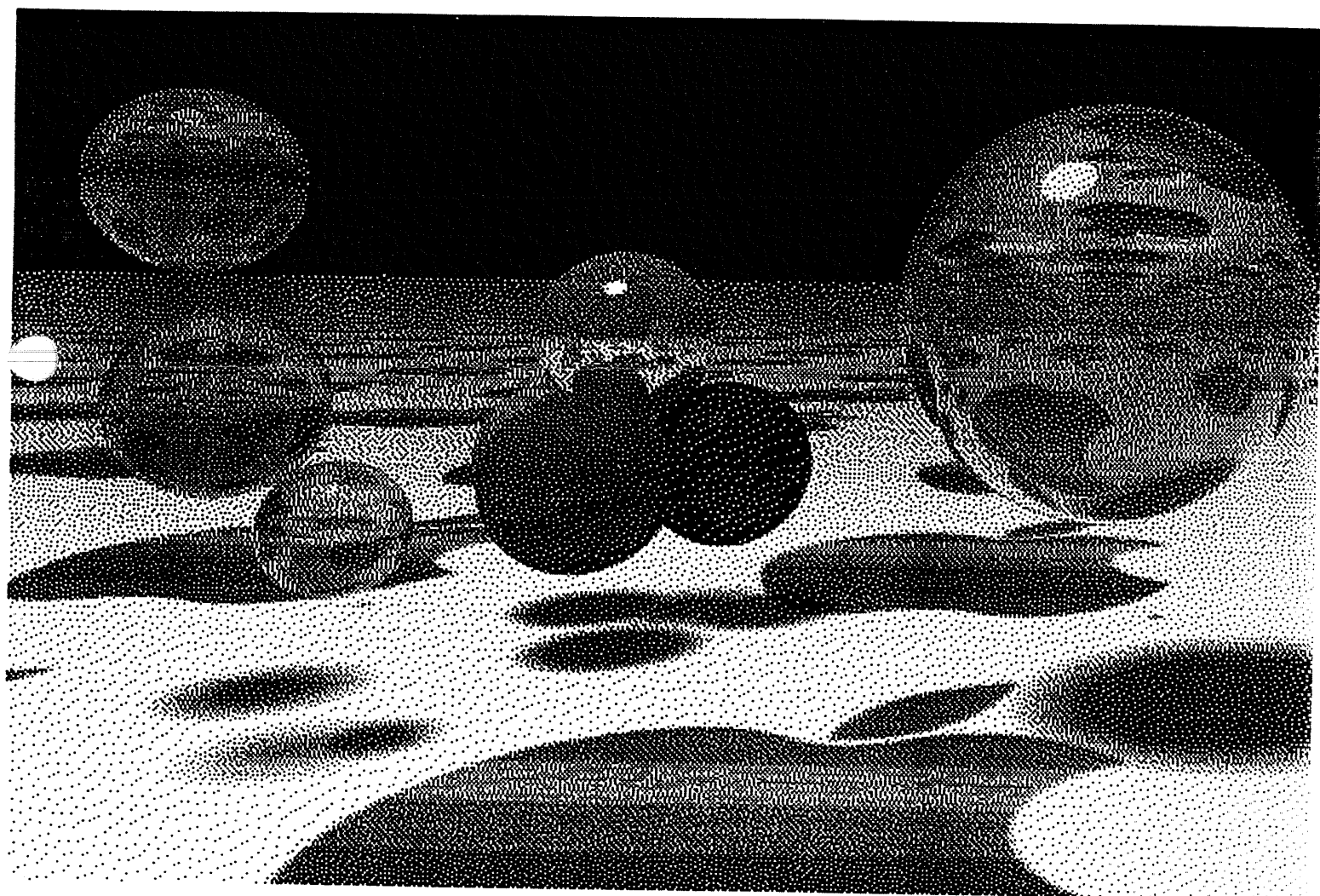




# SINC - LINK



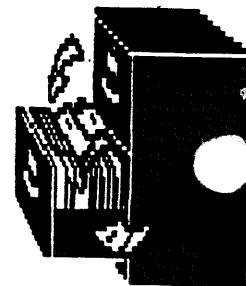
**MAR - APR '93 VOL 11-2**



**TORONTO TIMEX-SINCLAIR USERS CLUB**



# SINC - LINK



## MAR - APR '93 VOL 11-2

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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 WEDNESDAY, MARCH 17TH AT 586 ONEIDA DRIVE, BURLINGTON, ONT. 7PM START. APRIL DATE TBA.

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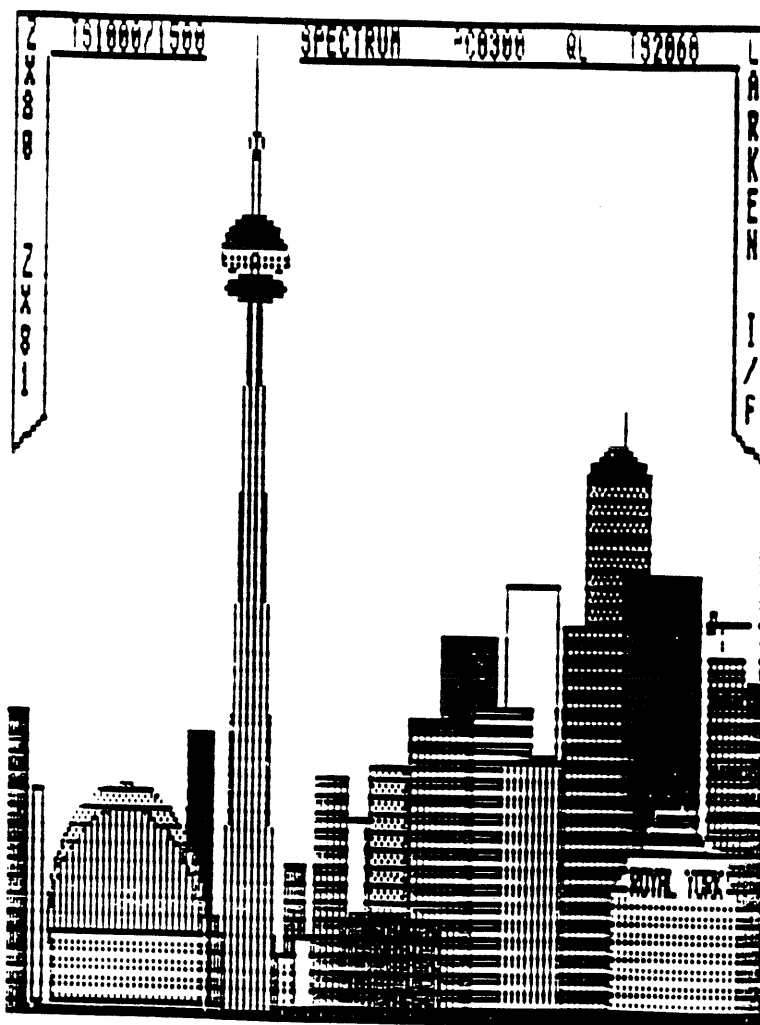
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CLUB, 14 RICHOME  
SCARBOROUGH, ONTARIO,  
CANADA M1K 2Y1.

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( Area Code 416 )  
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BILL LAWSON ( 444-8772 )  
GEORGE CHAMBERS ( 751-7559 )  
LOU LAFERRIERE ( 820-3725 )  
HUGH HOWIE ( 634-4929 )  
JEFF TAYLOR ( 244-8583 )  
GEORGE CHAMBERS, 14 RICHOME COURT,  
SCARBOROUGH, ONTARIO M1K 2Y1  
( 416- 751-7559 )



TORONTO TIMEX-SINCLAIR  
USERS CLUB

## TORONTO TIMEX - SINCLAIR USERS CLUB

SPRING AHEAD 1993

INDEX VOLUME 11-2

Page 2 - Club Stuff

Page 3 - This Page

Page 4 - Editorial

Page 5 - Interbank Database - Part 2 (2068)

Page 8 - Sinc-Link Comes Through Again

Page 9 - SLOWGOLD to Slow Gold (QL)

Page 10 - Notes on QL Lock-ups (QL)

Page 11 - Did You Know? (2068)

Page 17 - Printing Databases (QL)

Page 19 - Tasman "B" I/F & Larken System (2068)

Page 21 - ZX Resources - RS-232 I/O (ZX-81 & 2068)

Page 24 - Text87 and Wordstar (QL)

Page 27 - QUANTA Index (QL)

Page 28 - Copying a SCREEN\$ to the 2040 (2068)

Page 29 - QL SIG (QL)

Page 30 - QLips (QL)

Page 31 - Prism PD Advertisement (Spectrum & 2068)

## Editorial

Well, I'm a little late getting this issue out and I apologize to those readers who have been getting a bit anxious. I do have a few good reasons for the delay though. Sometimes an editor knows an article is coming from one of his writers but that writer is just having a tough time smoothing the rough edges so the editor gives his man some leeway, knowing it will be worth the wait. And sometimes an editor hears of some late-breaking news and just wants to get his facts straight before he prints anything. Both are the case in this issue and since my deadline can slip a bit I felt I could justify waiting for these juicy items. I think you'll agree.

## QL Fest in Rhode Island!

Just when you thought there would never be another Timex-Sinclair computerfest, the good folks on the East coast have announced that there will be a QL Users Fest in Newport, Rhode Island, Saturday June 5th 1993, from 1 pm to 5 pm. Venue to be announced. Already a few of our in-town members have expressed an interest in attending and possibly manning a Toronto club table. More details in the May-June issue of Sinc-Link. Now, if we could only convince the organizers to make it a full T-S meeting. I can think of a few ZX-81's and 2068's who would be interested ...

## Sinc-Link Gets UK Exposure

Thanks to Hugh Howie's mailing drive (see editorial last issue) and out-of-town member Robert Shade's efforts, Sinc-Link has gotten noticeable mentions in recent issues of prestigious UK publications such as *QL World*, *Quanta* and *Sinclair User*. We've already had inquiries from a couple of public domain software vendors, namely *Dr. Dark* and *Prism PD* (see Prism's advert in this issue). Thanks to Hugh and Robert for promoting our newsletter and our club.

## Ian's Back in the Fold!

I'm pleased to welcome long-time member and former article contributor, Ian Robertson, back to these pages. After an illness and very time-consuming work load, Ian is writing for us again and promises to keep at it. Another one for me to chase as the deadline approaches. Welcome back, Ian.

## God Rest You, Jessie

On February 23rd 1993, Hugh Howie's dear wife, Jessie, passed away suddenly, a month before her 66th birthday. A nurse and midwife by profession, mother of three, grandmother, wife and homemaker, this charming, hospitable and inexhaustible woman will be missed by all. Hugh, our deepest sympathies.

J.T.

INTERBANK DATABASE - Part 2  
TS-2068 and the Larken RAMdisk  
George Chambers

*This is the second of two articles describing the insertion of blocks of prepared data into an interbank database.*

*The first article described how the data was massaged into Tasword files prior to being placed into the database. This article will describe the steps involved in actually moving it into the database, i.e. into the Ramdisk banks.*

*There are three distinct steps to this. First step is to finish massaging the Tasword files. Second step, inserting these Tasword files into the computer and RAMdisk banks. And thirdly, entering values into the INTERBANK program code to delineate the parameters of the database, i.e. length of each record, number of records, and number of databanks involved.*

*A Tasword file is not large enough to hold a complete bank of data. That is to say, a bank can hold 32768 bytes while a Tasword file can hold only 19200 characters. I decided to make up Tasword files of 256 lines (each line contains 64 characters). This gives us 16384 bytes, exactly half of the bank size of 32768 bytes. A very convenient size.*

*The reason for keeping the records in chronological order, from the beginning of the process is easy to explain. It is because of a serious flaw in the Interbank Database SORT feature code; every time a SORT is done a number of files become corrupted. A flaw that we have to work around, since the m/c programming involved is beyond my capabilities to correct.*

*There is really no need to sort this database, since it's only natural order is chronological. So the cheap and dirty solution is to ensure the database is installed initially in it's correct chronological order. And refrain from using the SORT function thereafter!*

*To get back to the task. Initially the Tasword files were of different sizes. It was necessary to create a series of Tasword files each exactly 256 lines in size. This was done by merging files and line deletion. Each file created by this means was saved off as "file01", "file02", etc., in chronological order, each file being exactly 256 lines (16384 bytes).*

*Now that the Tasword files described above have been created and saved, it was time to combine pairs of these files to make blocks of code 32768 bytes in length, i.e. a bank of code containing 256 records.*

*I started off by loading the first file, the "file01.CT" from disk directly into an empty computer by the instruction: RANDOMIZE USR 100: LOAD "file01.CT" CODE 32768*

*Next I loaded the second file, "file02.CT", with the instruction: RANDOMIZE USR 100: LOAD "file02.CT" CODE 49152*

*Now the computer is filled with the first bank of data. This was saved back to disk with the instruction:*

*RANDOMIZE USR 100: SAVE "bank00.C1" CODE 32768,32768.*

*Shut the computer off momentarily, to clear the memory. I then loaded the next two chronological files into the computer using the same process as above; saved this to disk the same way, using the filename "bank01.C1".*

The same process was used for the third bank of data. We now have three files, each containing 32768 bytes of data. Well, the last file, although we saved off 32768 bytes, was only partially filled with data. No matter.

I now have to create a new database shell to hold and manage these files. I loaded an existing database file, and selected the "NEW DATABASE" option. It asked for a new file name and the record length of the new file. I entered "SINCLI" and 128 bytes. The program then returned to the menu. I selected the option L)ist, and asked that it start listing at item 1. It proceeded to list records. Of course they were empty, but no matter. I am in the computer memory. When the "scroll?" prompt appears I enter "N". A "PRESS ANY KEY" prompt appears. I BREAK into the Basic program. I then proceed to load the first datafile prepared and saved earlier, "bank00.C1".

At this point we have the first block of data, "bank00.C1", entered into the database. Enter GOTO 1, to re-enter the database. Select option L)ist, and start the listing at record 250. The records 250 to 256 contain SINC-LINK files. Record 257 and beyond contain rubbish. Actually, what has happened is that the first bank of the RAMdisk has been bankswitched, and you are viewing it.

Remember I said I had saved off the RAMdisk beforehand. Here's the reason. We are going to write the next block of our new SINCLINK file over this RAMdisk bank right now.

When the "scroll?" appears, enter "N", and then Break into Basic, as before. You must do this when you are viewing records between 256 and 511, because we want to load the second file, "bank01.C1", into the first RAMdisk bank. We know records 256 to 511 are held in the first Ramdisk bank and also that when we are viewing them the RAMdisk bank has been switched, (interchanged) with the computer memory above address 32768. Did I lose you there!

I said I broke into Basic. I now load the second SINCLINK file, "bank01.C1", into the computer. After this, I enter GOTO 1, to get into the database program. Doing this automatically restores the RAMdisk bank to it's original status. Selecting option L)ist, I can then choose to start the listing at record 1, or 256, or 500, for example. All these will bring up SINCLINK files. However if I List 500 I will presently move along to record 512. At this point the second bank of RAMdisk will be bankswitched into the computer memory. When a "scroll?" prompt appears after record 512, break out of the program the same way as described previously, and proceed to load the last SINCLINK file "bank02" into the computer.

It is possible to do the bankswitching by using the OUT command. For example, one could switch the first RAMdisk bank in with the instruction OUT 244,240: OUT 7,71; and switch it out with OUT 244,0: OUT 7,0. However the approach used in this article seems to be somewhat simpler.

Re-enter the database program with a GOTO 1, and List starting at say, record 600. We are looking for the number of the last record in the file. When I come across it I shall write it down.

Since the database does not know how many records we have installed, I have to let it know. I do this by poking a number into the "SHELL.Cc" program code. Similarly, the database does not know how many banks are involved, and we have to poke that info in also. The addresses for the POKEs are:

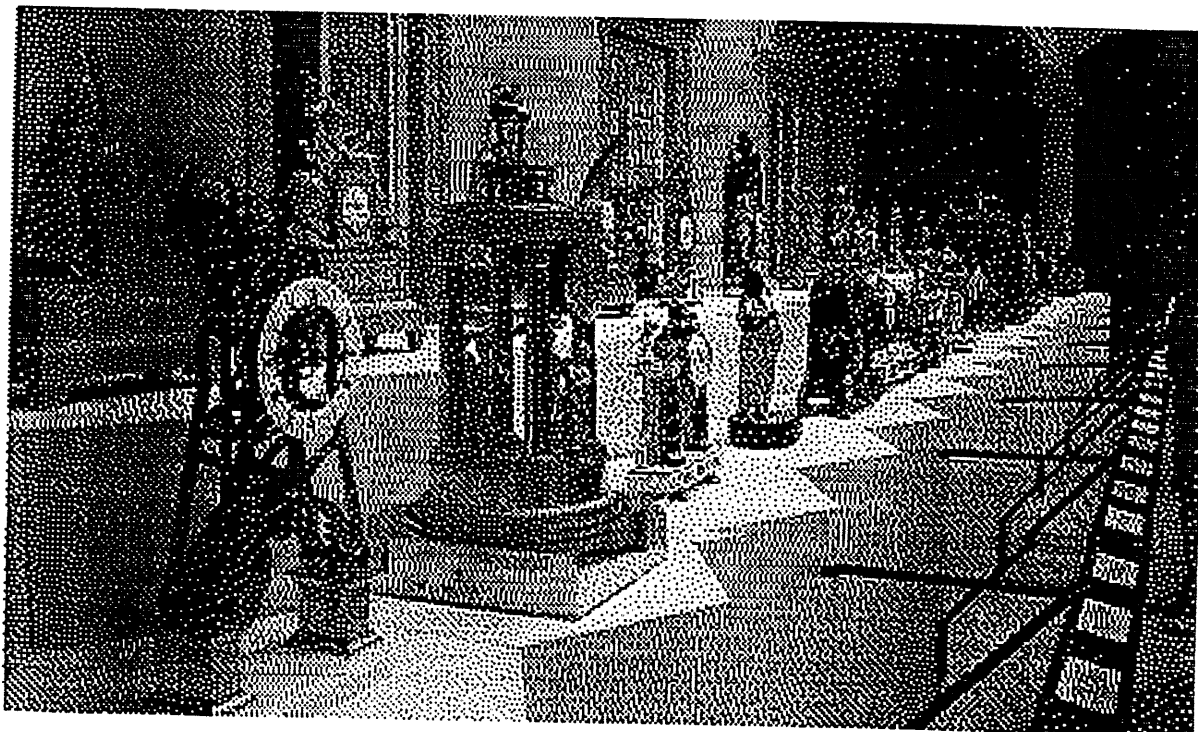
- 32766/67 The total number of records in the file.
- 32765 The number of banks used by the file.
- 32760 The length of each record.

Because the number of records exceeds 256 two addresses are required to hold the number. Use the Larken double-POKE feature: Enter RANDOMIZE USR 100: POKE 32766,x (where x is the number of the last record plus 1, that was recorded earlier.

The computer bank is referred to as "bank 0"; the first RAMdisk bank becomes "bank1", and the second RAMdisk bank is "bank2", and so on. We have used two RAMdisk banks, therefore enter POKE 32765,2. The length of each record was set earlier when the new database was established, and does not need to be entered manually.

The transfer of the SINC-LINK index data has been completed. Now all that remains to be done is to save the database to disk. Select the Q)uit option, and indicate which drive is to receive the data.

\*\*\*\*\*



## Sinc-Link comes through again -- Plea for BIG EARS meets with some success.

### But we are STILL LOOKING for BIG EARS.

It is nice to know that when Sinc-Link asks for aid in a worthy cause, we are able to reach someone who can help. In the Nov/Dec issue of Sinc-Link a plea was printed from Jeff Dodds of Edinburgh asking for assistance in locating BIG EARS, for a project he was working on to aid the dis-abled. Here is what he now has to say.

H.H.H.

=====

H. Howie  
Oneida Dr  
Burlington  
Ontario  
Canada

J.R.Dodds  
87/53 Pennywell Gdns  
Edinburgh  
EH4 4TF  
Scotland

22 1 93

Dear Hugh

Sorry to take so long over writing to you but I've been in and out of hospital so much since I came back from Canada, I haven't had time to get near my word processor. So here goes.

Since you published my appeal in your magazine I have received offers of help from California and from, I think, Indiana IN? Donald Lambert the chairman of the latter group has promised to run the letter you published in his next newsletter but says they only publish quarterly so it may take some time.

As to my own work, I have a friend here who has several ZX81's as well as eeprom programmers, so see no difficulties in programming a ZX81 motherboard. I intend that the motherboard drives an LCD display as well as stepper motors. The LCD display will show a question and wait for an input, which will take the form of Yes, No and Stop. Stop, the most important input, will put the board back to standby condition, whilst Start will wake it from that state. Yes would immediately implement the question asked and return to that same position for further input, while No would progress to the next question.

Stepper motors require a maximum of 200 herz to drive them, and 48 steps per revolution, so if I restrict each Yes input to a maximum of 48 steps I shall get one revolution of the motor. If I further reduce the drive by a fifty-to-one worm drive I will now get a seven degree movement of the arm at any motor. Not much, but enough for most purposes, and certainly enough to prevent damage. As you can see the speed will be about 1/4 second for 7 degrees of movement, or about 8 seconds for 180 degrees, so it is not fast. But then, the people using it are not likely to be in a hurry either.

Warmest greetings to your fellow members and may the New Year bring all you wish yourselves.

Yours Faithfully  
(signed)

J. R. Dodds.



# S L O W G O L D     T O     S L O W     G O L D

by Hugh Nowie.

A long long time ago when your daddy was a little boy, there was a young prince in the land, who thought he had found the answer to all his peoples problems, and he called it the QL. He had great hopes that this would make all the people in the kingdom happy, and himself rich, and get him great honours in the land.

He got himself rich. He got himself great honours. But he did not make all in the land happy, 'cause it was not long till the people in the land discovered the QL was not fast enough, so we had Lightning, Speedscreen, Minerva, and a host of other things foisted on us. 'till along came the ultimate - The GOLD CARD!

Now we had everything - Speed plus Memory and the ability to use large capacity disks. But like all things we ask for, we sometimes get more than we bargained for, and this is what happened with the Gold Card; it was much too fast for so many of our Games. Graphics and the Pointer Environment also suffered. We now wanted to go slow. In the Gold Card there was a little facility called SLUG which did help a little, but still not enough.

Along comes Norman Dunbar and Dilwyn Jones with SLOWGOLD. This little program which costs so little in price is really big in what it can do. Not only does it slow the Gold Card down, but it can slow down any QL. (if you wanted to)

The Painter was a program that was much too fast when used with the Gold Card, and when I tried SLOWGOLD, then Painter slowed down to usable speed.

With SLOWGOLD, there is a little program supplied which you may use to tell you whether SLOWGOLD is ON or OFF.

There is a PANEL facility so that you can use the supplied, &/or designate your own Hotkeys, to change the rate of slowness from within a program.

The SLOWGOLD manual is in the form of a \_doc file on the disk, and when printed out is just over seven pages of really good easy to follow advice and instructions. Even I could follow it.

One thing I found, and let me state here that this in no way affects the operation of the program, I relate this experience to see if anyone can come up with an answer. I am not the only one who would like to know what happens in the program.

When I first got SLOWGOLD, I of course had to do some timing tests on it, and as I have a little graphic drawing program which takes about 9 seconds on the Gold Card to complete, I inserted a little timing facility into this program and ran it at different speeds of SLOWNESS, and came up with some interesting figures.

SLOWGOLD is supposed to have 31 degrees of slowness. Starting at 0 (No Slow) which took 9 seconds, I then went all the way one step at a time to 31, and in the process I found that the slowness peaked at 266 seconds at 15. At 16 was almost at the beginning again, and peaked again with 269 seconds at 31.

Now if it jumped from 9 seconds to 266 seconds in 15 steps, I think that is enough variety for anyone to need. With that I don't need the other degrees of slowness.

I have not taken timings other than for that graphics program, and I don't intend to. The rate of slow-ness I get from SLOWGOLD is good enough for me.

However, I wrote to Dilwyn Jones about this and he does not know how this occurs, and would like to know WHY just as much as I would. Any answers out there?

I got mine from EMSOFT, Box 8763, Boston, MA 02114-0037. Phone (617) 889 0830.

I don't know if Peter has any left at this time.

If not, you could send £5 plus £1 postage, to:- Dilwyn Jones Computing, 41 BRO EMRYS, TAL-Y-BONT, Bangor, Gynedd, United Kingdom. LL57 3YT.

You also could soon be the owner of this wonderful SLOWGOLD for the GOLD CARD.

930219

# NOTES ON QL LOCK-UPS

by Hugh Howie

A while back someone mentioned that I appeared to be reasonably immune to QL crashes and lock-ups etc., and this made me stop and do a little bit thinking, which thoughts might be worth passing on to the rest of the intelligentsia out there.

It is true that I have had less problems than most in this respect. But I am not immune, I have had my fair share of them, but the fault does not necessarily lie with the QL.

When I took my equipment to a school to give a club demo, to be sure the QL would do weird and wonderful things. Between the smoke of frustration and the steam of boiler corks popping, the air was quite often a rich blue in color. When I got the QL back home everything was just fine and dandy. No problems except for getting it all connected up again.

I took notice of what went on at that school, and noticed that there were always, at least very frequently, some high powered floor polishers in operation. My thought was Power Surges, which I have not experienced much at home. Any problems I have had have mainly been of the odd chip sort of getting loose in the socket and having to be pressed back in again. Or a membrane having to be replaced.

Those who have been experienced crashing problems would seem to be living in apartments, or town houses, where there may be many types of equipment in use and possibly connected to the same source. I know of one person who has four QL's and is only now starting to have some success with one of them. Power Surges?

OH Yes! I still get the odd crash, but it is usually because I have done something wrong with the software, like punching the wrong keys and the poor old QL just gives up in disgust and says if you are going to speak to me like that then I am going to bed. And it proceeds to do so. Big problem is that I don't think like a computer.

When I made a trip to New Hampshire last year, I visited Bill Cable who is away

out in the country, and he does not have Hydro. He has his own Solar System, which can be backed up by diesel. But during the three days I was there, we had as many as three QL's networked, and they were all going at the the same time, and we did not have one single crash. That also meant three monitors and disk drives, and printers, and everybody trying to do something at the same time, and messages and programs flashing back and forth on the net. And in spite of all those different things and different operators, we did not have one single crash for any reason! And we were working from a Solar System, WITHOUT the diesel back-up being required.

As this was a monthly meeting of NESQLUG a number of members brought their own QL's, resulting in a good cross reference of many users and units, and many configurations, such as Minerva, Gold & Trump cards etc. As I say, there was not one malfunction that I can recall.

I also use Micro-Drive successfully, my main problem is usually a faulty cartridge failing on me, not the QL. Incidentally while I am on about those pesky micro-drives; did you know that one very very common cause of failure is an attempt to OVER-WRITE on them. That is correct, you should always re-format a cartridge before putting anything on it.

Seems to be that it is possible to fragment a program and also a sector, and actually have segments of two programs on the same sector! So beware - format a micro-drive cartridge before a save, or even a re-save to a cartridge. Don't ask me how this occurs as I don't know.

Never over-write a cartridge.

Those who have solved the crash problem most successfully would appear to have had the Adam Coleco conversion done by Dan Elliott of Cabool. I understand this cures a lot of those surge ills. No I have not had it done myself, as I don't think I need it from the number of crashes I do have. But I still keep this conversion in mind - just in case ---

930103

**DID** I have enjoyed the quality of our newsletter and  
**YOU** I have been awed by the knowledge of some of our  
**KNOW** contributors. I guess that I have assumed that  
**?** everyone else has all the information that I have  
available to me. Our last newsletter and the out of  
town letter from George reminded me what assuming does. The  
request for information about the code for our DOS and the  
comment that a schematic is unavailable triggered me. Ken  
Schoenberger has written a good disassembler and he printed out  
the code and added remarks as he analyzed it. It is 38 pages  
long with two columns per page. Rather than print out a copy to  
send in (I have nearly worn mine out and Ken's comments would be  
lost) I have started to key it in to MScript so that it can be  
printed out at 15 CPI with narrow spacing. My Christmas present  
was a Canon Bubble Jet Printer and it seems readable at this  
smaller type. It is labor intensive so this installment will  
cover the first third of the code. The code in the "forbidden  
area" was given to us and I have not verified it. I hope to do  
this before the last installment and I will report back later.

The second item, the cartridge and I/F schematic, was something  
I was curious about when I first got my Larken system. I had  
looked over the cartridge and had started to put it on paper. To  
verify that I had it right I built a unit on a discarded Zebra  
board. After one false start with one wiring error it worked.

So the cartridge schematic should be correct. I did not  
recognize the marking on one diode, so I merely recorded what  
was on it. I used a diode that looked like it and it worked.

I do have to apologize for not using a Timex to do the  
schematic, but I thought it would be clearer done on a Laser  
printer.

I have not done anything on the disk I/F. If anyone is  
seriously interested in the schematic for it I could work on it  
after I complete the disassembly of the cartridge.

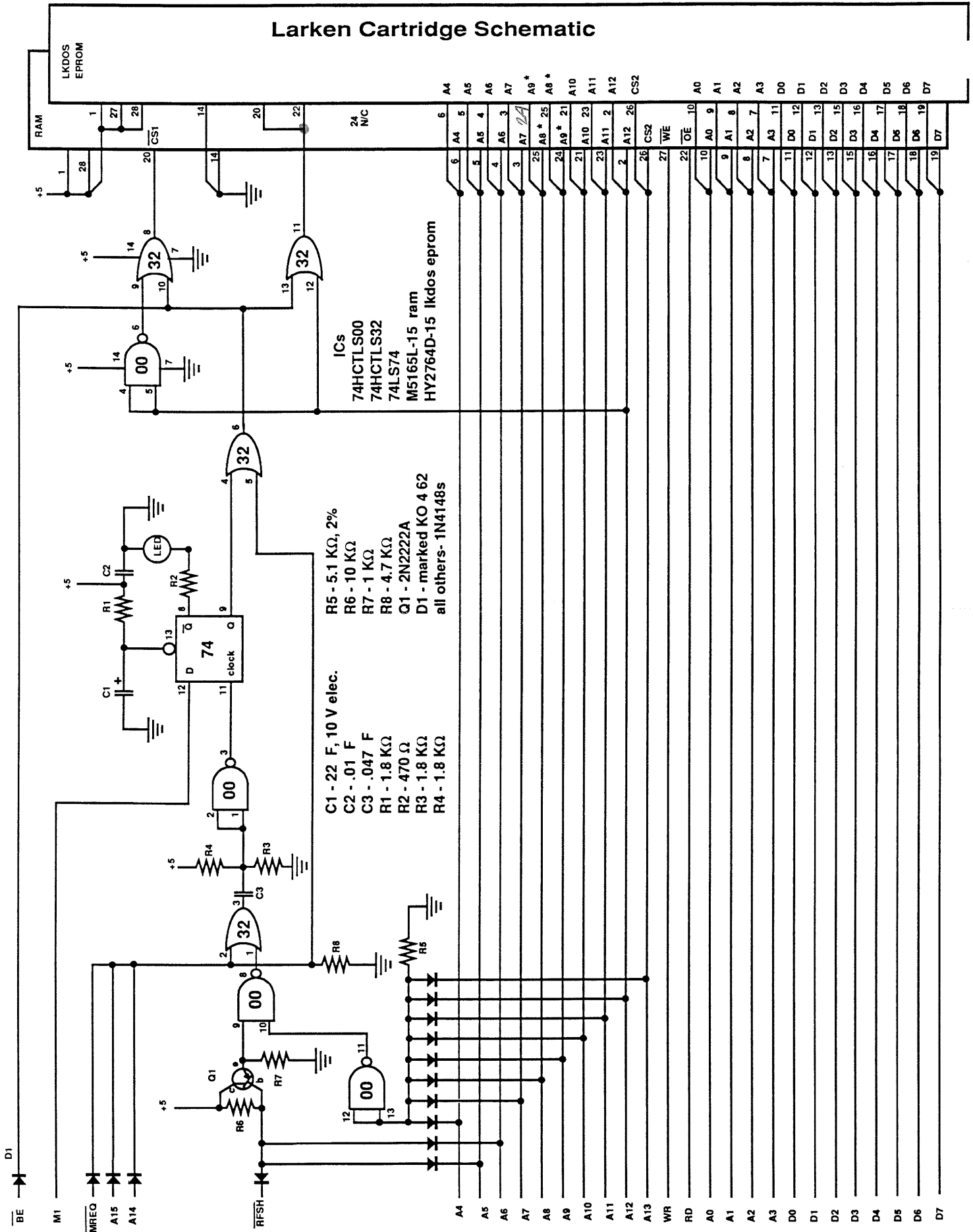
If any one knows of a m/c patch that would allow me to send the  
disassembly to memory instead of screen or printer, I would be  
interested in trying that rather than retyping the remaining  
pages.

My typing skills are far from perfect, so in case anyone is  
interested in verifying a particular piece of code here is how  
it was done:

1. Clear 39999
2. Load in TSDB at 60000
3. Key in a short basic routine to do a LKdos peek and poke to  
40000 + address
4. Set offset so that proper addresses show in print out  
(send disassembly to screen or)
5. Set margin for left column
6. set printer on in TSDB
7. disassemble until page is full
8. reset margin to print right column
9. disassemble until page is full
10. repeat 5 thru 9 for next page

Les Cottrell 108 River Heights Drive Cocoa, FL 32922-6630

# Larken Cartridge Schematic



## LARKEN CARTRIDGE DISASSEMBLY

name	Dec	Hex	Instr-Dec	Remarks (1)	name	Dec	Hex	Instr-Dec	Remarks
	0000	0000	DI		TRACK	0126	007E	JP 3571	;Restore to Trk0 then seek
	0001	0001	JP 752		NEXTTR	0129	0081	JP 3807	;Increment disk hd 1 trk
	0004	0004	LD C, H		INDR	0132	0084	JP 2307	;Ck dir for file (in pgm)
	0005	0005	NOP		MOVDR	0135	0087	JP 2392	;Move cell to diwka
	0006	0006	NOP		CMDCP	0138	008A	JP 2208	;Check command syntax
RST 8	0007	0007	NOP		ENDLN	0141	008D	JP 1013	;Move CHADD to end basic
	0008	0008	NOP		EVALU	0144	0090	JP 1026	;Evaluate numeric formula
	0009	0009	JP 210		NOFIL	0147	0093	JP 2127	;No file error
	0012	000C	NOP		WPROT	0150	0096	JP 2444	;Check for protect sticker
	0013	000D	NOP		ZERO	0153	0099	JP 2711	;Restore blks used by cell
	0014	000E	NOP		GTFIL	0156	009C	JP 2156	;Eval string,put in pgm
RST 16	0015	000F	NOP		ROMM	0159	009F	JP 1046	;Check for Spectrum ROM
	0016	0010	LD DE, 16		NEWET	0162	00A2	JP 2404	;Put new entry in dir
	0019	0013	LD (8192), DE		DECDP	0165	00A5	JP 1781	;Print templ in decimal
	0023	0017	LD DE, 98		TRANOK	0168	00A8	JP 3110	;Final routine for save
	0026	001A	PUSH DE		DOScp	0171	00AB	JP 1183	;Close disk channel
	0027	001B	JR 37		DOSER	0174	00AE	JP 1822	;Print error.HL holds msg
	0029	001D	NOP		CLRBF	0177	00B1	JP 1121	;Clear buffer
	0030	001E	NOP		ENCOD	0180	00B4	JP 1135	;Encode bufr w addresses
	0031	001F	NOP		VSERCH	0183	00B7	JP 2031	;Look for arrays
RST 32	0032	0020	LD DE, 32		JPOUT	0186	00BA	JP 65	;Exit cartridge
	0035	0023	JR 19		GROW	0189	00BD	JP 1763	;Insert space in program
	0037	0025	LD DE, (8192)		SHRNK	0192	00C0	JP 1746	;Delete space in program
	0041	0029	PUSH DE		OTERR	0195	00C3	JP 2320	;Cat data error
	0042	002A	JR 65	; gtout	LD#1	0198	00C6	JP 1254	;First half of User ld cmd
	0044	002C	NOP		LD#2	0201	00C9	JP 1635	;second half
	0045	002D	NOP		SV#1	0204	00CC	JP 2503	;First half User save comd
	0046	002E	NOP		SV#2	0207	00CF	JP 2578	;second half
	0047	002F	NOP			0210	00D2	LD HL, 85	
RST 48	0048	0030	JP 252			0213	00D5	LD DE, 23700	; membot + 2
	0051	0033	NOP			0216	00D8	LD BC, 10	
	0052	0034	NOP			0219	00DB	LDIR	
	0053	0035	NOP			0221	00DD	POP HL	
	0054	0036	NOP			0222	00DE	LD A, (HL)	; (95)=0
	0055	0037	NOP			0223	00DF	LD (23705), A	; error #
	0056	0038	RET			0226	00E2	JP 23700	
	0057	0039	PUSH AF		j	0229	00E5	POP AF	
	0058	003A	LD A, (110)			0230	00E6	POP HL	
	0061	003D	POP AF			0231	00E7	LD HL, 229	
	0062	003E	EI			0234	00EA	PUSH HL	
	0063	003F	SCF			0235	00EB	LD HL, 118	
	0064	0040	RET			0238	00EE	PUSH HL	
GTOUT	0065	0041	PUSH HL			0239	00EF	LD HL 8064	
	0066	0042	PUSH DE			0242	00F2	BIT 7, A	
	0067	0043	PUSH BC			0244	00F4	JR Z, 249	
	0068	0044	LD HL, 57			0246	00F6	LD HL, 3224	
	0071	0047	LD DE, 23700			0249	00F9	JP 65	; gtout
	0074	004A	LD BC, 10		48	0252	00FC	EX (SP), HL	
	0077	004D	LDIR			0253	00FD	PUSH AF	
	0079	004F	POP BC			0254	00FE	LD A, L	
	0080	0050	POP DE			0255	00FF	CP 102	; f
	0081	0051	POP HL			0257	0101	JP Z, 920	
	0082	0052	JP 23700			0260	0104	CP 104	; h
	0085	0055	LD A, (110)			0262	0106	JP Z, 279	
	0088	0058	EI			0265	0109	CP 106	; j
	0089	0059	RST 8ERR 1			0267	010B	JR Z, 229	
	0091	005B	NOP			0269	010D	CP 108	; l
	0092	005C	NOP			0271	010F	JP Z, 4405	
	0093	005D	NOP			0274	0112	CP 110	; n
	0094	005E	NOP			0276	0114	JP Z, 1070	
	0095	005F	NOP			0279	0117	LD A, I	
f.....	0096	0060	NOP			0281	0119	JP PE, 287	
o	0097	0061	NOP			0284	011C	XOR A	
r	0098	0062	DI			0285	011D	JR 289	
b	0099	0063	RET			0287	011F	LD A, 255	
i	0100	0064	DI			0289	0121	LD (22527), A	
d	0101	0065	RST 48			0292	0124	POP AF	
e	0102	0066	NOP			0293	0125	POP HL	
n	0103	0067	RST 48			0294	0126	LD (22525), SP	
	0104	0068	NOP			0298	012A	LD SP, 22521	
	0105	0069	RST 48			0301	012D	PUSH IY	
	0106	006A	DI			0303	012F	PUSH IX	
	0107	006B	RST 48			0305	0131	PUSH HL	
a	0108	006C	DI			0306	0132	PUSH DE	
r	0109	006D	RST 48			0307	0133	PUSH BC	
e	0110	006E	DI			0308	0134	PUSH AF	
a.....	0111	006F	XOR A			0309	0135	EXX	
	0112	0070	LD HL, (8200) ; lenth			0310	0136	PUSH HL	
	0115	0073	LD C, (HL)			0311	0137	PUSH DE	
	0116	0074	LD B, A			0312	0138	PUSH BC	
	0117	0075	JR 65			0313	0139	PUSH AF	
	0119	0077	NOP			0314	013A	LD (22523), SP	
SAVEBF	0120	0078	JP 3651	;Save buffer to disk		0318	013E	LD A, I	
LOADBF	0123	007B	JP 1084	;Load buffer from disk		0320	0140	LD (22522), A	

name	Dec	Hex	Instr-Dec	Remarks (2)	name	Dec	Hex	Instr-Dec	Remarks
	0323	0143	LD SP, 15000			0498	01F2	RRA	
	0326	0146	LD A, 1			0499	01F3	JR C, 505	
	0328	0148	LD (8194), A	; nmi flag		0501	01F5	LD A, 251	if NMI-F
	0331	014B	CALL 348	; music		0503	01F7	JR 534	
	0334	014E	IN A, 31	; kempston joy		0505	01F9	LD A, 247	1,2,3,4,5
	0336	0150	CALL 505	; keyboard input		0507	01FB	IN A, 254	
	0339	0153	CALL 547			0509	01FD	OR 224	1110 000
	0342	0156	CALL 348	; music		0511	01FF	CP 255	
MUSIC	0345	0159	JP 415			0513	0201	JR NZ, 538	1,2,3,4,5
	0348	015C	LD A, 7			0515	0203	LD A, 253	A S D F G
	0350	015E	OUT 245, A			0517	0205	IN A, 254	
	0352	0160	LD A, 56			0519	0207	OR 224	
	0354	0162	OUT 246, A			0521	0209	CP 255	
	0356	0164	LD A, 8			0523	020B	JR NZ, 477	A S D F G
	0358	0166	OUT 245, A			0525	020D	LD A, 191	N/L L K J H
	0360	0168	LD A, 15			0527	020F	IN A, 254	
	0362	016A	OUT 246, A			0529	0211	RRA	
	0364	016C	LD BC, 209			0530	0212	JR C, 505	L K J H
	0367	016F	CALL 390			0532	0214	LD A, 255	
	0370	0172	CALL 404	; delay		0534	0216	LD (8240), A	
	0373	0175	LD BC, 104			0537	0219	RET	
	0376	0178	CALL 390			0538	021A	LD B, 0	
	0379	017B	CALL 404	; delay		0540	021C	INC B	
	0382	017E	LD A, 8			0541	021D	RRA	
	0384	0180	OUT 245, A			0542	021E	JR C, 540	
	0386	0182	XOR A			0544	0220	LD A, B	A=1,2,3,4 or 5
	0387	0183	OUT 246, A			0545	0221	JR 534	
	0389	0185	RET			0547	0223	LD A, (8249)	; templ
	0390	0186	XOR A			0550	0226	CP 255	
	0391	0187	OUT 245, A			0552	0228	RET Z	
	0393	0189	LD A, C			0553	0229	CP 251	; F user defined NMI
	0394	018A	OUT 246, A			0555	022B	JR NZ, 561	
	0396	018C	LD A, 1			0557	022D	LD HL, (8214)	; user address
	0398	018E	OUT 245, A			0560	0230	JP (HL)	
	0400	0190	LD A, B			0561	0231	CP 252	; D autostart
	0401	0191	OUT 246, A			0563	0233	JP Z, 707	
	0403	0193	RET			0566	0236	CP 253	; S screen save
DELAY	0404	0194	LD D, 255			0568	0238	JR Z, 592	
	0406	0196	LD E, 255			0570	023A	CP 254	; A error stop
	0408	0198	DEC E			0572	023C	JR Z, 623	
	0409	0199	JR NZ, 408			0574	023E	LD A, 63	; ?
	0411	019B	DEC D			0576	0240	LD I, A	
	0412	019C	JR NZ, 406			0578	0242	IM 1	
	0414	019E	RET			0580	0244	RST 8 ERR 0	
	0415	019F	LD HL, 428			0582	0246	"SCREEN.CM"	<pointer @ 606
	0418	01A2	LD DE, 22241		Scrnsv	0592	0250	LD A, 78; N	
	0421	01A5	LD BC, 30			0594	0252	LD HL, 16384	
	0424	01A8	LDIR			0597	0255	LD (8198), HL	; start
	0426	01AA	JR 453			0600	0258	LD HL, 6912	
	0428	01AC	PUSH AF			0603	025B	LD (8200), HL	; length
	0429	01AD	LD A, (100)			0606	025E	LD HL, 582	
	0432	01B0	LD A, (22522)			0609	0261	JR 657	
	0435	01B3	LD I, A			0611	0263	"NMI-SZ.CM"	<pointer @ 654
	0437	01B5	CP 63; ?			0623	026F	LD HL, 49153	
	0439	01B7	JR Z, 443			0626	0272	LD DE, 16384	
	0441	01B9	IM 2						
	0443	01BB	LD A, (22527)			0629	0275	LD B, A	
	0446	01BE	CP 255			0630	0276	LD A, 254	
	0448	01C0	JRNZ 451			0632	0278	IN A, 254	
	0450	01C2	EI			0634	027A	BIT 0, A	
	0451	01C3	POP AF			0636	027C	JR NZ, 644	; not fig(caps)
	0452	01C4	RET			0638	027E	LD HL, 43046	
	0453	01C5	LD SP, (22523)			0641	0281	LD DE, 22490	
	0457	01C9	POP AF			0644	0284	LD (8200), HL	; length
	0458	01CA	POP BC			0647	0287	LD (8198), DE	; start
	0459	01CB	POP DE			0651	028B	LD A, B	
	0460	01CC	POP HL			0652	028C	ADD A, 48 ; 0	
	0461	01CD	EXX			0654	028E	LD HL, 611	
	0462	01CE	POP AF			0657	0291	LD DE, 8226	; progm
	0463	01CF	POP BC			0660	0294	LD BC, 10	
	0464	01D0	POP DE			0663	0297	LDIR	
	0465	01D1	POP HL			0665	0299	LD (8231), A	
	0466	01D2	POP IX			0668	029C	CALL 2444	; wprot
	0468	01D4	POP IY			0671	029F	CALL 2307	; indir
	0470	01D6	LD SP, (22525)			0674	02A2	LD A, (8224)	; errnu
	0474	01DA	JP 22241			0677	02A5	CP 10	
	0477	01DD	RRA			0679	02A7	CALL Z, 2404	; newet
	0478	01DE	JR C, 484			0682	02AA	CALL 2711	; zer0
	0480	01E0	LD A, 254	; if NMI-A		0685	02AD	CALL 3651	; savebf
	0482	01E2	JR 534			0688	02B0	LD HL, (8200)	; length
	0484	01E4	RRA			0691	02B3	LD (8241), HL	; temp2
	0485	01E5	JR C, 491			0694	02B6	LD HL, (8198)	; start
	0487	01E7	LD A, 253	; if NMI-S		0697	02B9	LD (8243), HL	; temp4
	0489	01E9	JR 534			0700	02BC	CALL 2842	
	0491	01EB	RRA			0703	02BF	CALL 2958	
	0492	01EC	JR C, 498			0706	02C2	RET	
	0494	01EE	LD A, 252	; if NMI-D					
	0496	01F0	JR 534						

name	Dec	Hex	Instr-Dec	Remarks (3)	name	Dec	Hex	Instr-Dec	Remarks
autost	0707	02C3	LD HL, 22490			0908	038C	LD HL, 50000	
	0710	02C6	LD (8198), HL ; start			0911	038F	LD DE, 15200	
	0713	02C9	LD HL, (23730) ; ramtop			0914	0392	LD BC, 768	
	0716	02CC	INC HL			0917	0395	LDIR	
	0717	02CD	INC HL			0919	0397	RET	
	0718	02CE	LD BC, 22490			0920	0398	POP AF	
	0721	02D1	SBC HL, BC			0921	0399	POP HL	
	0723	02D3	LD (8200), HL ; length			0922	039A	XOR A	
	0726	02D6	LD HL, 742			0923	039B	LD (8194), A ; nmi flag (basic)	
	0729	02D9	LD A, 84 ; T			0926	039E	LD (8248), A	
	0731	02DB	JR 657			0929	03A1	LD HL, (23645); ch add	
	0733	02DD	LD DE, 0			0932	03A4	LD A, 13	
	0736	02E0	LD SP, 45000			0934	03A6	CP (HL)	
	0739	02E3	CALL 19			0935	03A7	JP Z, 4402	
	0742	"AUTOSTART"	<pointer @ 726			0938	03AA	RST 32	; next char
	0752	02E0	XOR A			0939	03AB	LD HL, (23645); ch add	
	0753	02F1	OUT 255, A ; disp. enhan control			0942	03AE	LD A, (HL)	
	0755	02F3	OUT 244, A ; hor sel register			0943	03AF	CP 212 ; close #	
	0757	02F5	IM 1			0945	03B1	JP Z, 4400	
	0759	02F7	LD HL, 8192			0948	03B4	LD A, (8207)	
	0762	02FA	LD BC, 57343			0951	03B7	AND A	
	0765	02FD	LD (HL), 0			0952	03B8	JP NZ, 3552 ; err y - file open	
	0767	02FF	LD D, H			0955	03BB	LD A, (HL)	
	0768	0300	LD E, L			0956	03BC	CP 207 ; cat	
	0769	0301	INC DE			0958	03BE	JP Z, 3280	
	0770	0302	LDIR ; zeros memory			0961	03C1	CP 210 ; erase	
new	0772	0304	LD HL, 14944			0963	03C3	JP Z, 2108	
	0775	0307	LD (8218), HL			0966	03C6	CP 239 ; load	
	0778	030A	LD SP, 60000			0968	03C8	JP Z, 1251	
	0781	030D	LD HL, 891 ; move 891-990			0971	03CB	CP 248 ; save	
	0784	0310	LD DE, 30000 ; to 30000			0973	03CD	JP Z, 2500	
	0787	0313	LD BC, 100			0976	03D0	CP 245 ; print	
	0790	0316	LDIR			0978	03D2	CALL Z, 3266	
	0792	0318	CALL 30000			0981	03D5	CP 208 ; format	
	0795	031B	LD A, (8195) ; dvsel			0983	03D7	JP Z, 3962	
	0798	031E	AND A						
	0799	031F	JR NZ, 855			0986	03DA	CP 228 ; data	
	0801	0321	XOR A			0988	03DC	JP Z, 557	
	0802	0322	LD (8202), A ; hspd			0991	03DF	CP 230 ; new	
	0805	0325	LD A, 2			0993	03E1	JP Z, 772	
	0807	0327	LD (8195), A ; dvsel			0996	03E4	CP 209 ; move	
	0810	032A	LD A, 10			0998	03E6	JP Z, 4223	
	0812	032C	LD (16092), A ; prtr control			1001	03E9	CP 224 ; lprint	
	0815	032F	LD A, 63 ; ?			1003	03EB	JR NZ, 1010	
	0817	0331	LD (16090), A ; prtr control			1005	03ED	LD A, 3	
	0820	0334	LD HL, 8			1007	03EF	CALL 3268 ; lprint	
	0823	0337	LD (8214), HL ; user address			1010	03F2	JP 4400	
	0826	033A	IN A, 31 ; kempston input	Endoln		1013	03F5	LD HL, (23645); ch add	
	0828	033C	LD A, 191			1016	03F8	LD A, (HL)	
	0830	033E	IN A, 254 ; kbd in			1017	03F9	CP 13	
	0832	0340	LD B, A			1019	03FB	RET Z	
	0833	0341	BIT 2, A			1020	03FC	CP 58 ; :	
	0835	0343	JR NZ, 841 ; not "k"			1022	03FE	RET Z	
	0837	0345	LD A, 3			1023	03FF	RST 32 ; next char	
	0839	0347	OUT 244, A ; hor sel register			1024	0400	JR 1013	
	0841	0349	LD A, B (bank 0 & 1)	Evalu		1026	0402	LD HL, 7141 ; 2068	
	0842	034A	BIT 3, A			1029	0405	LD DE, 7298 ; spectrum	
	0844	034C	JR NZ, 851 ; not "j"			1032	0408	CALL 1046 ; roms	
	0846	034E	LD A, 128 ; drive 4 if "j"			1035	040B	LD HL, 7971 ; 2068	
	0848	0350	LD (8195), A ; dvsel			1038	040E	LD DE, 7833 ; spectrum	
	0851	0353	LD A, B			1041	0411	CALL 1046 ; roms	
	0852	0354	RRA			1044	0414	LD A, (HL)	
	0853	0355	JR C, 733 ; not "enter"			1045	0415	RET	
	0855	0357	XOR A		ROMS	1046	0416	PUSH AF	
	0856	0358	OUT 254, A ; border black			1047	0417	CALL 1063 ; 1st byte channels	
	0858	035A	LD HL, 742			1050	041A	CP 244	
	0861	035D	LD DE, 8226 ; progm			1052	041C	JR Z, 1059 ; > spectrum	
	0864	0360	LD BC, 10			1054	041E	POP AF ; !	
	0867	0363	LDIR			1055	041F	EX DE, HL ; 2068	
	0869	0365	LD SP, 14000			1056	0420	JP 19	
	0872	0368	CALL 2307 ; indir			1059	0423	POP AF	
	0875	036B	LD A, (8224) ; errnu			1060	0424	JP 19	
	0878	036E	CP 10		1st bc	1063	0427	PUSH HL	
	0880	0370	JP Z, 733			1064	0428	LD HL, (23631); chans	
	0883	0373	LD A, 1			1067	042B	LD A, (HL)	
	0885	0375	LD (8194), A ; nmi flag			1068	042C	POP HL	
	0888	0378	JP 1264			1069	042C	RET	
	0891	037B	LD A, (100) ; disable cartridge			1070	042E	CALL 3266 ; print	
	0894	037E	LD HL, 15616 ; char set			1073	0431	LD HL, 23611 ; flags	
	0897	0381	LD DE, 50000			1076	0434	RES 1, (HL) ; printing to scrn	
	0900	0384	LD BC, 768			1078	0436	INC HL	
	0903	0387	LDIR			1079	0437	RES 0, (HL) ; to upper screen	
	0905	0389	CALL 98 ; enable cartridge			1081	0439	JP 920	

name	Dec	Hex	Instr-Dec	Remarks (4)	name	Dec	Hex	Instr-Dec	Remarks
loadbf	1084	043C	XOR A			1276	04FC	INC HL	
	1085	043D	LD (8224), A	; errnu		1277	04FD	LD (8236), HL	; start
	1088	0440	LD A, (8195)	; drvsel		1280	0500	LD A, (HL)	
	1091	0443	CP 128			1281	0501	CP 249	
	1093	0445	JP Z, 4105			1283	0503	JP Z, 1596	
	1096	0448	CALL 3748			1286	0506	LD (8221), A	; track
	1099	044B	RET C			1289	0509	CALL 3571	; trac
	1100	044C	LD HL, 1951	; crc er		1292	050C	CALL 1084	; ldbuf
	1103	044F	CALL 1922	; print to		1295	050F	LD A, (8224)	; errnu
	1106	0452	LD A, (8221)	; track		1298	0512	CP 25	
	1109	0455	CALL 1781	; dec dp		1300	0514	JP Z, 2320	
	1112	0458	LD A, 13			1303	0517	LD A, (8194)	; nmi flag
	1114	045A	RST 16			1306	051A	CP 1	
	1115	045B	LD A, 25			1308	051C	JR Z, 1337	
	1117	045D	LD (8224), A	; errnu		1310	051E	CP 11	
	1120	0460	RET			1312	0520	RET Z	
cirbf	1121	0461	LD HL, 8304	; track buffer		1313	0521	LD HL, (8326)	
	1124	0464	LD (HL), 0			1316	0524	LD A, L	
	1126	0466	PUSH HL			1317	0525	CP 38	
	1127	0467	POP DE			1319	0527	JR Z, 1332	
	1128	0468	INC DE			1321	0529	CP 1	
	1129	0469	LD BC, 5120			1323	052B	JR NZ, 1358	
	1132	046C	LDIR			1325	052D	LD A, H	
	1134	046E	RET			1326	052E	CP 192	
endcbf	1135	046F	LD HL, 8304	; track buffer		1328	0530	JR NZ, 1358	
	1138	0472	LD (HL), 255			1330	0532	JR 1337	
	1140	0474	INC HL			1332	0534	LD A, H	
	1141	0475	LD A, (8221)	; curtrk		1333	0535	CP 168	
	1144	0478	LD (HL), A			1335	0537	JR NZ, 1358	
	1145	0479	INC HL			1337	0539	LD HL, (8316)	; destin
	1146	047A	LD B, 14			1340	053C	LD (8243), HL	; temp4
	1148	047C	LD DE, 8226	; progm		1343	053F	LD HL, (8326)	; totlen
	1151	047F	LD A, (DE)			1346	0542	LD (8241), HL	; temp2
	1152	0480	LD (HL), A			1349	0545	LD SP, 15000	
						1352	0548	CALL 1635	
	1153	0481	INC HL			1355	054B	JP 415	
	1154	0482	INC DE			1358	054E	LD HL, 8226	; progm
	1155	0483	DJNZ 1151			1361	0551	INC HL	
	1157	0485	LD HL, (23627); vars			1362	0552	LD A, 46	; .
	1160	0488	LD DE, (23635); prog			1364	0554	CP (HL)	; is it extenstion?
	1164	048C	OR A			1365	0555	JR NZ, 1361	; no, check next ltr
	1165	048D	SBC HL, DE			1367	0557	INC HL	; look at first ltr
	1167	048F	LD (8324), HL	; V offset		1368	0558	LD A, (HL)	
	1170	0492	LD HL, (23662); oldppc			1369	0559	CP 65	; A
	1173	0495	LD (8321), HL	; linenu		1371	055B	JR NZ, 1427	; not array
	1176	0498	LD HL, (8196)	; savelen	array	1373	055D	CALL 2623	
	1179	049B	LD (8326), HL	; totlen		1376	0560	LD A, (8248)	
	1182	049E	RET			1379	0563	BIT 7, A	
DOSOP	1183	049F	LD A, (8240)	; templ		1381	0565	JR NZ, 1394	
	1186	04A2	ADD A, A			1383	0567	LD HL, (8243)	; temp4
	1187	04A3	LD HL, 23574	; strms+6		1386	056A	LD BC, (8241)	; temp2
	1190	04A6	LD C, A			1390	056E	INC BC	
	1191	04A7	LD B, 0			1391	056F	CALL 1746	; shrink
	1193	04A9	ADD HL, BC			1394	0572	LD BC, (8326)	; totlen
	1194	04AA	LD (HL), 18			1398	0576	LD HL, (23627); vars	
	1196	04AC	LD HL, (23631); chans			1401	0579	PUSH HL	
	1199	04AF	LD BC, 17			1402	057A	PUSH BC	
	1202	04B2	ADD HL, BC			1403	057B	CALL 1763	; grow
	1203	04B3	LD BC, 108			1406	057E	POP HL	
	1206	04B6	LD (HL), C			1407	057F	LD (8241), HL	; temp2
	1207	04B7	INC HL			1410	0582	POP HL	
	1208	04B8	LD (HL), B			1411	0583	LD (8243), HL	; temp4
	1209	04B9	JP 1596			1414	0586	CALL 1635	
DRVO	1212	04BC	XOR A			1417	0589	LD A, (23662)	; oldppc
	1213	04BD	LD (8221), A	; curtrk		1420	058C	LD HL, (23627); vars	
	1216	04C0	CALL 3571	; trac		1423	058F	LD (HL), A	
	1219	04C3	RET			1424	0590	JP 1596	
	1220	04C4	"No File" >pointer @ 1242		noarry	1427	0593	CP 66	; B
	1228	04CC	LD HL, 23728			1429	0595	JR NZ, 1477	; not basic
	1231	04CF	LD A, (HL)			1431	0597	LD DE, (23635); prog	
	1232	04D0	CP 100	; d		1435	0598	LD HL, (23641); eline	
	1234	04D2	JP NZ, 2127	; T file not found		1438	059E	DEC HL	
	1237	04D5	LD (HL), 101	; e		1439	059F	OR A	
	1239	04D7	CALL 3266	; print		1440	05A0	SUBC HL, DE	
	1242	04DA	LD HL, 1220	; no file		1442	05A2	PUSH HL	
	1245	04DD	CALL 1922	; print to		1443	05A3	POP BC	
	1248	04E0	JP 1596			1444	05A4	EX DE, HL	
LOAD	1251	04E3	CALL 2208	; cmdck ld#1		1445	05A5	CALL 1746	; shrink
Lsubr	1254	04E6	CALL 2307	; indir		1448	05A8	LD HL, (23635); prog	
	1257	04E9	LD A, (8224)	; errnu		1451	05AB	LD (23627), HL; vars	
	1260	04EC	CP 10			1454	05AE	PUSH HL	
	1262	04EE	JR Z, 1228			1455	05AF	LD BC, (8326)	; totlen
	1264	04F0	CALL 2392	; movdr		1459	05B3	PUSH BC	
	1267	04F3	LD HL, 8250	; direction		1460	05B4	DEC BC	
	1270	04F6	INC HL			1461	05B5	CALL 1763	; grow
	1271	04F7	LD A, 253			1464	05B8	POP HL	
	1273	04F9	CP (HL)			1465	05B9	LD (8241), HL	; temp2
	1274	04FA	JR NZ, 1270			1468	05BC	POP HL	

cont. next issue - ed.



# PRINTING DATABASES

by Peter Hale

Computers are nice for storing data, but often it is tedious to recover that data in an economical and useful format. This is particularly true of printed hardcopy.

Those of us raised on print medium are more comfortable with text on paper, and certainly there are few who are comfortable taking the computer into the bathroom. Perhaps it will be different for the children.

But it can be a real waste of paper to dump an entire database if a field or variable of a particular record has no data or if the data field is of less than maximum length.

The following briefly summarizes programming techniques for printing data in an economical fashion. The examples use Archive procedures, but it is no trick to apply the methods to printing out data which has been stored in dimensioned arrays in SuperBASIC.

In the example we wish to print data in a file of records with three fields: A\$, B\$ and C\$. For this illustration assume that the printed text is to be a maximum of sixty (60) characters per line and that the fields (variables) A\$ and B\$ are each set to have a maximum of sixty characters, but that C\$ can hold up to eighty (80) characters.

First, it is necessary to write the printout procedure called **print\_file**.

```
proc print_file
let z=0:rem initiates line counter variable, setting it to zero
while not eof()
  lprint : let z=z+1
  print_record
  if z>59: lprint chr(0)+chr(26): let z=0: endif:rem performs a form feed when 59
lines have been printed and resets the line counter
endwhile
lprint chr(0)+chr(26): spoolon screen :rem sends lprint command to the screen
endproc
```

The counter (z) keeps track of the number of lines that are printed. Each time a record is printed the counter is tested for its value. If it is greater than 59, it performs a form feed [lprint chr(0)+chr(26)] so that there is a margin at the bottom of the page. The value can of course be changed for specific paper sizes.

Within the while loop, which terminates when there are no more records to print, there are two instructions.

**lprint : let z=z+1** puts a blank line to separate the printed output of each record. Since the paper advances a line, the counter is incremented by one.

**print\_record** is the procedure that actually causes the data to be printed, but if there is no data in the field, the paper does not advance and the line counter is not incremented.

```
proc print_record
  if A$<>"": lprint A$: let z=z+1: endif
  if B$<>"": lprint B$: let z=z+1: endif
  if C$<>""
    if len C$<61: lprint C$: let z=z+1
    else : lprint C$ (to 60): lprint C$ (61 to ): let z=z+2: endif
```

```

endif
endproc

```

The above is a record printout format in its simplest form. Additional blank lines, common text, tabs, independent variables, and numerals could be inserted as desired - even printer codes to make part of a record in condensed type. Note that because of the test for a non-empty field, only lines with data will be printed.

Finally, in order to avoid using a printer, especially when testing the code for accuracy, write one more procedure.

```

proc output_mode
  print at 0,0;"Output to Printer or Screen (p/s) ";
  input z$
  if instr("pP",z$): spooloff : endif
  if instr("sS",z$): spoolon screen : endif
  if not instr("sSpP",z$):output_mode: endif
  cls :print_file
endproc

```

Although there are more elegant ways to write this procedure, it is so written to simplify understanding.

Press p or P and the spooloff command sends all lprint instructions to the printer. The instr() function tests for either upper or lower case. Similarly, spoolon screen sends all lprint instructions to the screen.

The final instr() forces the choice of either p or s; otherwise the procedure is called again.

Only then does the screen clear and is data printed.

For those considering adapting the procedures for SuperBASIC, spooloff and spoolon screen may be considered the equivalent of opening a channel to either ser or scr respectively.

## QL HISTORY

Elsewhere in this issue I tell you about a little database programme I have placed in the TorQLib Library. This program is called QUANDEX, and is an INDEX to QUANTA.

In the process of entering all the data into QUANDEX, I read QUANTA from the very first issue to the latest, not once, but I think four times. Plus other times looking for a reference or information on something or other, and I came to one conclusion after it was all done. If you want the early history of the QL then get the first Volume of QUANTA.

In the first twelve issues of QUANTA there is a whole host of data and information about the many people and their experiences, both before they got their first QL and what happened to them afterwards. (the users and the QL itself)

Talking about QUANTA, their present membership stands at 1680 with 1421 in the UK and 259 Overseas.

This is a higher membership than five years ago.

Not bad for an 'orphan' with NO FUTURE!

HHH

930126

**Make the Tasman 'B' CPI  
Work With the LarKen DS-400**  
by Larry Kenny and Bob Swoger

It was brought to my attention, by George, that the fix to use the TASMANTM 'B' CPI with the LarKen DS-400 disk interface system for the TS2068 was not widely known. I believe the TASMANTM 'B' CPI when modified, is the only TASMANTM CPI that will work in the system. I am presently using one in my LarKen system.

Here is the fix for the Tasman 'B' CPI from Larry Kenny himself. The problem is not really a port conflict. Instead, the problem is that the Tasman 'B' CPI is not completely decoded. The Tasman 'B' has an input port of 191 but A7 is not being looked at by the CPI to come to this conclusion! If the mailman only looked at the first two numbers of an address and gave me all mail that began with '61', my address being '613', I would wind up getting a lot of wrong mail. That is the Tasman problem.

Larry favored the AERCO CPI because it completely decodes the address bus, but he made provisions for Tasman 'B', A & J and others if they were modified. I like the Tasman 'B' because it can send all bytes to the printer from 0 to 255 and the AERCO can't. So I have modified my Tasman 'B' CPI for LarKen compatibility to run my Christmas Return Label program. It should be noted that this fix will not work for the Tasman 'A' or Tasman 'C'.

To make the Tasman 'B' CPI work with the LarKen disk System, acquire a 74LS04 quad NAND and some small gauge insulated hook-up wire. Open the Tasman 'B' CPI by first carefully peeling back the plastic label away from the screws. (If you pick up the ends carefully with an X-ACTO knife, the label will press back over the screws when you are done without even a wrinkle.)

Remove the four screws that hold the case together and open the case. Examine the PC board to be certain that you have a 'B' version Tasman CPI. It is a 'B' if it is labeled 'VERSION B'.

Next, make the trace cut of A6 on the underside of the PC board close to board edge connector with the X-ACTO knife. Now follow the rest of the instructions Larry has given us on the drawing. When you are finished, carefully check all connections against Larry's drawing. I didn't and had to go back in to fix my problem. Finally, close the case and press the plastic label back into place.

Next, follow the instructions in your LKDOS manual to select the TASMANTM printer driver rather than the AERCO.

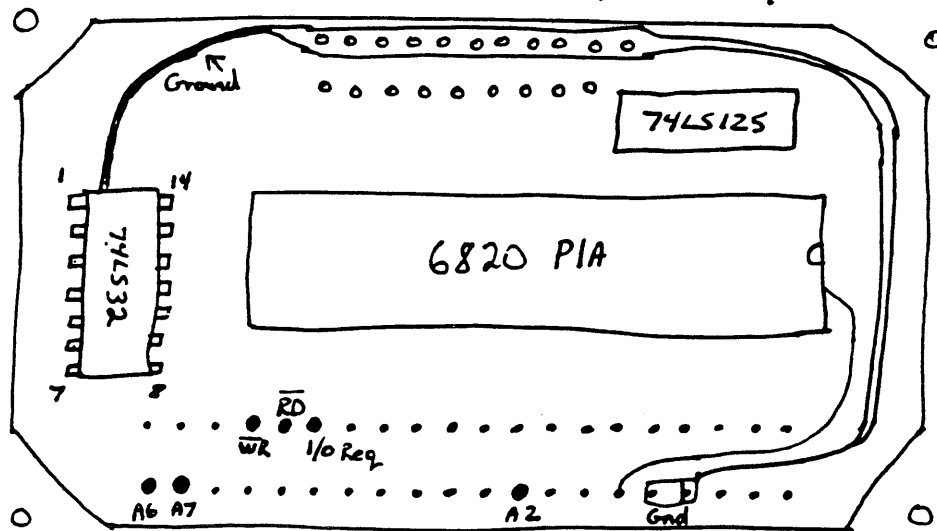
As for the port addresses of the LarKen system, I don't know them, but here are the CPI addresses from 'The Best of SUM', the newsletter-turned-magazine of the Gainesville Sinclair Users Group by Joe Williamson and Richard Cravy:

	PORT	
Type:	IN	OUT
AERCO	127	127
Tasman 'A'	63	123
Tasman 'B'	191	123
Tasman 'C'	251	123

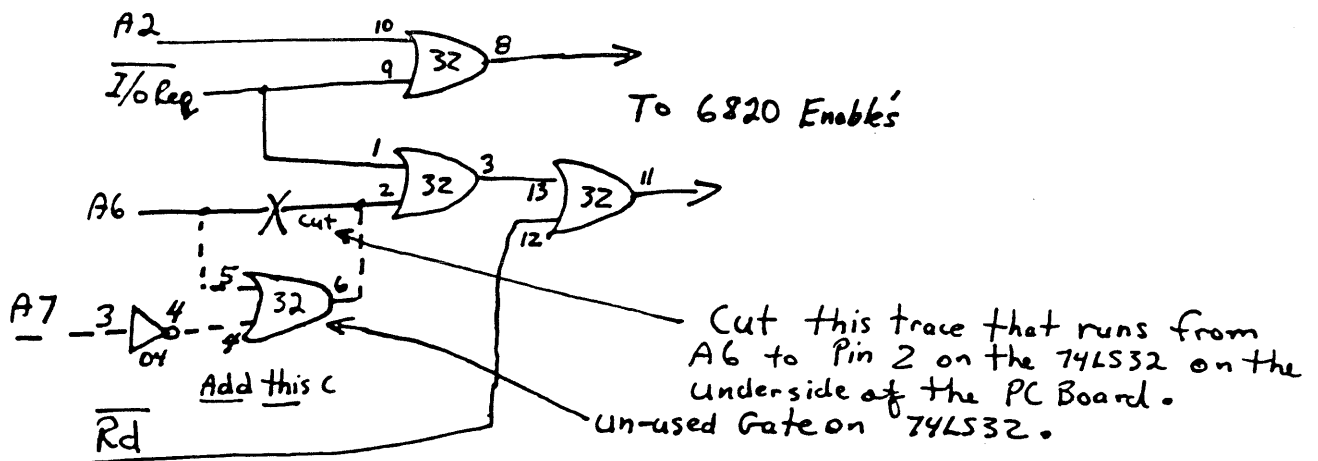
Bob Swoger  
708-576-8068

# Decoding the Tasman B+C for use with the Larken Disk IF

## Tasman B+C Component Layout



Tasman B' modification : Parts needed - 74LS04  
- fine wire



- Bend all of the pins on the 74LS04 up, (except pins 4, 7 and 14)



and stack it on top of the LS32; Solder pins 4, 7 and 14 to pins 4, 7 and 14 of the LS32

- Connect A6 on connector to pin 5 on the 74LS32 with a wire.
- Connect A7 on the connector to pin 3 on the 74LS04 with wire.
- Connect pin 2 on 74LS32 to pin 6 on 74LS32.

It has taken me awhile, but I finally completed a working RS-232 interface. The design is based, in part, on the Z-SI/O board that is familiar to most 2068 owners. I simplified the design somewhat by using a 74LS4060 oscillator/divider chip to generate the baud rates and a MAX232 chip to convert the data output from ttl to serial, replacing 5 chips and a voltage regulator. The interface was designed for communication between the ZX81 or 2068 and another computer. At rates up to 4800 baud handshaking between machines is not necessary to ensure a successful transfer and therefore was not implemented. That being the case, this interface may not be suitable for connection to a serial printer or modem though it may seem to work. If enough interest is shown, I can change the design to provide full handshaking or change the serial standard from RS232 which will work over a distance of about 50 ft to RS422 which can transmit serial data over much longer distances.

### CONSTRUCTION

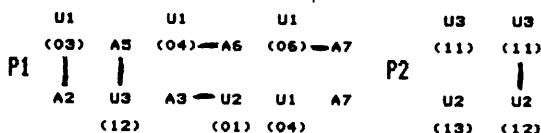
As with all the projects I have presented in the past, the artwork is meant to be photocopied onto TEC-200 mylar or equivalent and transferred to a clean circuit board. There are 21 wire jumpers on the board and these should be installed before the sockets. Most of the capacitors are electrolytic and can only be installed one way - match the + sign. Install the crystal on it's side as shown on the component overlay using a piece of double-sided tape to anchor it in place.

There are four areas on the board:

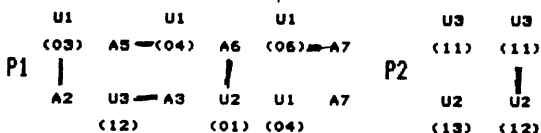
- I/O mapping (P1, P2) - Larken, JLO, Aerco
- Baud Rate (P3) - 300, 1200, 2400, 4800, 9600
- DTE/DCE Configuration (P4) - null modem

Use wire jumpers for permanent configuration, or pin strips and shorting blocks (recommended for P3) to allow you to change the settings when ever you want. For the 2068 this board can be adapted to suit the Larken, JLO, and Aerco systems by moving shorting blocks as shown below. For the ZX81, use the Aerco setup which matches the 2050 modem port addresses.

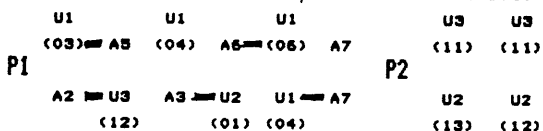
Larken : Control/Status 191, Data 159



JLO : Control/status 223, Data 215



Aerco : Control/Status 119, Data 115 (ZX81 2050 modem)



One shorting block is used on P3 to select the baud rate starting from the left: 300, 1200, 2400, 4800.

The purpose for P4 is to switch the transmit and receive pins on the subd25 plug to match the device that you will connect to. To communicate with another computer, use two

shorting blocks on P4 to make a DTE null modem connection, eliminating the need to convert or purchase a null modem.

Before you install any of the chips, plug the board on the back of your computer, turn it on and confirm that the system runs. Check that +5v appears at pins 16 on U1,U2,U4 and U6, and at pin 26 of U3. If everything checks out, you can proceed with loading the chips.

### TESTING

At this time we are presupposing that you have access to one of the communication packages available for your computer, MAXCOM or ZXTerm-80 for example. For both the ZX81 and 2068 no changes to the software are required. With P3 set to 1200, the 8251 will divide the clock by 64 to give 300 baud for the ZX81. For the 2068, the 8251 will divide the clock by 16 or 64 to give 300 or 1200 baud depending on your selection of UART setup. Connect a temporary jumper between pins 2 (transmit) and 3 (receive) of the Subd25 socket. Load your software, go to terminal mode, and punch some keys. If everything is working you should see characters print to the screen as you key them in. If nothing happens, there may be a problem with the baud rate or mapping. Make sure that you have shorted the correct pins. If the board appears to work, remove the jumper and connect it to another computer with the Null-Modem settings and continue your testing.

Articles covering computer-computer data transfers were presented in past issues of this newsletter. Discussions with Larry Kenny indicate that MAXCOM can be upgraded to faster baud rates if the print-to-screen routine is disabled during transfers - we are investigating. For the ZX81, Vince Lee, of VSUG, wrote several articles in ZX-APPEAL using an adapted 2050 modem/serial board and his routines should work with this board.

Anyone who requires more information or would like to correspond regarding this article or past ones can contact me in writing through the club.

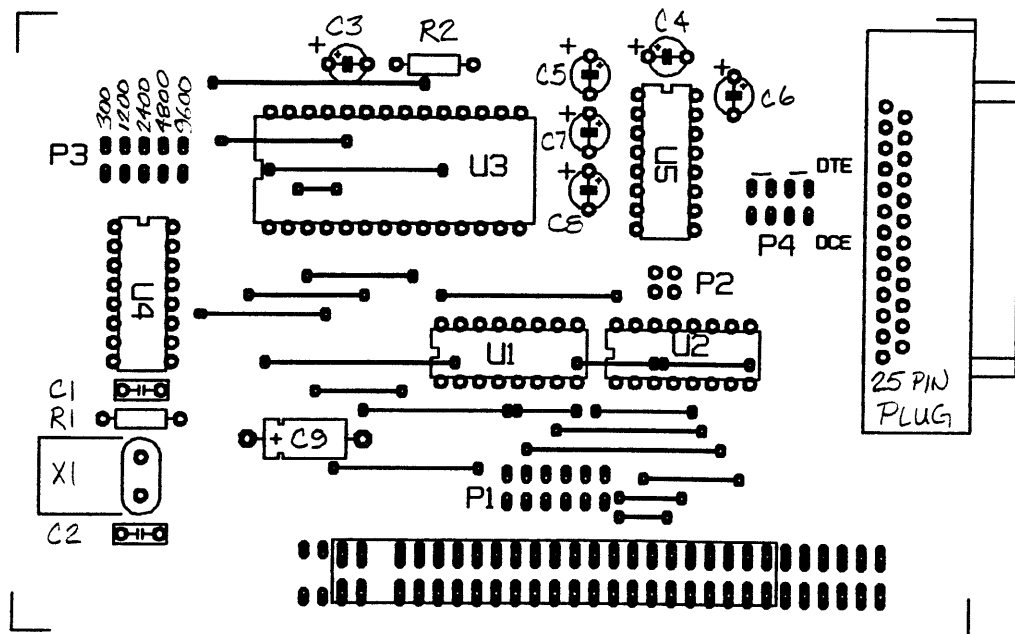
### REFERENCES

- Z-SI/O RS-232C Serial Interface Card ..... Clifford & Associates
- An 8031 In-circuit Emulator, George DinWiddie, BYTE Magazine, July 1986
- The ZX/TS Serial Link, V. Lee, ZX-Appeal, Summer 1990

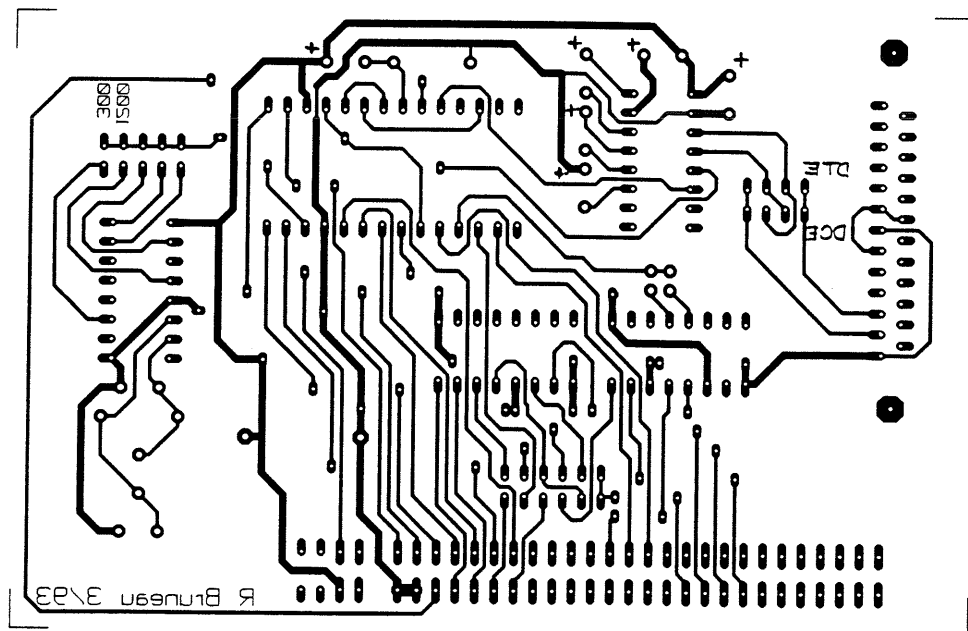
### COMPONENT LIST

U1	74LS138	DIL-16
U2	74LS138	DIL-16
U3	8251	DIL-28
U4	74HC4060	DIL-16
U5	MAX232	DIL-16
R1	15m	1/4-watt
R2	1k	1/4-watt
C1,C2	20pF	Ceramic
C3	2.2uF/16v	Tantalum
C4,C5,C6,C7,C8	22uF/16v	Electrolytic
C9	10uF/16v	Electrolytic
X1	9.8403Mhz	Crystal HC18
P1	I/O-a	SIL-2X06 (2 rows of 6 pins)
P2	I/O-b	SIL-2X02 (2 rows of 2 pins)
P3	BAUD	SIL-2X05 (2 rows of 5 pins)
P4	DTE/DCE	SIL-2X04 (2 rows of 4 pins)
P1	PLUG	SUBD25 (male)

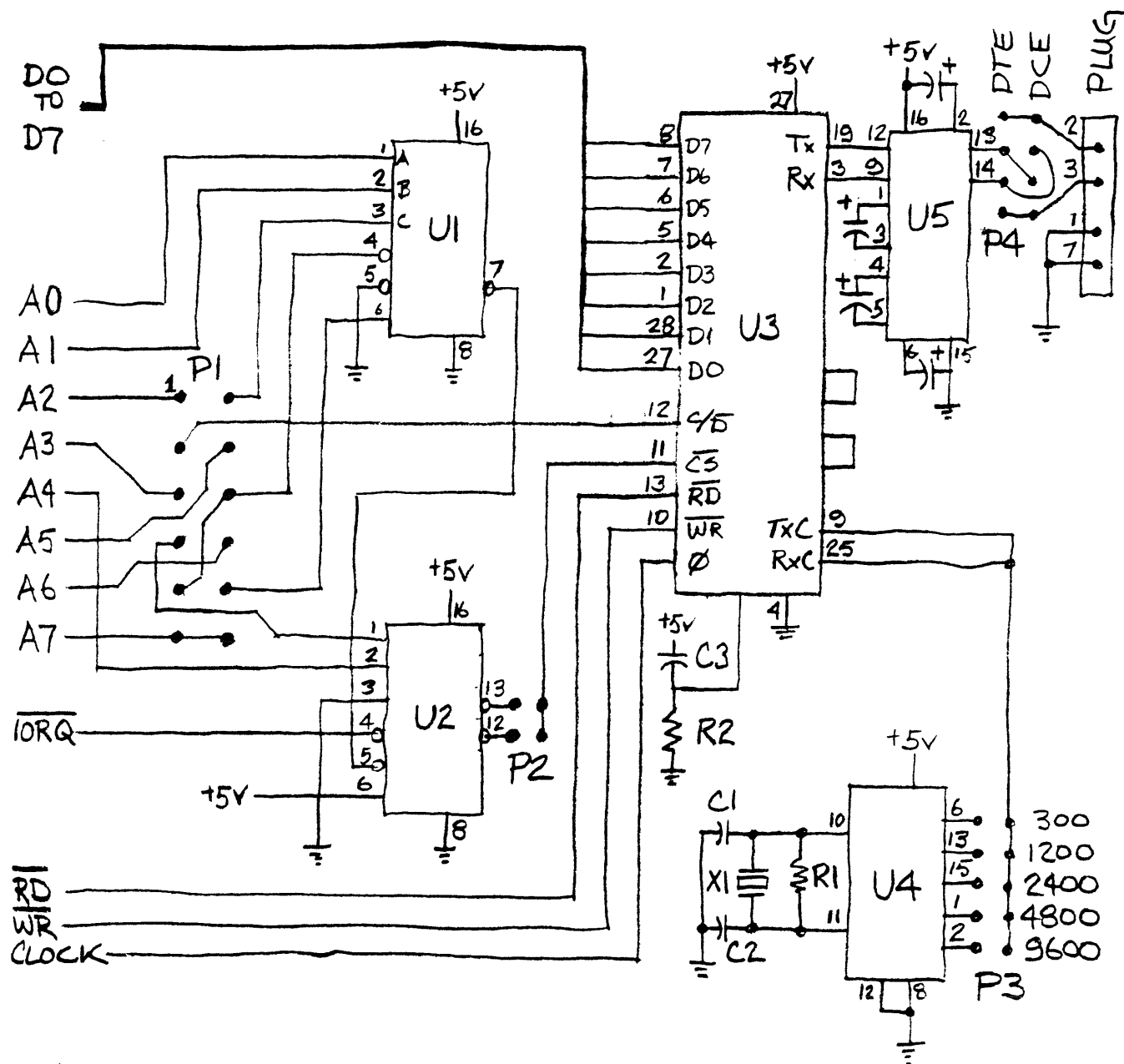
Miscellaneous: Edge connector and extender, fine copper wire, 16 pin sockets, 28 pin socket



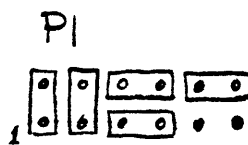
COMPONENT LAYOUT



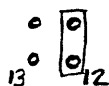
PCB LAYOUT



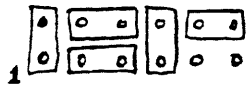
I/O  
LARKEN



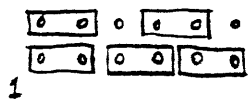
P2



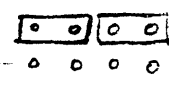
JLO



AERCO

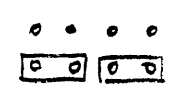


DTE



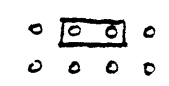
DTE  
DCE

DCE



DTE  
DCE

TEST



DTE  
DCE

RS-232 CIRCUIT DIAGRAM

# Text87 And WordStar

Text87 Plus4 is an excellent word processor but will it "leave WordStar in the dust," as one advertisement put it? I've used WordStar for several years and I thought answering this question might be interesting.

WordStar was the IBM standard for several years but has lost its standing to WordPerfect -- which, in turn, is now threatened by the Window programs. WordStar is still used by millions worldwide. The version I own is 5.5, which is two releases back from the current version, 7.0. The newer versions are basically the same in concept and speed. I'm using version 3.1 of Text87 Plus4 (referred to as Text87 from this point).

The computers are comparable, neither is state of the art. My QL is a standard JSU version with a 512K Expanderam and a Delta Disk I/F. The IBM XT is a 12 MHZ "Turbo" version with an older 40 MEG hard drive and 640K of usable memory. When speeds were compared I used an identical document (nearly 41,000 words, 247K) that I obtained by copying one of my stories to itself over and over. This document is about the size limit on my QL. I can still use the Help feature and the Spell Checker (not at the same time) when this document is loaded. It should be noted when testing I used the Fountext88 version of Text87 with just the default font loaded. More fonts would have bitten into the text size.

Sometimes numbers are meaningless when presented without a point of reference. A full size "hysterical" novel is about 90,000 words. A Western or Science Fiction novel is about 60,000 words. So 40,000 words in one document is impressive. I would imagine 80,000 words would be possible with the Trump Card and who knows how many with the Gold Card. I would be interested in seeing numbers from users of these interfaces.

I moved this document over to the IBM using the same method I outlined in my last letter. This time I used 9600 baud, 40,000 words took about 10 minutes to transfer via the serial ports. I had never seen a 9600 baud transfer so I was impressed by how quickly the blocks flashed by.

Finally to the comparisons. I've chosen categories that are important to me. Others would probably choose differently. I present them in more or less random order.

MANUAL. WordStar wins hands down here. It has one of the most thorough, well-organized manuals I've seen with any program. Text87's manual is good when compared to many other QL manuals, but out of its league here.

MAIL MERGE. Again, WordStar wins hands down. This is one area that definately disappointed me in Text87. XCHANGE's Mail Merge features compare much more closely to WordStar's.



**SPELL CHECKER.** Close here. Since I can't use the BIGGER dictionary I'm stuck with "English" spellings, which can be annoying. WordStar has a much bigger dictionary (then the one I can use), a thesaurus and short definitions, but its not as flexible. I really like the way Text87 uses the <SHIFT> <TAB> combination to fall back to wider selection of words. In one of my stories I misspelled gremlin as "gremblin." Text87 found the right word, WordStar could not. I intend to make an American version of Text87's spelling dictionary--"when I get the time."

**PAGE PREVIEW.** This is also close. WordStar uses a WYSIWYG representation of the typestyle and allows you to zoom in and out for a closer view. It's impressive. But there is a definite speed disadvantage. Text87's preview does what a preview should and is very quick. Also, Text87 uses WYSIWYG in its edit mode, WordStar (for MS-DOS) does not.

**SPEED.** Text87 wins hands down. Using my 40,000 word document I made some tests. Text87 plus4 displays the number of words at all times. To find the number with WordStar you have to use <CTRL> K and ?. It took WordStar 1:02 minutes to do this. (It came up with 40,877 words as opposed to Text87's 40,784. I've seen differences like this before on other word processors, so it didn't surprise me.) To go to the the bottom from the top in WordStar took 23 seconds in single column, 38 seconds after I changed the layout to three column format. From bottom to top took 33 and 48 seconds. Text87 took under 1.5 seconds from top to bottom and less than a second from bottom to top. This is basically just the time it takes to redraw the screen. Replacing "the" with "zzz" took WordStar over 45 minutes! Text87 took 1:58 minutes to do this. It replaced 3,354 occurrences. To change from one column to three throughout the document took Text87 1:08 minutes, WordStar did this in 3:33. To change typestyles and reformat the text took WordStar 3:15, Text87 did this in 1:11 minutes.

**LARGE DOCUMENTS.** This is close for only one reason. Text87's document size is limited by memory. It's doubtful that you will reach this limit. WordStar, since it feeds bits of the document in at a time, can handle any size of document (in theory). Several times, during Searches and Spell Checking, it crashed when dealing with the 40,000 word document. For most purposes this is not an important consideration, however.

**PRINTER DRIVERS.** Text87 wins easily here, with only one proviso, WordStar specifically supports many more printers. With the 2488 driver I can use any typestyle available with my Epson LQ printer and mix them together in any way I like. With WordStar, to use double-high, for example, I have to enter in special codes and make sure I change the line highth dot commands. Don't get me wrong, WordStar also has good printer drivers, but they are out of their league when compared to Text87's.

**FORMATTING.** Text87 wins here. After I got use to its method of handling columns I was amazed at how much can be done with the program. WordStar

allows multiple columns but once you start them, they have to go to the end of the page before you return to single column. As far as I can tell there are very few limits with Text87. Very impressive.

GRAPHICS. ? WordStar has the ability to use graphics in its files, but it requires the use of a companion program -- INSERT. Once there the picture can be previewed with WordStar's Advanced Page Preview feature. Since I don't have FOUNDED89 I can't compare Text87's graphic capability, but I would imagine it's not too straight forward. If my guess is right neither WordStar or Text87 is particularly strong here.

ONLINE HELP. Neither is as good as QUILL. Text87 has interactive help available, but usually you have to back out of the specific sub-command you are using to get a general area help message. WordStar will give vague instructions, but you have to know where to look. Both are adequate, but Quill spoiled me.

EXPORTING ASCII TEXT. Text87 wins here easily. WordStar works much the same as Quill, using the printer driver to write an ASCII file. You have to be careful about page length, form feeds, etc. Text87 (and the XCHANGE version of Quill) are much more direct. Text87's ability to put Line Feeds only at the end of the paragraphs is something I've never seen in any word processor. A very nice surprise. I should mention that WordStar comes with a companion program to convert files to other formats. In version 6.0 (and, I assume, 7.0) it specifically supports ASCII conversions, but not in version 5.5. Even so, this is an extra step not needed with Text87.

MULTIPLE DOCUMENTS. No contest. Text87 can open up to eight documents, WordStar only 2.

EASE OF USE. Text87 would probably have the edge here. It's hard for me to be objective because I've been using WordStar for so long. Once you get past the ATTACH command (difficult for me at least) you can do a lot of things easily using Text87. In some ways WordStar's dot commands seem more direct, however.

I'm sure I've missed some important points. WordStar has other features that Text87 does not support. Among these are an index feature, a footnote feature and enhancements in many of its other commands (Search, for example, gives many more options -- allowing you to specify full words only, etc.)

Although I won't chuck WordStar, most of my word processing will again be done on the QL. Text87 can do about anything I need done and do it more quickly than WordStar.

Ron Blizzard -- P.O. Box 54 -- Weiser, ID 83672 U.S.A.

*This document was printed out with a 9-pin, Seikosha SP-12004S printer, using Fountext88.*

# Q U A N T A I N D E X

by Hugh Howie

For some time I have been working on an Index for the QUANTA magazine.

What started this was that I often wanted to find an article in QUANTA, and I had to go through all the front page indexes, only to find that the article or subject was not mentioned in the index.

The next step was to go through all the issues in the hope I would find the subject soon; usually it turned out to be later, and I was usually sidetracked into something else or even worse, gave up on the search. This QUANDEX is the result of my many frustrations.

I started out with an idea, roughed out a program to sort of do the job for me. As I got deeper into it, I found I had to flesh out the operation quite a bit, both in data content and also program use.

QUANDEX can still be improved on as a program, and made more attractive to the user. A lot of material could still be included, such as adverts for various soft and hardware available. But after reading QUANTA about four times I sort of got tired of the whole thing.

As it is, the program works from a menu at the bottom of the screen, where the user is given the option of ADVANCING\_10 records or GOBACK\_10 records. NEXT or BACK, or ONE (the first record), LAST, or FIND & CONTINUE. DUMP which dumps the record on display to an attached printer. (example below) There is an option called

PRINT which will print the TITLES ONLY of each record VERY slowly to the printer.

Each command is activated by pressing the first letter of a command in the menu + [ENTER]

Each command from the menu is high lighted as you use it just so that you can have something happen on the screen.

Under the menu there is an area where you are reminded as to what is going on.

Should you get into a fix, then by typing START, the files are closed and you are put back to the start of the program. This could be useful if you come across a bug. I don't think there are any, but then that is in the realm of famous last words.

Archive users will have no problems.

NON Archive users should have very few if any problems. The whole system is as simple as I can make it. Perhaps I will add some enhancements at a later date, but in the meantime this is it!

This program has been placed in the TorQLib Library on the TorQLib Library disk, as that is where there is a lot of space available.

Keep this up-to-date on your own. I will keep the Library copy up-to-date.

930126

=====

This is a sample from "D"ump

~~~~~

Comments Vol Issue Page Author

QL 2/2

|                                               |   |    |       |              |
|-----------------------------------------------|---|----|-------|--------------|
| Notes and history of, plus hardware variation | 8 | 5  | 20-22 | Briggs .Dclo |
| Hardware improvements for                     | 8 | 5  | 23    | Mitchell .S  |
| Future of, & How good, & chit chat            | 9 | 1  | 27-34 | Nash         |
| RESPR - what it is & how it works             | 9 | 9  | 1-8   | Lenerz .W    |
| Future of, and notes on present               | 9 | 11 | 7-8   | Fox .G       |
| QL to BEEB file transfer                      | 3 | 5  | 6-9   | Jones .D     |
| Bare necessities ( or who need more ?)        | 8 | 11 | 25    | Hill .A      |
| Used in School                                | 9 | 3  | 7-11  | Parkin .J    |

TS 2068 - COPYING A SCREEN\$ TO THE TS-2040 PRINTER  
Using the Larken User-defined NMI/F-key Option  
by G. Chambers

I wanted to copy Spectrum games screens to the 2040 printer. I knew it was possible to SAVE a SCREEN with the NMI/S-key routine; then reload it and use the 2068 COPY command. But I wanted to be able to copy a picture directly as it was being loaded or being played on the computer.

It seemed to me that it should be possible to lift the COPY routine out of the Spectrum ROM, and relocate it into the spare memory of the Larken RAM. The following listing is the result.

Briefly, I moved the COPY code out of the Spectrum ROM into the computer memory, attached a front-end m/c routine which would boot it into the Larken ROM, and (Line 50) poked an address location into the Larken DOS which told it where to find the code when the NMI/F-key routine was invoked.

There was a bit more to it than that, of course. I found that the complete COPY routine was in three different locations of the Spectrum ROM. This meant that I had to pull the pieces out of the ROM, move them into a single block of m/c code, and alter all the CALLs in the m/c to fit the new location. Keep in mind that the location was not at the temporary 2068 RAM memory addresses, but the final location (address 16100) in the Larken DOS RAM.

```

10 REM      Larken NMI-F key to copy a screen$ to the TS2040 printer
20 RESTORE 100: FOR n=36000 TO 36250
30 READ a: POKE n,a: NEXT n
50 RANDOMIZE USR 36000: RANDOMIZE USR 100: POKE 8200,16100
60 PRINT AT 6,9;"The NMI F-key" "" "SCREEN$ to TS2040 printer"" ""
  function is installed."
70 PRINT AT 13,4;" To print a SCREEN$""TAB 4;"NEW the computer,
then""TAB 3;"Turn on the 2040 printer"" Load desired SCREEN$, ""
  then press the NMI-button, and the F key."
90 STOP
100 DATA 243,205,98,0,33,182,140,17,228,62,237,83
101 DATA 22,32,1,243,0,237,176,195,186,0,243,6
102 DATA 176,33,0,64,229,197,205,44,63,193,225,36
103 DATA 124,230,7,32,10,125,198,32,111,63,159,230
104 DATA 248,132,103,16,231,24,13,243,33,0,91,6
105 DATA 8,197,205,44,63,193,16,249,62,4,211,251
106 DATA 251,33,0,91,253,117,70,175,71,119,35,16
107 DATA 252,253,203,48,142,14,33,195,102,63,120,254
108 DATA 3,159,230,2,211,251,87,205,184,63,56,10
109 DATA 62,4,211,251,251,205,23,63,207,12,219,251
110 DATA 135,248,48,235,14,32,94,35,6,8,203,18
111 DATA 203,19,203,26,219,251,31,48,251,122,211,251
112 DATA 16,240,13,32,233,201,0,0,33,0,91,253
113 DATA 203,1,78,32,18,120,253,203,2,70,40,5
114 DATA 253,134,49,214,24,197,71,205,197,63,193,62
115 DATA 33,145,95,22,0,25,195,142,63,6,0,0
116 DATA 253,203,1,78,32,26,253,203,2,70,32,8
117 DATA 237,67,136,92,34,132,92,201,237,67,138,92
118 DATA 237,67,130,92,34,134,92,201,253,113,69,34
119 DATA 128,92,201,0,0,0,62,127,219,254,31,216
120 DATA 62,254,219,254,31,201,0,62,24,144,87,15
121 DATA 15,15,230,224,111,122,230,24,246,64,103,201
122 DATA 0,0,0,0,0,0,0,0,0,0,0,0

```

## QL SIG

Ian Robertson

The March QL SIG meeting was held, as usual, at Hugh Howie's home, on March 17th. The only green visible was our envy of Hugh's new and improved QL setup.

Hugh now has (1) QL and assorted disk drives connected to an RGB monitor and (1) other QL connected to two composite video monitors. The second QL also has assorted disk drives. Altogether, a great setup for demonstrations and networking. Please note that he has all components properly grounded, as they sit on desks resting on a carpeted floor. Static electricity is a QL killer.

Although only four members were present, there were many questions and almost as many answers from those present.

An attempt was made to marry an IBM three button mouse to either Ser1 or Ser2 with *Serial Mouse Driver* software loaded. No luck.

Then came a brief demo of the venerable *ICE* mouse, appropriately enough called *MICE*. For those of you not familiar with this beast, it consists of a small box interface with an edge connector protruding, which slides into the rear cartridge port. This box also holds an eprom with the *ICE* software and has a three foot cord with a three button

mouse attached. This was one of the first mice for the QL and shows it's age.

We then agreed to write to the *Mersey Group* regarding there new *Mersey Mouse*. This has been done and we await to see if it is usable with the likes of Eye-Q, Quill and Abacus.

After this interlude in *mousedom* we returned to the real world of TK2 commands and software demos.

Bill Lawson and Hugh showed us how to change the window colours and the lettering size, for better visibility. Maybe I should read the *User Guide* after all !

Lou Laferriere showed us his usage of *Chaos Busters*, an *Archive front end* program. It is used for addresses, stamps, music, movies and any other home database requirements. The search and find abilities are great.

Hugh got into *PLUS4* to write out some instructions. After my experiences with the learning curve for *Software87*, versions 1.0 through 3.0, I am still a little reticent about another version. To be fair, all the reviews, including Hugh's, rave about it. In the meantime I will stick with *Turbo Plus Quill v2.35* enhanced with *Files 2*. Now that I am retired my pockets are not very deep.

# Q L I P S

by Hugh Howie

## QL - MEMBERSHIP DRIVE - 1992

The mailing is now completed. The licking of stamps and envelope flaps is now a thing of the past. All I have to do now is carry out the Tongue Lubricant containers. Such lubricant is of prime importance and should be the first thing to be obtained.

I had considerably more work than I should have had, mainly because of incorrect information being passed to me.

I was told that the larger (12 x 9) envelope would require more postage than a smaller (6 x 9). Because of this I purchased the 6 x 9 envelopes, and this resulted in my having to fold each newsletter to fit the envelope. I then discovered that SIZE had nothing to do with the cost. Weight is the determining factor with Printed Paper Rate.

I found that the 44 page (22 sheet) Newsletter weighed about 130 grams, and would cost \$1.30 to mail to the States.

I found that reducing the Newsletter to 36 pages (18 sheets) reduced the weight to about 96 grams, and the cost would be .86 cents.

As the letter we were sending out had 44 pages, of which 8 were a one-time listing of the articles appearing in Sinc-Link over the past few years, it was decided that they were not really necessary for this project, so they were removed.

This still meant the folding of almost 400 Newsletters, and my wife's rolling pin became the most useful tool.

Next problem was that after a taste of the glue on the envelope, the St Bernard refused to sit with his tongue out. Eventually he disappeared in the direction of the nearest mountain looking for poor lost and thirsty souls, leaving me to lick all those stamps myself. Ditto the envelope flaps. Sticking on address labels, and also the origin labels.

As I stated at the beginning, a useful tool in this type of project is an ample

supply of Tongue Lubricant which is available from the pirates at the local "IN & OUT" (Regd) store. Where it is available in copious quantities and exorbitant prices.

One thing noted was that the brand of Lubricant did not matter to any great extent - quantity was the most important factor. This also helped time to pass in a most convivial manner.

However, the task is completed. The results are in, and although this drive was targeted at the QL'er, the response by new members indicated there were a lot of dedicated Sincalirites out there, as most new members also had many other Sinclair computers.

So all profitted.

The Club - with new members,  
Myself - lubrication,  
The In & Out Store - sales.

And all those lucky people who are not members of the biggest and best Sinclair Club in North America, if not the world.

Let's not be diffident.

==== \*\*\* =====

## Detroit Area BBS

I have just heard from one of our new members there is a BBS in the Detroit, Michigan area with a large Timex-Sinclair sub-section on it with many programs available for download for the ZX81/TS2068/QL.

The BBS is called "Serial Port" and its phone number is 313 286 0145. It can handle from 300 to 9600 baud, available 24 hours.

There is also I understand a T/S user group trying to reform in that area. I would suggest to anyone interested that they call the above number and leave a message. Someone is sure to pick it up.

H.H.H.

**PLEASE READ ME:** £2 for any 12 titles. Send a tape (not the cassette case), m'drive cartridge, 3" disk, +D 3.5 disk, with your name on, inside a jiffy bag which can be re-used by us. Orders paid by cash / postal orders sent in 6-7 days, or allow bank clearance 7-10 days. Delays of 3 or more weeks, will be due to system failure - rare but possible! If your order weighs more than 100g then add 50p for P&P. Please note underlined titles need the multiface 3. Orders payable to MARTYN SHERWOOD.

Amstrad 464/664/6128



Sinclair Spectrum

48/128+2/2A/+3

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

**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 Grafix util, 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 on free memory, U51 48K keyboard buffer, U52 Read kempston joystick ports - 48K only, U53 Utilise 128K screen animation, U54 Demo - needs U53, U55 Downtown, U56 ASCII edit, U57 Day convert, U58 Union Jack demo, U64 Tune maker, U65 Music flash, 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 Rotate & slant screens, U91 +D system clock, U92 Spelling aid, U93 Test your morse code, U94 48K Soundsystem, U95 Morse code teacher, U96 Screen magnifier, 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 Election stats, 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 TASPEEK 2 - Tasword file previewer, U134 Spreadsheet, 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 - tape 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 Genius Mouse Tester (+3 only), U156 Histogram charts (+3 only), U157 Line Graph charts (+3 only), U158 +3 disk editor, formatter, etc.



Example of digitized TV picture:  
Christine (Neighbours)

SPECIAL ART PACKS, NOT 3"disk

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 SHAREWARE

SW1 - MULTISTORE - store 7K in your multiface  
SW2 PAGE SYSTEM WORD PROCESSOR - also acts as a database.

**PROGRAMMERS NEEDED!**

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SINC-LINK

# GAMES

Prism PD is constantly on the look-out for m/c programmers to contribute to our library, and our magazine. Why not release commercial software through us?

## .. ART PACKS: NOT +3 DISK

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

G1 - Nelly 128 - Catch the falling Elephants- / G2 Batnball - An addictive 1 or 2 player game / G3 - DT's L&A - Try and get the highest score! / G4 - Alienatta - Defend your ship against the aliens / G5 - Cacapture - Excellent 2 player strategy game / G6 - Brickbat - Colourfull - test your reflexes! / G7 Magicfore - A game that uses logic - are you up to it? / G8 MartianoKO - Left, right, aim - and blast away! / G9 SincC5 - Run over the pedestrians in your C5! / G10 - Skittles - How many can you knock down? / G11 - Cypher - Great PD version of the Mastermind game / G12 - Voyager - A blast of a PD game / G13 - Nelly - 48K version of the classic arcade game / G14 - Manblitz - Bomb the Manhattan skyline! / G15 - Frogger - Very colourfull and quick version of a classic! / G16 - Galaxydef - PD Space Invaders on your Spectrum / G17 - Basicbing - Play 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 like Evil Kenieva! / G25 - Magic Square - A sliding puzzle game.....a delight / G26 - Solitaire - Computer version of the board game / G27 - House - Dare you enter?!! / G28 Globular Troubles - our best game - commercial standard! / G29 Maze - can you escape? / G30 Mission Collision - great space blaster

## video digitizing

Digitize your loved ones!! Send a colour photograph (landscape format). Alternatively, using a video digitizer, we can save pictures directly from a video cassette (VHS). Indicate if you want the pictures saved on tape or disk or printed out. £5

We can also scan artwork, text etc. £3 per scan.

Desk Top Publishing, letterheads, logos, business cards. £6 per layout + print.

### GAME POSTERS

We can supply posters depicting your favourite game. £2.99 each. SAE for our list. There are 40 to choose from, on glossy A4 paper. Price includes P&P! New posters can be arranged

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 Graftix 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 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 Voyager Demo (\*), D56 Border Scroll (\*), D57 Rave Demo (+D ONLY),

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Join our club for £3.50 for 1 yrs membership and receive our club magazine for £1.50 per issue. It contains help on m/c, basic, a techie page, programming in 'C', discounts on our software, technical problems solved, pokes, tips, type-ins, news from the world of PD, reviews on PD & commercial software + hardware. "EVERY FANZINE YOU'LL EVER NEED!"



MAR/APR 1993  
March 30, 1993

Dear Out-of-Town Members,

I have been busy the past month or so, what with processing quite a few new members that have joined, in response to Hugh Howie's efforts at recruiting QL-types. We presently have about 85 out-of-town members, as well as about 12 in-town (Toronto) members.

Mind you, Hugh is going to have most of the ongoing work I am sure. Taking care of these new QL members' needs.

I mention this in case some of you have been wondering at my slow responses!! I think I am pretty much up to date, but if any of you feel otherwise, drop me a line. I may have lost sight of your requests.

In the back of this letter is a list of Timex treasures which I am clearing out. Now, I could just chuck them into the garbage. I'm not really interested in trying to set a value on them.

Some of you may be interested in some of these items. If you are, make me an offer which will encourage me to go to the trouble of packing them up and mailing them.

I get just about enough work in packaging tapes and disks, etc., so I am not particularly excited about still more packaging. Tempt me. I'll sent out individual items.

Does anyone out there have a Larkenized RAMEX system, or do you know someone who does? I'd like to get in contact with him. We'd like to get a copy of the LKDOS code for the RAMEX version. One of our members has just such a system, but with the early vintage Larken LKDOS. We'd like to upgrade it to the version 3 LKDOS. Larry Kenny does not seem to be much help. Bob Swoger has been more helpful. Anyway, if anyone has ideas?

You may notice that the newsletter has a disassembly of the Larken LKDOS. This disassembly has been done by one of our members, Ken Shoenberg. Through an oversight this issue of the newsletter does not give him the deserved credit. We shall redress this in the next issue. The disassembly is quite lengthy. Such that we shall have to run it in many issues. It seemed only right and proper that it be published for the record, rather than languishing in someones files.

One thing I should say right now. Our newsletter has been very successful in the past several years due to member contributions. It is the newsletter which is the lifeblood of a club whose members are as dispersed as we are. And, if no one writes articles for the newsletter, we have no newsletter, and presently no more club. And people then say, "Whatever happened to that fine Timex club we used to belong to".

Do make an effort to write something for us.

I shall have to close this letter off, and get the newsletters into the mail.

Sincerely,

George Chambers

#### Hardware Items

- 4- TI-99 Keyboards (suitable for TS1000 aux keyboard, etc)
- 1 - Tape head demagnetiser
- 1 - TS-2068 (suitable for spares)
- 1 - TS-2050 Modem (Original Westridge w/docs and Power Supply)
- 1 - TS-2050 modem (Westridge surplus item, in metal case)
- 1 - TS-2050 modem ( " " " , uncased)
- 1 - JIL Program data Recorder
- 2 - JIL CompuDeck tape recorders
- 1 - Tape head cleaning tape
- 1 - TS-2040 Printer w/power Supply
- 1 - Cartridge OS-64, for 2068
- 1 - 15 rolls of Timex 2040 printer paper

#### Computer Books for the TS1000 and TS2068

- 1 - Better Programming for your Spectrum & ZX81, by R. Speel
- 1 - Tantalizing games for the TS2000 series, by Hal Renko
- 3 - TS2068 User Manuals
- 3 - TS1000 User Manuals
- 1 - 40 Best M/C routines for the ZX Spectrum w/explanations
- 1 - The Spectrum Workshop - Wordprocessing and beyond
- 1 - The Working T/S 2068, by David Laurence
- 1 - Creative Games for the TS-2068, by Robert Maunder
- 1 - \* Color Graphics for the TS2048 and TS2068 Computers
- 2 - Timex Sinclair 2068 Beginner/Intermediate Guide
- 2 - " " " Intermediate/Advanced Guide
- 1 - Computer Telecommunication Techniques (not for Sinclair)
- 2 - Write your own Adventure programs (An USBORNE series)
- 1 - Usborne Guide to Better Basic " " "
- 1 - Understanding Computer Graphics " " "
- 1 - Ideas for Micro Users, A Ladybird computer series book)
- 1 - Games for your TS2000, by Peter Shaw
- 1 - \* Supercharge your Spectrum
- 1 - \* Spectrum Advanced User Guide
- 1 - \* Computer Companion for the T/S Computers
- 1 - Tim Harnell's GIANT book of computer games (generic Basic)
- 1 - " " second GIANT book of computer games(" " )
- 1 - 30 programs for the ZX81 1K memory
- 1 - More TRS80 Assembly Language Programming

#### Original TS-2068 Program Tapes

- 1 - Artworx V1.1 by Novelsoft
- 1 - ZXpert " "
- 1 - The Worx " "
- 1 - Timachine " "
- 1 - Mscript
- 1 - C Language, by HiSoft
- 1 - DevPac, " "
- 1 - Pro/File, by Tom Woods
- 1 - Pro/File, mod by R.C. Fisher
- 1 - Voice Chess
- 1 - VuFile (Timex)
- 1 - ZEUS Assembler
- 1 - Fig Forth, by HawgWild Software
- 1 - WHAM ( tape - A Sound system for the Spectrum)
- 1 - Arkanoids - (A game tape)
- 1 - Learning Kit - Numbers at work (2 cassettes with manual)
- 1 - Entrepreneur - The complete Business Start-up kit  
(2 cassettes with manual)

#### Original TS-1000 Program Tapes

- 1 - Vu-Calc
- 1 - Manufacturing Control
- 1 - Pinball
- 1 - Fastword
- 1 - The Budgeter
- 1 - Personal Stock Market Planning
- 1 - The CarPooler
- 1 - Flight Simulator
- 1 - TS Compass (an assembler/disassembler, I think)
- 1 - ZXpress
- 1 - ZX Forth

TORONTO TIMEX--SINCLAIR USERS CLUB  
March 3, 1993

14 Richome Court,  
Scarborough, Ont. M1K 2Y1

Les Cottrell  
108 River Heights Drive  
Cocoa, FL 32922

Dear Les,

Thank you for the return of the Mscript support disk, and the Canadian stamps!

I am enclosing the gamesPOKES/PEEKs pages that you asked for. I am also sending you an improved Mscript support disk. I reworked it quite a bit, following your comments about it. Take another look at it. Maybe you will come across some more bugs that I did not come across.

The other day I used the Basic to Mscripts for an article, and it did not work so well. I have not explored just what the problem was. What happened was that I had a Basic Listing that had maybe 20 lines of DATA statements. I moved the Basic into Mscript OK, but when I tried to print it out to a 32 character length, so make it look like a 2040 printout, each of the DATA lines came up like this:

```
10 DATA  
23,234,34,0,205,etc
```

In other words the DATA line stopped printing after the word DATA, and started a new line. This happened with every DATA line. All the other lines behaved as expected.

It might have had something to do with the fact that the DATA statements were created with the "tstk.C1" toolkit program. It lifts data out of a designated block of memory and puts this information into DATA statements.

The matter of the LKDOS code is this. We have a member with a RAMEX system with a Larken cartridge DOS version L1 or L2. I have not been able to locate a Version 3 LKDOS for the Ramex. Maybe Larry Kenny did not update the Ramex version of his LKDOS. My thought was that we might be able to determine the changes that were needed so that we could create a version 3 for the Ramex, ourselves. But I do not want to get into anything heavy just yet. Maybe Ken S. might take a look at it some day. But I am not going to do anything for the moment at least. Especially not 19 pages of LKDOS!!

In reading your letter again, I see where you say that you had to remove the Spectrum Emulator chip to get this program to work. I'm puzzled. Which program; the AUTOSTART? I don't quite get it. Can you explain just what you said. Maybe there's something there that I left in.

Sincerely,

George Chambers

