chosen so that the interrupt mode (IM2) which it uses will not be disturbed by computer peripherals. I checked, and it's operation is not affected by the Larken disk system. Also, the code does not affect the user-defined graphics area of memory.

The article mentions that because of the peculiarity of the IM2 interrupt mode only the brave, or maybe the foolhardy, would attempt to relocate it.

The easiest way to use this utility would be to load the Basic each time, and have it POKE the code into place. This allows you to select the time delay interval desired.

If you can settle for a standard time interval then saving the code and reloading it for each use is entirely practical. In this case you would initialize the feature with a RAND USR 64967.

To turn off the feature use RAND USR 64994.

****

```
  1 REM Auto Screen Fade
  5 RESTORE
 10 CLEAR 64198
1000 FOR i=64967 TO 65023
1010 READ a: POKE i,a
1020 NEXT i
1030 FOR i=65281 TO 65365
1040 READ a: POKE i,a
1050 NEXT i
1060 INPUT "Delay in secs ";S
1070 LET s=s*50: LET t=INT (s/256)
1080 POKE 65287,t: POKE 65286,s-256*t
1090 RANDOMIZE USR 64967
1100 PRINT "USR 64994 to switch off"
 110 STOP
2000 DATA 33,0,254,6,0,243
2010 DATA 54,253,35,16,251,54
2020 DATA 253,62,254,237,71,237
2030 DATA 94,251,33,1,0,34
2040 DATA 251,253,201,237,86,201
2050 DATA 255,243,245,229,197,213
2060 DATA 237,91,251,253,205,1
2070 DATA 255,34,251,253,209,193
2080 DATA 225,241,251,201,2,0
2090 DATA 195,229,253
2100 DATA 122,179,40,50,33,232
2110 DATA 3,167,237,82,40,11
2120 DATA 235,35,253,203,1,110
2130 DATA 200,33,1,0,201,33
2140 DATA 0,88,17,199,250,1
2150 DATA 0,3,126,18,54,0
2160 DATA 35,19,11,120,177,32
2170 DATA 245,211,254,62,184,50
2180 DATA 255,90,33,0,0,201
2190 DATA 235,253,203,1,110,200
2200 DATA 33,199,250,17,0,88
2210 DATA 1,0,3,237,176,58
2220 DATA 72,92,230,56,15,15
2230 DATA 15,211,254,33,1,0,201,0,0
9000 RANDOMIZE USR 100: SAVE "autofd.B1"
```

DISASSEMBLY OF AUTO FADE CODE

```
64967 2100FE    LD    HL,65024
64970 0600      LD    B,0
64972 F3        DI
64973 36FD      LD    (HL),253
64975 23        INC   HL
64976 10FB      DJNZ  B,64973
64978 36FD      LD    (HL),253
64980 3EFE      LD    A,254
64982 ED47      LD    I,A
64984 ED5E      IM    2
64986 FB        EI
64987 210100    LD    HL,1
64990 22FBFD    LD    (65019),HL
64993 C9        RET
64994 ED56      IM    1
64996 C9        RET
64997 FF        RST   38H
64998 F3        DI
64999 F5        PUSH  AF
65000 E5        PUSH  HL
65001 C5        PUSH  BC
65002 D5        PUSH  DE
65003 ED5BFBFD  LD    DE,(65019)
65007 CD01FF    CALL  65281
65010 22FBFD    LD    (65019),HL
65013 D1        POP   DE
65014 C1        POP   BC
65015 E1        POP   HL
65016 F1        POP   AF
65017 FB        EI
65018 C9        RET
65019 02        LD    (BC),A
65020 00        NOP
65021 C3E5FD    JP    64997
```

```
65281 7A        LD    A,D
65282 B3        OR    E
65283 2832      JR    Z,65335
65285 21FA00    LD    HL,250
65288 A7        AND   A
65289 ED52      SBC   HL,DE
65291 280B      JR    Z,65304
65293 EB        EX    DE,HL
65294 23        INC   HL
65295 FDCB016E  BIT   5,(IY+1)
65299 C8        RET   Z
65300 210100    LD    HL,1
65303 C9        RET
65304 210058    LD    HL,22528
65307 11C7FA    LD    DE,64199
65310 010003    LD    BC,768
65313 7E        LD    A,(HL)
65314 12        LD    (DE),A
65315 3600      LD    (HL),0
65317 23        INC   HL
65318 13        INC   DE
65319 0B        DEC   BC
65320 78        LD    A,B
65321 B1        OR    C
65322 20F5      JR    NZ,65313
65324 D3FE      OUT   (254),A
65326 3EB8      LD    A,184
65328 32FF5A    LD    (23295),A
65331 210000    LD    HL,0
65334 C9        RET
65335 EB        EX    DE,HL
65336 FDCB016E  BIT   5,(IY+1)
65340 C8        RET   Z
65341 21C7FA    LD    HL,64199
65344 110058    LD    DE,22528
65347 010003    LD    BC,768
65350 EDB0      LDIR
65352 3A485C    LD    A,(23624)
65355 E638      AND   56
65357 0F        RRCA
65358 0F        RRCA
65359 0F        RRCA
65360 D3FE      OUT   (254),A
65362 210100    LD    HL,1
65365 C9        RET
65366 00        NOP
65367 00        NOP
```

LETS READ T/S 2068 JLO DISKS WITH YOUR QL

Well, here it is. You can read Timex 2068 Oliger disks with a QL with nothing more then a disk interface and ToolKit II. This is made easy due to the simplicity of the methods used to store information on the 2068 JLO system. At this time and present configuration a "basic" read is all this set of procedures does. Working out a set of "conversions" for the way Sinclair Basic is stored becomes fairly easy once you can get a file into the QL.

Now for the PROCedure explanations.

DEF PROC QL, this let me "see" the structure of a QL disk. Working with ASCII (text) files made it somewhat easy to study the methods used to store files and how they are distributed on the side, track, and sectors of a QL disk. I was able to develop a "memory map" of a QL disk this way.

DEF PROC INN, this was used in part with the PROC QL to help control my peeking about the QL disks. I typed INN, answered the prompts, then typed in QL.

DEF PROC OPN, this asks you which drive to look at. Opens a RAM disk file, and "OPENs" the target disk. So far, in all the experimentation with this utility I have NOT harmed a 2068 disk at all. But it is best to work on a copy of your disk.

DEF PROC TIM, this is meaty. It will read a sector of the 2068 disk and print it to the screen. It then asks if you want to transfer the material to the ram disk file, if so, then COPY the 10 sector block of "data" to the ram disk.

DEF PROC DISK_IT, does the actual copying of the track. Since I use the program "EDITOR SE" I use line 520 to print to the ram file the source track, side, and sector I was currently reading. It may be deleted if you wish.

DEF PROC AA & PDET, these just print information to the QL screen.

DEF PROC CLO, as far as the QL and my TRUMP card are concerned, this PROC was necessary. When you are done copying a file to the ram disk, it needs to be closed. The TRUMP card needs to see that the disk is "closed" the 2068 does not care.

DEF PROC REST, sets the drive heads to track, side, and sector 0, or "Parks" the drive heads if you need it.

These are the steps I use. So far, I am toying around with text files from MSCRIPT and TASWORD, and data files from PRO-FILE. For 2068 disks I type OPN (enter), then type TIM (enter), get the file(s) I am interested in, then CLO (enter).

Copy the ram file to a QL disk. Then load QUILL of EDITOR to work on the file to clean up and stray unwanted contents. This method "gets" all of a track (5120 bytes). So the file will have some "garbage" following any useable data to the end of the file. Usually just spaces or some such.

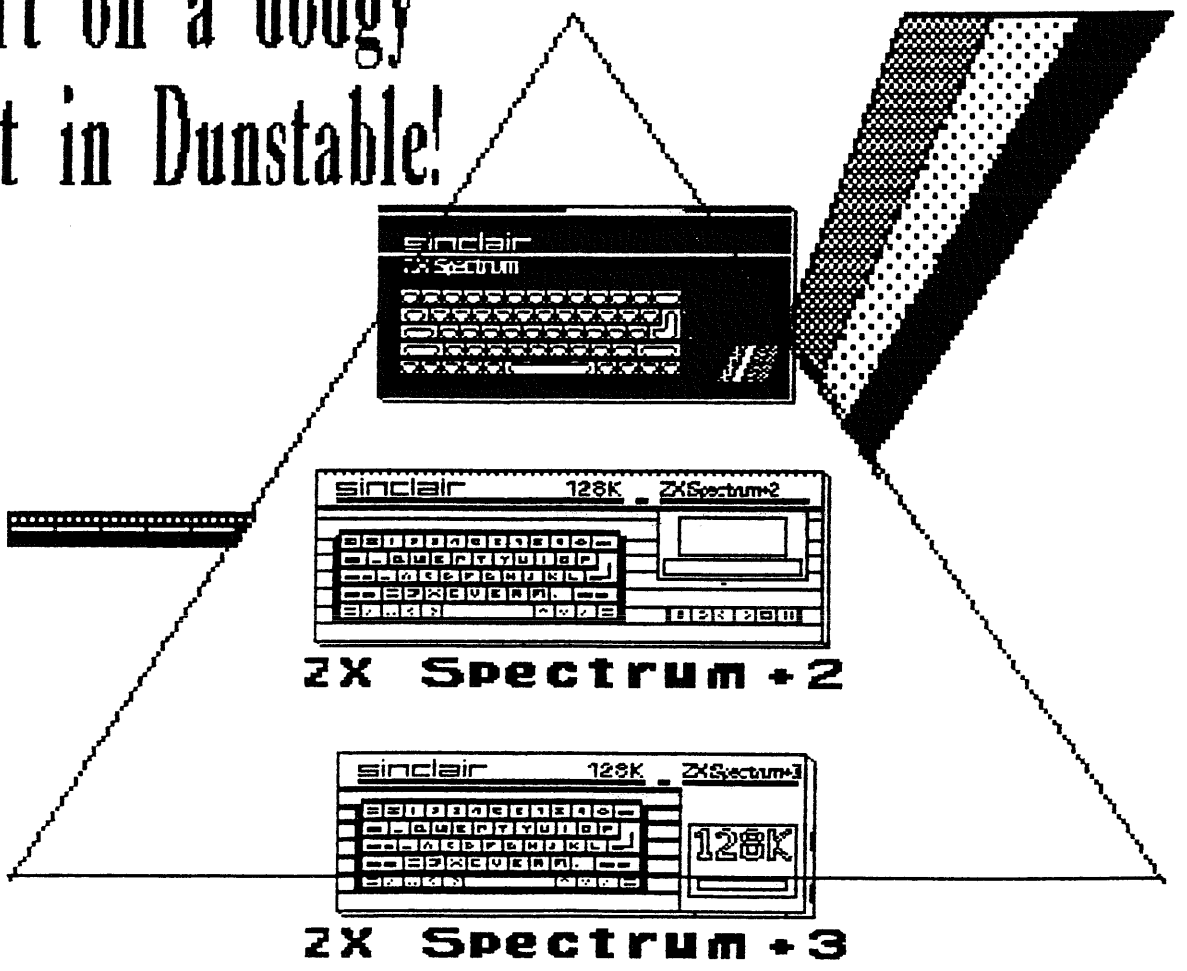
Experiment, use, enjoy, or just fool around with this. I believe that this can work on AERCO and LARKIN disks once you understand how they write to the disks. If you try this, you need to experiment with the FOR/NEXT loops in the PROC TIM.

```
100 DEFine PROCedure rest : GET #4\257,a$ : a$='' : END DEFine
110 :
120 DEFine PROCedure opn
130 CLS : INPUT \\\'Which drive ?  ( 1/2 ) ';dr
140 OPEN_NEW #3,raml_2068_files : OPEN #4,'flp'&dr&'_*d2d'
150 END DEFine
160 :
170 DEFine PROCedure clo : CLOSE #3 : CLOSE #4 : END DEFine
180 :
190 DEFine PROCedure aa : PRINT a$ : END DEFine
200 :
210 DEFine PROCedure ql
220 LOCal track , side , sector
230 inn
240 FOR track = 0 to trk-1
250 FOR side = 0 to 1
260 FOR sector = 1 to 9
270 REMark rest
280 pdet
290 GET #4\sector+side+256+track*65536,a$ : aa
300 IF pause$=="y" THEN : PAUSE(-1)
310 END FOR sector : END FOR side : END FOR track
320 END DEFine
330 :
340 DEFine PROCedure tim
350 REMark   JLO DOS uses track 0, sectors 1-10 for CAT and LOADER software
360 inn
370  FOR track = 0 TO trk-1
380   FOR side = 0 TO 1
390    FOR sector = 1 TO 2
400    REM rest
410    pdet
420    GET #4\sector+side+256+track*65536,a$ : aa
430    END FOR sector
440   CLS #0 : PRINT #0 : INPUT #0,"Relocate this side and track ? ";ans$
450   IF ans$=='y' THEN : disk_it
460    END IF : CLS #0
470   CLS : END FOR side : END FOR track
480 END DEFine
490 :
500 DEFine PROCedure disk_it
510 FOR sector = 1 TO 10
520 GET #4\sector+side+256+track*65536,a$
530 PRINT #3,'sector ';sector,'track ';track,;'side ';side\a$
540 END FOR sector
550 END DEFine
560 :
570 DEFine PROCedure pdet : PRINT 'sector ';sector,'track ';track,;'side
    ';side : END DEFine
580 :
590 DEFine PROCedure inn
600 CLS : CSIZE 1,1 DIM(pause$(1) : INPUT \"PAUSE ? ";pause$
610 INPUT \ '40 or 80 Tracks? ';trk
620   IF trk <> 40 AND trk <> 80 THEN : GO TO 610
630  END IF
640 CLS : CSIZE 0,0
650 END DEFine
```

public pd domain

P-D-W-S-R!

Garner Designs: a report on a dodgy outfit in Dunstable!



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"THE FIRST ISSUE OF OUR REGULAR NEWSZINE OUT EVERY 2 MONTHS FOR CLUB MEMBERS"

£1.50 (R.R.P.) UK ED'

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PAGE 10: UPDATE ON NEW TITLES

PD Power was originally going to be a magazine, but due to problems in finding regular contributors, it was decided that a newszine was a better option for now. As time progresses, hopefully this publication will expand to the originally intended format.

NEWSFLASH: Prism PD has now made contact with a Canadian User Group called SINC-LINK. Hopefully more contacts will be made, and we are currently trying to produce a TIMEX-SINCLAIR emulator to run American software. More on this next issue.

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EDITORIAL BIT

GREETINGS!

Here it is, the first issue of PD Power, bringing you the best in news from the world of Public Domain and Spectrum Computing. My name is Martyn Sherwood, and I am the 'culprit' responsible for setting up Prism PD & PD Power.

I think for this first Editorial Bit, it will be a good idea to give you a run-down on the history of Prism PD to date. It was while working at Rugby Community Printworks (a local charity) in 1992, as a graphic designer using Apple Macs, that I thought it would be nice to set up a service of charitable status for the Spectrum. The idea of public domain appealed to me, and in any case, this was becoming well established on the CPC, so why not the Spectrum?!!

THE BOSS!

Prism PD kicked off in February 1992. Although the number of titles was not substantial, we never the less had a good response from Specchums and over the following 7 months steadily grew from strength to strength. September earmarked a new stage in the development. We were offered the chance to take over Total PD, and despite hitches, this was completed by Christmas. This means that we have now got every type of software on offer. We also have commercial titles available. We have established contact in the U.S.A. & Canada with Timex users. I'm sure things can only get better, and with your support the Spectrum will survive.

Happy Computing,

PLEASE READ ME: **Instructions for US & CANADIAN Timex-Sinclair users. Payment is by postal money order or send English coinage. £2 per set of any 18 titles. Send a C90 tape (not the case), with your name on, inside a jiffy bag for protection & re-use or Prism PD will not be responsible for damaged goods. Orders sent in 6-7 days. Orders weighing over 60g then add £1.21 / each additional 20g add 32 pence to avoid surcharge. Payable to MARTYN SHERWOOD ONLY. All titles transfer to disk.**

Amstrad 464/664/6128

AMAM

Sinclair Spectrum

48/128+2/2A/+3

Prism PD, 13 Rodney Close, Bilton, Rugby CV22 7HJ

UTILITIES BUSINESS & EDUCATION: U1 Print daisywheel pics, U2 User definable grids, U3 Print a LARGE poster, U4 Define a key routine, U5 Weekdays in 3 languages, U6 PD database - lacks SAVE/LOAD routine - (please help!), U7 Line renumber routine, U8 Border colours, U9 Paper/Ink/Graphics demo, U10 ATTR.No. U11 Invert text effect, U12 Use your own art loading screens, U13 Fun security system, U14 Scroller text effect, U15 Vary your INPUT position, U16 Hexlist, U17 Data Move (Microdrive), U18 Posh CLS, U19 Screen flash, U20 Peek, U21 Dec-hex, U22 Large text, U23 Menu, U24 Drop shadow text effect, U25 Poke, U26 High score table, U27 Phone book, U28 Character set designer, U29 m/c Break, U30 Printer toolkit, U31 Cashflow accounts prog', U32 (withdrawn, will replace with a WP soon), U33 Recover erased +D files, U34 8yr Cal, U35 Perspective text effects, U36 Reflect text effects, U37 multiple system save routine, U38 Font 1, U39 Font 2, U40 to U43 = Scroll up, Scroll down, Scroll left, Scroll right, U44 CAT tape files, U45 Disable the break key - 48K only, U46 64 printer aide, U47 Hide the screen display, U48 See hidden messages in games, U49 Zoom the screen for editing, U50 Check free memory, U51 48K keyboard buffer, U52 Read kempston joystick ports - 48K only, U53 128K screen animation - needs U54, U54 Demo, U55 Downtown, U56 ASCII edit, U57 Day convert, U58 Union Jack demo, U64 Automatic hex saver, U65 Musical input display, U66 Soundz, U67 Minstrel music maker, U68 Minstrel 1, U69 Minstrel demo - needs minstrel 1, U71 Sound sampler, U72 Vat prog', U73 Accounts prog', U74 48K Toolkit, U75 Disassembler, U76 Hexloader, U77 Icons patterns & fonts, U78 Metric conversion, U80 Word spin, U81 Pattern show, U82 Fake NEW, U83 Unusual CLS, U84 Change the editor colours, U85 Print inlay cards, U86 Use pokes on the +D, U87 48K Data typer - 48K only, U88 +D Gauntlet 2 utility, U89 Maths equation solver, U90 Screen$ manipulator, U91 +D clock, U92 Spelling aid, U93 Test your morse code, U94 48K Soundsytem, U95 Morse code teacher, U96 Screen magnifyer, U97 Find any day in the 20thC, U98 Notebook, U99 2A +3 printer utility, U100 48 & +2 printer utility, U101 Comms prog' 1 for VTX5000, U102 Comms 2, U103 +D snap menu screen, U104 +D adult jokes, U105 File copy/rename , U106 Turbo tools for programmers, U107 The Sprog - Various commands (extensive), U108 ASCII viewer, U109 Extensive font editor, U110 Normal or headerless file viewer, U111 128 DTP fixer for the grey +2 - abort printing without losing text files, U112 Multidump 1, U113 Multidump 3, U114 Mousedraw routine, U115 Onerror - trap errors, U116 Catram 128, U117 ATTR 128, U118 PFN print system, U119 Screen clearer, U120 Rem-maker, U121 Dubtex, U122 Typeliner double fonts, U123 Typeliner graphic alphabets, U124 Headliner bug fix, U125 Deco fonts pack 1 - for typeliner, U126 Deco fonts 2, U127 Gamesaid - grid to design icons etc, U128 Continue routine, U129 Centre text routine, U130 Mouse routine, U131 BASIC scroller, U132 Custom 48K NEW, U133 Tasword file previewer, U134 Graphic window inputs, U135 File Organiser, U136 Renumber PPD, U137 Alpha data sort, U138 Inlay card design 3.7, U139 GEstats - history of elections 1950-92, U140 DEVAL - remove hindering VAL statements, U141 Make REMS of any size, U142 MENU 2 - new menus ROM style, U143 Streams - streams menu style, U144 DUBTEX - mix double height & normal text in a print statement, U145 BAscan - search basic listings for keywords & variable names etc & print them, U146 Clear-all! - remove files in Wordmaster in one go - brill!, U147 "CP/M3" SPECIAL +3 COMPILATION PACK - includes drive a: formatter to 203K - 32 progs + CP/M utils as well! Send £2 + disk, U148 HEADREAD - header reader, U149 FILECOMPRESSOR (NOT +3), U150 48K Copier (NOT +3), U151 Screen compressor, U152 128K file copier, U153 MAD 2 MONITOR (NOT +3), U154 Edit Sampler + demo file (NOT +3), U155 Genious Mouse Tester (+3 only), U156 Histogram charts (+3 only), U157 Line Graph charts (+3 only), U158 +3 disk editor, formatter, etc. U159 Comms pack of 11 progs £2 + extra disk, U160 Video Titling pack £5, U161 Colour Animator, U162 Euro font designer, U163 Hex loader II, U164 +D to tape copier, U165 +D file tester/cat, U166 +D filer, U167 Memory resident coders aid, U168 Border scroll, U169 Horizontal attr' scroller, U170 UDG Designer

Digitized TV pic's Christine (Neighbours)

SPECIAL ART PACKS: NOT 3"disk £2 each

1 Dear John, 2. Star Trek, 3. Cheers, 4. Cagney & Lacey, 5. Shakespears Sister, 6. Bananarama, 7. Duran Duran, 8 Ultravox, 9. Neighbours, 10. Eastenders, 11. Pet Shop Boys

SPECTRUM LICENSEWARE: £5 each

LW1 - MULTISTORE - store 7K in your multiface

LW2 PAGE SYSTEM WORD PROCESSOR - also acts as a database.

PRISM PD! - INCORPORATING TOTAL PD!

GAMES

G1 - Nelly 128 - Catch the falling Elephants- / G2 Batnball - An addictive 1 or 2 player game / G3 - DT's L&R - Try and get the highest score! / G4 - Alienatta - Defend your ship against the aliens / G5 - Cacapture - Excellent 2 player stratergy game / G6 - Brickbat - Colourfull - test your reflexes! / G7 Magicfore - A game that uses logic - are you up to it? / G8 MartianKO - Left, right aim - and blast away! / G9 SincC5 - Run over the pedestrians in your C5! / G10 - Skittles - How many can you knoc down? / G11 - Cypher - Great PD version of the Mastermind game / G12 - Voyerger - A blast of a PD game / G13 - Nell - 48K version of the classic arcade game / G14 - Manblitz - Bomb the Manhatten skyline! / G15 - Frogger - Ver colourfull and quick version of a classic! / G16 - Galaxydef - PD Space Invaders on your Spectrum / G17 - Basicbing - Pla Bingo to win! / G18 - Invaders - A great game in true Invaders style / G19 - Fishing - It was this long.....!!! / G20 - Minefield - Rescue the soldiers - watch out for the mines! / G21 - Spotlight - Avoid being seen at all costs / G22 - German - A German spelling game - good fun! / G23 - French - Another spelling game / G24 - Rider - Jump the buses lik Evil Kenieval! / G25 - Magic Square - A sliding puzzle game.....a delight / G26 - Solitair - Computer version of the boar game / G27 - House - Dare you enter?!! / G28 Globular Troubles - our best game - commercial standard! / G29 Maze - ca you escape? / G30 Mission Collision - great space blaster / G31 - Xygor 5 - space romp! / G32 - Draughts - boardgam classic / G33 Annagrams - puzzle mania!! / G34 - Wordsearch - another classic / G35 DartsLord - Can you better Joh Lowe? / G36 Treasure Trail - get searching / G37 "THRASH" a commercial space game - brilliant £6.99

ART PACKS: NOT +3 DISK £2 each

1 Spectrums / Hardware, 2 Office & Business, 3 Sports, 4 People, 5 Frames & Borders, 6 TV Celebrities, 7 Pa Time, 8 Music, 9 Transport, 10 Announcements, Cada 1, 2, 3, (3 titles of ported IBM graphics.

video digitizing

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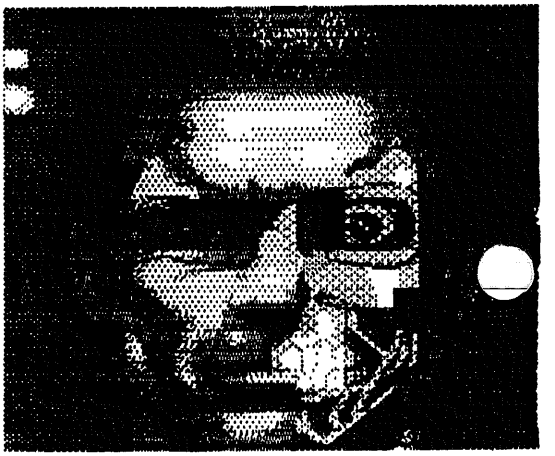


TERMINATOR 2

Posters exclusive to club members

GRAPHIC AND MUSIC DEMOS (*) = +3 users load via tape/+D

D1 Madonna, D2 Adamski, D3 Technotronic, D4 Turkey, D5 Weird, D6 Grand Prix, D7 Pepperami (*), D8 Axel F (*), D9 MQM, D10 Shock-Megademo (*), D11 Grafix 1 (*), D12 Spectec 3 (*), D13 Court 2, D14 PetShop Boys, D15 Bart Simpson 1 (*), D16 3D Show, D17 Nightfire (*), D18 Vectors, D19 Lyra II (*), D20 Vidi ZX Party (*), D21 Song In Lines 5 (*), D22 Quinquagesima, D23 128K Only Screen (*), D24 Scrolly Star (*), D25 Demos, D26 Scanner, D27 wicked, D28 Megademo (*), D29 Red Sector (*), D30 Nanodemo, D31 Signal 3 (*), D32 Hypersonic 2 Preview (*), D33 EEL, D34 Ghaza 1, D35 Slideshow (NOT +3), D36 Overscan (NOT +3), D37 Hypersonic 48K (*), D38 Prisoner, D39 Zaphod 2 (NOT +3), D40 NMI 1 (*), D41 NMI 2, D42 CIR demo, D43 NMI 3 (*), D44 NMI 3 NOTE (*), D45 Madhouse (NOT+3), D46 U.Spirits, D47 LSD (NOT+3), D48 Hypersonic 2 (*), D49 MQM 2, D50 Madness Remix, D51 TerniMADor (over 18's only), D52 CD Demo, D53 Interlace, D54 Crazy Demo, D55 Voyerger Demo, D56 Music Bank 5 (NOT +3), D57 Explosion (*), D58 Spirit, D59 Sound Tracker, D60 Compiler, D61 Virus II (*), D62 Beruska, D63 Windows (*), D64 Music, D65 Train Spottin (*)

EXAMPLE OF OUR CLIP ART!

NOTES: As you will only be able to pay by postal money order or send us englist 'n we though it best to allow you to have more titles. UK & European customers are only allowed packs of 12 titles for £2. W hope our decision cuts out the burden of charges on changing currency or buying money postal orders

INEXPENSIVE Z-88 PARALLEL TO SERIAL CONVERTER

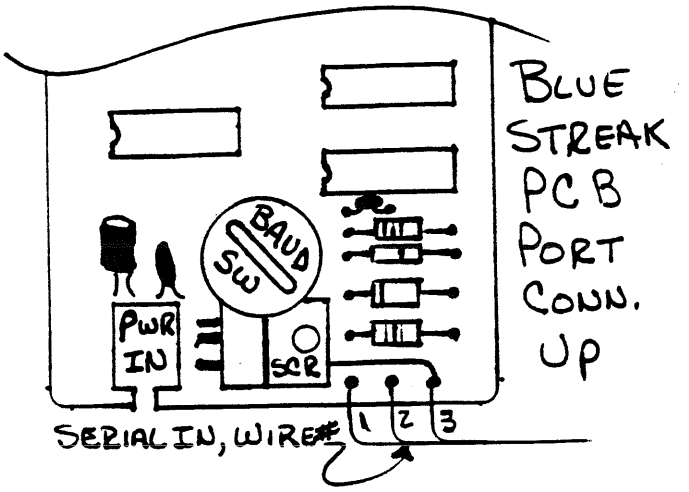
j. shepard

I HAVE MENTIONED BEFORE OF MY RESISTANCE TO PAYING MORE FOR AN ITEM THAN I THINK IT'S WORTH.

I FEEL THIS WAY ABOUT THE PRICE OF CURRENTLY OFFERED PARALLEL TO SERIAL CONVERTORS

ESPECIALLY, THOSE OFFERED FOR THE Z-88. SO, I WAS DOING WITHOUT UNTIL MY FRIEND, BOB SWOGER, WHO FORTUNATELY DABBLES IN OTHER COMPUTERS, LIKE COCOS, TOLD ME OF A CONVERTOR FOR A COCO THAT COULD BE HAD FOR $40. I ASKED THE NAME OF THE FIRM HANDLING THIS JEWEL. DAYTON ASSOC.,9644 QUAILWOOD TR., SPRING VALLEY, OHIO 45370, PH. (513) 885- 5999. THEY CALL IT THE BLUE STREAK ULTIMA. THE COST IS $29.95 IF YOUR PRINTER PROVIDES +5 VOLTS DC ON PIN 18 OF THE PRINTER CONNECTOR, IF NOT THEN FOR $6.00 MORE, THEY'LL INCLUDE A WALL PLUG POWER SUPPLY. IT HAS A BAUD RATE RANGE FROM 300 TO 19200, SELECTABLE BY A SWITCH!!! IT COMES WITH A DIN PLUG, WHICH WILL HAVE TO BE CONVERTED TO A DB-9 TO BE ABLE TO HOOK UP TO THE Z-88'S SERIAL PORT, BUT IT'S ONLY THREE WIRES, SO EVEN IF YOU DON'T HAVE THE EXPERTISE TO HANDLE A SOLDERING IRON, YOU CAN FIND SOMEONE TO DO IT USING THE FOLLOWING INSTRUCTIONS FOR WIRE PLACEMENT.

SEPERATE THE PLASTIC CASE BY CAREFULLY PRYING IT APART AT THE SEAM WITH SOMETHING LIKE A SMALL SCREWDRIVER. YOU'LL HAVE TO DO THIS BECAUSE THE PEOPLE WHO PUT THESE TOGETHER DON'T OBSERVE A COLOR CODE AND YOU'LL HAVE TO DETERMINE WIRE LOCATION VISIBLY. ONCE YOU'RE INSIDE, HOLDING THE CASE WITH THE PRINTER CONNECTOR END AWAY FROM YOU, WHICH IS THE SERIAL PORT WIRE ENTRANCE END TOWARDS YOU, YOU'LL SEE THE THREE WIRES OF THIS SERIAL CABLE SOLDERED TO THE PCB IN A ROW.



IF YOU'LL NUMBER THEM FROM LEFT TO RIGHT AWAY FROM THE SCR, THEN THEY CONNECT TO THE DB-9 CONNECTOR AS FOLLOWS:

```
WIRE #1 -- DB-9 PIN#2
     2 --   "   "  5
     3 --   "   "  7
```

WHEN THIS IS DONE AND YOU PUT THE PLASTIC CASE BACK TOGETHER WITHOUT CATCHING THE WIRES ON TOP OF THE BAUD RATE SELECTOR, YOU'RE IN BUSINESS.

THE DB-9 CONNECTORS SOLD BY RADIO SHACK (276-1403) HAVE GOOD HARDWARE FOR CAPTURING THE WIRE. YOU WILL HAVE TO GET THE PIN CRIMPING TOOL.

BEFORE YOU TRY TO PRINT OUT WITH <> PO, YOU SHOULD FIRST MAKE SURE YOU SELECTED THE 9600 BAUD RATE ON THE PANEL. YOU GET THERE BY KEYING []S. THEN, OF COURSE, YOU SELECT THAT ON YOUR BLUE STREAK, ALSO.

I FOUND THE WAY THIS UNIT IS SHAPED GETS IN THE WAY OF MY PAPER PATH SO I GOT A CABLE EXTENSION TO GET IT OUT OF THE WAY. DO NOT USE AN EXTENSION LONGER THAN 24 INCHES, IT WILL DELAY THE BYTES AND MANY DROP OUT. I USE A RADIO SHACK CAT. NO. 26-2867. ITS $10.95 IN THE STATES.
OTHER THEN THAT IT WORKS AS IT SHOULD,
SO ENJOY

TIMEXERS CAN SURVIVE WITH HELP!

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JULY/AUGUST 1993
July 28, 1993

Dear Out-of-Town members,

Let's mention the newsletter first. Jeff gave me the PRISM +D format disk that he mentions in his editorial. And he also loaned me a 3 1/2 inch drive to try it out and see what I could make of it. I used the "doctor.B1" program (on our Larken library disk #1) to take a look at it. I found that I was able to load the tracks into "doctor" without a CRC error appearing. I saved segments of the track as code files, and loaded them back into an empty 2068. But I had difficulty in getting them properly integrated in the 2068. I gave up, because I had seen the files earlier on tape, and they were not worth spending a lot of time with. I'll maybe work on it a bit more and write an article about it for next issue of the n/l.

But I have been doing other interesting things. Don Lambert, in the current issue of ZXIR Clive Alive, asks whether there is a way to load a test file into REM statements in a Basic program. That's a challenge I could not resist! So I did work up a program and procedure to do just that. I'll make an article about it for the next issue of SINC-LINK.

Another project has interested me. Some time ago I wrote a program which would load MSDOS text files on disk into Mscript files on a Larken disk. Look at our Larken library disk #27. Well, I thought, if I can load a track of an MSDOS disk into the 2068, I should be able to save that track onto an empty disk. If I did that track by track then I would have copied an MSDOS disk to a blank disk. I reworked the trusty "doctor.B1" program a bit, and what do you know, I seem to have succeeded. The problem is, however, that so far I have not been able to change drives during the process, so I have to switch disks back and forth in one drive, for every track that is copied. I only did one disk, and that meant two switches for each of 80 tracks! Wow, I'm not doing that again until I solve how to change drives.

Hugh Howie has several good, lengthy articles in the current issue of SINC-LINK, about his experiences at the QL Fest at Newport, R.I. Very interesting reading. In fact, if it wasn't for Hugh's efforts in the newsletter, it would be a pretty thin issue. Come on, out there; we'll fold the newsletter if no one writes material for it. And I'm not kidding, either; not the slightest bit!

The Scarborough Neighbourhood Watch managed to finagle a computer from Bell Canada. A real oldie, as computers go. It has 680K RAM, a 360K Disk drive, a 20M hard drive, a printer, and colour monitor. I've been playing around with it, since by default, I'm the "computer expert";Ho Ho!.

I've managed to install a front-end menu system, an early-vintage Word Perfect, and a shareware database. Installed programs have to be really simple; no room for Windows applications with 680K RAM, 20M drive, etc. But hey, that's enough for our purposes. It's an interesting challenge though. I'm busy reading books called "Using MSDOS", and "DOS for DUMMIES"; and learning about things like AUTOEXEC.BAT", CONFIG.SYS, and EDLIN (I told you it was old!, it uses a 8088 chip, not even a 80286!). Sometimes it's nice to come back to the 2068, where I know where everything is!

Tim Swenson has sent me several Timex simulators. One makes an MSDOS think it's a ZX81, another makes it behave like a Spectrum. These seem to be different than others I have. Anyone for copies? They don't really belong in the Larken library. I'm at a slight loss how to catalogue them!

Sincerely,

George Chambers