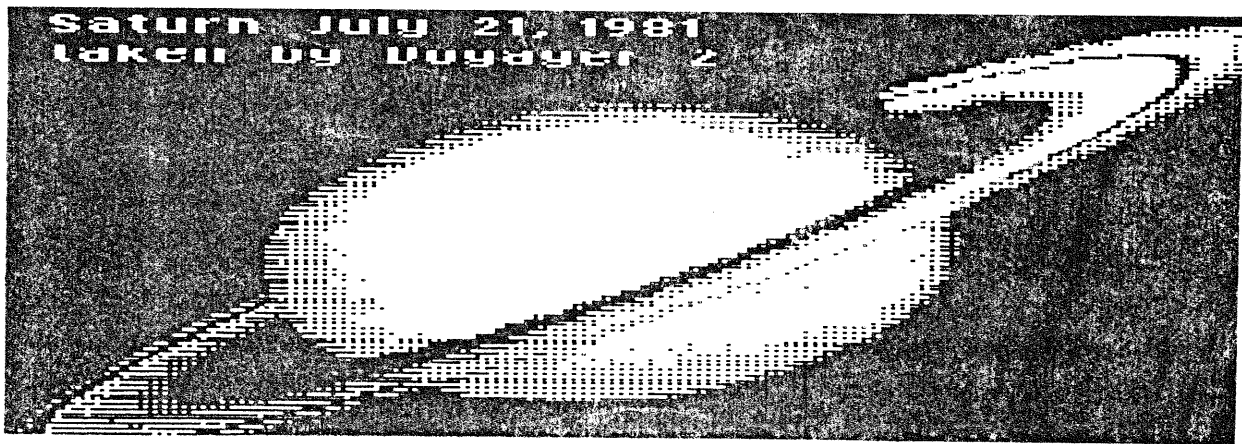
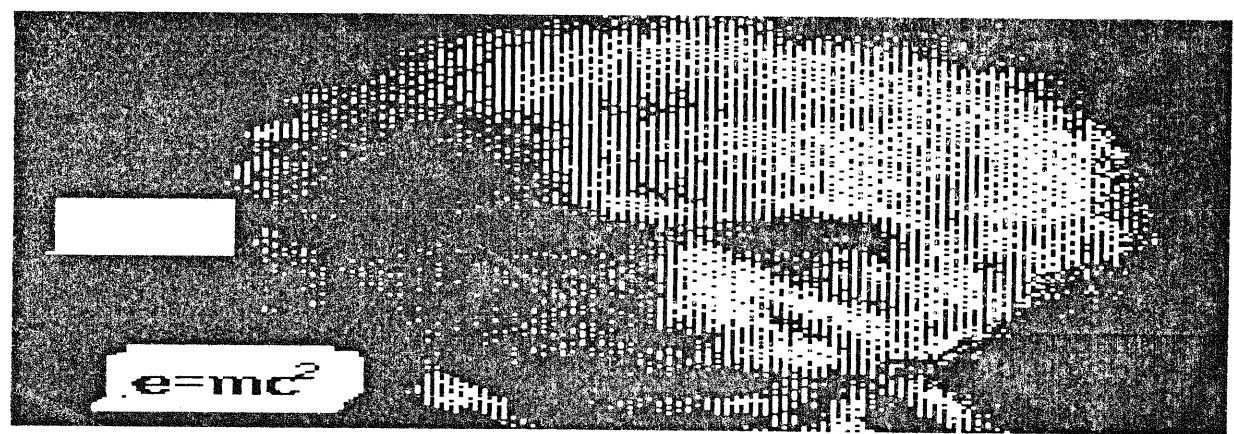
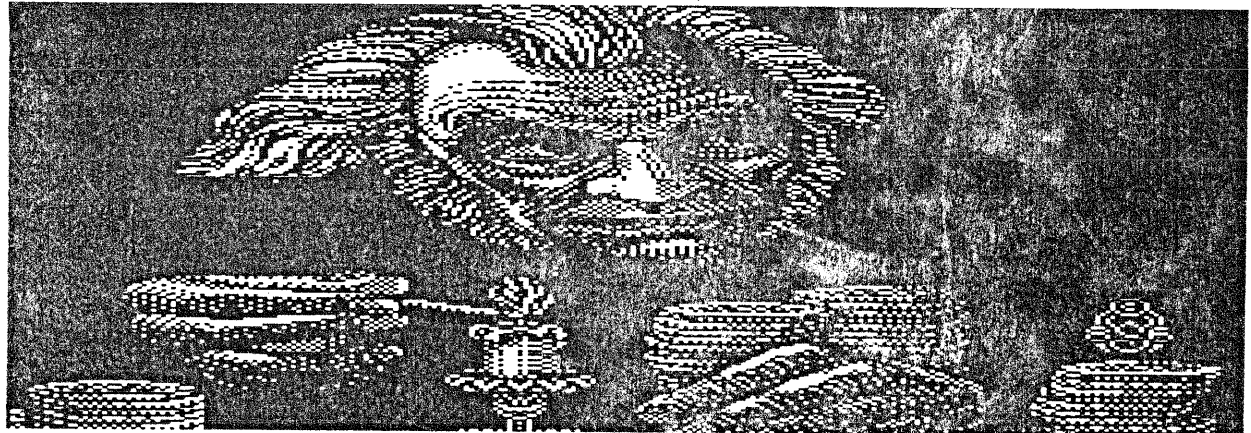


UPDATE!

MAGAZINE
P.O. BOX 41000
DENVER, CO 80201

ISSN 1047-1007
CODEN UJPT
01



Assistance in Publishing this magazine is provided by Eliad P. Wannum, poet, computer user and all round good guy. The magazine is made possible by the regular contributors such as Paul Holmgren, Bill Cable, Andy Hradesky, Bob Hartung to name a few, and by the many contributions of other writers and programmers. Your contributions to this magazine are welcome. This is truly a magazine BY THE USER AND FOR THE USER OF SINCLAIR, TIMEX AND CAMBRIDGE COMPUTERS. When we cover other operating systems such as CPM or MSDOS it will be in a relationship to our computers, or emulators for our systems to run their software. We primarily cover disk based systems and software for the TS2068, Spectrum, QL, Z88...and will cover items on the TS1000 if disk drive based, or in relationship to using it with the above mentioned computers. We do accept reviews of peripherals that are useable by our systems, such as scanners, printers, modems, etc. Submissions should be on disk or hard copy (two copies and at least NLO, no draft mode). If there is artwork, please let us know in what order it should be used, and provide it as a saved screen or hard copy screen dump. The format is very relaxed. Just pay attention to the width of the pages and allow 3/4 inch top and bottom, and make the left and right margins wide enough to accommodate a 3 hole punch that does not cut out some of the text. We have enlarge and reduction capacity to adjust a page, but may lose some print legibility in the process. Most important is legibility. Draft quality dot matrix does not reproduce well. Print size preference is ELITE 12 CPI. PICA 10 CPI is okay also, but please no condensed print. Please do not make programs submitted on cassette tape under any circumstances; disk or hardcopy only. Exceptions to this would be on the waters from the Rotronics Wafadrive for the Spectrum. Z88 programs on disk may be in either IBM or QL format or hardcopy. TS2068 programs may be LISTED in 32 chr. lines.

The magazine is published on a quarterly basis in the months of October, January, April and July. All subscriptions begin and end at the same time...first issue being October and all renewals coming due after receipt of the July issue. The cost is \$18.00 U.S. for a one year subscription for North America, and for those outside of this area \$20.00 U.S. We accept personal and business checks, money orders, and Cash. We do not accept credit cards at this time, due to costs. Back issues, where available can be obtained from us, at excellent prices.

Mailing date for all issues is the twentieth of the issue month. At times due to Postal Holidays, or the 20th falling on a weekend (bulk mail not accepted on weekends) they will be received at the Postal Unit the next business day. Please allow two to three weeks from this date before assuming your issue is not on its way to you. The Postal service tells us it can take as long as 6 weeks via bulk mail. For those wanting speedier service we can arrange your issue to go by First Class Mail, but that will raise the price of your subscription by \$3.00.

Frank Davis of P.O. Box 1095, Peru, Indiana 46970. Phone number is 317-473-8031, with normal phone hours being between 5 P.M. and 9:30 P.M. Standard Time during the week and noon to 6 P.M. on weekends. When we are not there or unavailable, please leave a message with our answering machine, you'll be answered by mail

UPDATE COMPUTER SYSTEMS PAGE DIRECTORY, APRIL 1993

The computer that an article concerns is marked by using the following mark at the start of the page number-TS2068 = *,QL = # ,Z88 = % ,TS1000= . There will be no mark if the article or ad applies to all or several different computer systems.

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Back Covers ---Issue Disks for TS2068 and QL

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Welcome to the April issue of UPDATE! I will be short on lectures this issue so that we can get to the articles and ads. We have at least two exciting events coming up this summer that I hope to see many of you at.

The first is a new event, a show here in North America, for users of the QL. It is called Miracle in Newport (Rhode Island) and will take place June 5th. UPDATE Magazine will be there for it, as well as Mechanical Affinity, both QUANTA librarians for North America (Bob Dyl and Paul Holmgren), Bill Cable of WOOD and WIND Computing, MIRACLE SYSTEMS of the U.K., W. N. Richardson (formerly E.E.C.) of the U.K., TF SERVICES, of the U.K., IQLR, and possibly Dilwyn Jones Computing, also of the U.K. A few user groups and at least one Sinclair club have also indicated they may be there with tables. Most of us dealers will be arriving a day or two early, and staying at least another day or two after the event. The QL is definitely not a dead machine, and for those who have not closely followed it, this will be a great chance to see just how sophisticated the hardware and software have become.

The second event will be the annual DMA COMPUTERFEST at Dayton, Ohio in August. We hope to have a full ad and info on this in the next issue of UPDATE. This will be the 3rd year for UPDATE and Mechanical Affinity to go and display at this show. I hope to see much more advance planning and contact to Sinclair users this year than was done last year. We had quite a few show up for it, but with the word spread farther and faster we could easily double that number. Tim Swenson is now living in that area and just may give that boost that is needed. Please, guys, and gals, don't take this as too critical. What was done last year was good, we just need more of it. I am told over 27 thousand people attended last year's show and it is a great place for disk drives, monitors, and all generic computer supplies. For those who have a non-Sinclair machine, you will find just about any computer you can think of represented.

The last item, is to tell you in advance, that UPDATE Magazine will be continuing for at least one more year beyond your July issue. This means that we will be here still in 1994. The hardest part on this decision was how long it takes most of you to finally get your renewal into us. The number of subscribers has stayed steady; we lose a few occasionally, but gain some new ones each year. I have wanted to upgrade the hardware end of producing the magazine, and for that we need money. We have kept the price the same for three years, and this in the face of rising postage costs, as well as paper and toner. A few may say "well I only pay \$20 for some magazines that publish 12 issues a year!" That is true and most of them are filled with many full page and expensive ads. We do not have that as a source of income, only your subscription. This does not mean that the price will be going up next year, just telling you why you should renew at the exact time it is due. Many thanks to those few of you who sent a few extra dollars to help out, and to those who got a subscription for a friend. I use Sinclair computers, as well as my Amiga, and want to see this magazine continue as well as most of you. See ya next issue!

If you wish to create a new graphic drawing, then the initial action after running the program, would be to move the cursor to a selected color area on the pallet and pressing the joystick button. The selected color is displayed in a character position located near the pallet. After selecting a color, slew the cursor to a desired position on the screen and press the button, holding it until the cursor stops blinking. After this, moving the cursor will result in the selected color being left in the "BIXEL" positions that the cursor traverses. To turn off the painting of color, press the button again until the cursor stops blinking. The cursor can then be moved to a different part of the screen where the drawing can be continued or a new color may be selected.

After reading your article on "TS2068 Video Bells and Whistles" in the October, 1992 issue of UPDATE, I decided to write a sample program which incorporated your ideas on using the high resolution color graphics mode. The result is the enclosed program on disk in LKDOS format. "PALLET.B1" utilizes the entire 24 line screen to draw pictures. Only the pallet area of the screen is locked out for drawing color images. It also has a file saving and loading capability. When you run the program, the screen displays the available color pallet at the lower right and a small white area above it. A flashing cursor is displayed near the pallet area. The program is designed to operate with a standard TS2068 compatible joystick which is plugged into the port on the left side of the computer. If you desire to load a screen from disk instead of drawing a new one, then the first action must be to move the cursor to the small white area above the pallet. Pressing the button on the joystick at this time will result in a message asking you to input the name of a file to be loaded. I have included a sample file named "DEMO1" which can be used to demonstrate this feature. The saved file consists of only the second display area of 614 bytes which contains the color attributes for the display. Since the primary display file only consists of alternating 4 bit "BIXELS" of ink and paper, there is no need to save it. The "DEMO1" program is not intended as a work of art since my artistic ability is slightly less than my musical talent, which is zero.

Dear Bill,

Mr. William J. Pedersen
1120 Merrifield S.E.
Grand Rapids, MI 49507

I have included a listing of the program and a listing of the code utilized for screen setup. I have also included a machine code utility program which generates a listing of all BASIC program variables which reside in the VARS area of memory. This program also resides in the printer buffer area when it is loaded with the command PRINT #4: LOAD"VARPR1.C1"CODE. After listing a normal BASIC program on my printer, I use the command RAND USR 23296 to activate the variables search routine which prints out the name

The only problem with writing the main program in BASIC is the fairly slow movement of the cursor. Although some speedup of the movement could be achieved by rearranging the order of the subroutines to shorten the search time, I will probably convert much of the program to machine code. You mentioned in your article that the two 768 byte areas normally used for the screen attribute files are available for machine code in the high resolution color mode. This is true, but extreme care must be used in connection with the primary display file attributes area. Although the SCID chip does not access this area when the high resolution color mode is active, HOME ROM routines such as CLS and PRINT will overwrite all or part of the primary screen attributes area with the ink and paper colors stored in the systems variables area of memory.

I wrote the bulk of the program in BASIC in order to demonstrate the feasibility of doing so. There are 152 bytes of machine code which is loaded into the printer buffer area of memory when the program is run. This code handles the video mode changes, the movement of the O.S.RAM code to high memory and back, and the primary and secondary display file initialization. It also has a section which moves the lower third of the second display file temporarily to high memory when this portion of the screen is enabled for print statements.

When you are finished with the drawing, you may move the cursor to the small white area and push the joystick button. You will be asked for the name of the file to be saved at which time you can enter a file name up to 6 characters long (the .C1 suffix is added by the program). If you enter the name "NOFILE" or "nofile" then the program will terminate with all parameters returned to normal. You can also terminate the program at any time with the "BREAK" command which will also result in all parameters being returned to normal.

from the pallet.

and type of all variables which have been stored in the VARS area when the program has been run. This utility assumes that an AERCO type printer interface at port 127 (7FH) exists. If your printer port number is different, then it will be necessary to patch 3 locations (23522, 23529, and 23531) with the correct port address prior to running it. I have found this utility to be useful for debugging programs to find out if certain areas of the program have not been accessed during the RUN sequence, since the VARS area will contain only those variables which have been encountered during execution of the program. This utility code is also useful in determining whether or not a variable name has been used already when you are patching a long BASIC program.


I hope that introducing a practical program which makes use of the heretofore largely ignored high resolution color mode will create continued interest in the TS2068 computer capabilities.

sincerely,


Charles G. Bothner (check) *Both*

Charles G. Bothner
137 East Shore Road
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```

5 REM THIS PROGRAM GENERATES A HIGH RESOLUTION COLOR PALLET AT THE LOWER
  RIGHT CORNER OF THE SCREEN AND THEN ALLOWS DRAWING OF SELECTED COLORS AND
  IT HAS FILE SAVING CAPABILITY. "PALLET.B1" REV. 7, DECEMBER 30, 1992, BY
  C.G.BOTHNER
8 POKE 23730,24: POKE 23731,247: REM SET RAMTOP
10 PRINT #4: LOAD "HIRESC.C1"CODE : RANDOMIZE USR 23296
19 REM GENERATE PALLET DISPLAY
20 LET B=0: LET C=28703: LET D=0: LET COL1=9: LET COL2=9: LET S=0
25 ON ERR GO TO 9000
30 FOR K=224 TO 0 STEP -32
40 FOR I=C TO C+1536 STEP 512
50 FOR J=I TO I+K STEP 32
60 POKE J,B: NEXT J: NEXT I
70 LET C=C+31: LET B=B+9
80 NEXT K
90 LET B=0: LET C=28959
100 FOR K=0 TO 7
110 FOR I=C TO C+1536 STEP 512
120 FOR J=I TO I+K
130 POKE J,B: NEXT J: NEXT I
140 LET C=C+31: LET B=B+9
150 NEXT K: OUT 245,7: OUT 246,0
155 GO SUB 3000: REM MARK DISK ACCESS AREA
160 LET X=219: LET Y=55: REM CURSOR START LOCATION
170 GO SUB 1000: REM GET ATTR. BYTE ADDR.
190 GO SUB 5000: REM DETERMINE WHETHER PAPER OR INK CHANGES
210 IF P=0 THEN GO TO 250
220 LET CT1=INT (COLEV/8)*8: REM FLASH BLACK INK
230 LET CT2=INT (COLOD/8)*8
240 GO TO 270
250 LET CT1=((COLEV/8)-INT (COLEV/8))*8: REM BLACK PAPER
260 LET CT2=((COLOD/8)-INT (COLOD/8))*8
270 POKE ADDR,CT1: POKE (ADDR+256),CT2
280 IF P=0 THEN GO TO 320
290 LET CT1=INT (COLEV/8)*8+7: REM FLASH WHITE INK
300 LET CT2=INT (COLOD/8)*8+7
310 GO TO 340
320 LET CT1=((COLEV/8)-INT (COLEV/8))*8+56: REM WHITE PAPER
330 LET CT2=((COLOD/8)-INT (COLOD/8))*8+56
340 POKE ADDR,CT1:-POKE (ADDR+256),CT2
350 POKE ADDR,COLEV: POKE (ADDR+256),COLOD: REM FLASH ORIGINAL COLORS
360 IF STICK (2,1)<>0 THEN GO SUB 2000: IF S=2 THEN GO TO 9000
370 LET Z=STICK (1,1)
380 IF Z=0 THEN GO TO 170
390 IF Z=1 THEN LET Y=Y+2
400 IF Z=2 THEN LET Y=Y-2
410 IF Z=4 THEN LET X=X-4
420 IF Z=8 THEN LET X=X+4
430 IF Z=5 THEN LET X=X-4: LET Y=Y+2
440 IF Z=6 THEN LET X=X-4: LET Y=Y-2
450 IF Z=9 THEN LET X=X+4: LET Y=Y+2
460 IF Z=10 THEN LET X=X+4: LET Y=Y-2
470 IF X>255 THEN LET X=255
480 IF X<0 THEN LET X=1
490 IF Y>191 THEN LET Y=191

```



```

500 IF Y<0 THEN LET Y=1
510 GO SUB 4000
520 IF D=1 THEN GO SUB 1000: GO SUB 5000: GO SUB 2140
530 GO TO 170
999 REM GET ATTR. BYTE ADDRESS
1000 LET L=191-Y: LET BLOCK=INT (L/64)
1010 IF BLOCK=0 THEN LET START=24576
1020 IF BLOCK=1 THEN LET START=26624
1030 IF BLOCK=2 THEN LET START=28672
1040 LET LINE=INT (L/8)-(BLOCK*8)
1050 LET SCAN=((L/8)-LINE-(BLOCK*8))*8
1060 LET ADDR=START+(32*LINE)+(256*SCAN)+INT (X/8)
1070 LET COLEV=PEEK ADDR: LET COLOD=PEEK (ADDR+256)
1080 RETURN
1999 REM PROCESS BUTTON PUSHES
2000 IF X<252 AND Y<73 AND Y<78 THEN GO TO 2300: REM DISK ACCESS
2010 IF INT (Y/8)>=8 THEN GO TO 2120
2020 IF X<<(192+8*INT (Y/8)) THEN GO TO 2120
2030 REM PICKUP PALLET COLORS
2040 GO SUB 1000: REM GET ATTR. BYTE ADDR.
2050 LET COL1=PEEK ADDR: LET COL2=PEEK (ADDR+256)
2060 FOR I=28761 TO 30297 STEP 512
2070 POKE I,COL1: NEXT I
2080 FOR I=29017 TO 30553 STEP 512
2090 POKE I,COL2: NEXT I
2100 LET COL1=INT (COL1/8): LET COL2=INT (COL2/8)
2110 LET S=1: LET D=0: RETURN
2120 IF D=1 THEN LET D=0: GO TO 2122
2121 IF D=0 THEN LET D=1: GO TO 2140
2122 IF STICK (2,1)<>0 THEN GO TO 2122
2124 RETURN
2130 REM PLACE NEW COLORS ON SCREEN
2140 IF P=0 THEN GO TO 2180
2150 LET CT1=INT (COLEV/8)*8+COL1
2160 LET CT2=INT (COLOD/8)*8+COL2
2170 GO TO 2200
2180 LET CT1=((COLEV/8)-INT (COLEV/8))*8+8*COL1
2190 LET CT2=((COLOD/8)-INT (COLOD/8))*8+8*COL2
2200 POKE ADDR,CT1: POKE (ADDR+256),CT2
2220 IF STICK (2,1)<>0 THEN GO TO 2220
2230 RETURN
2300 RANDOMIZE USR 23366: REM SAVE LOWER PART OF SCREEN ATTR.
2310 IF S=0 THEN GO TO 2370
2320 INPUT "SAVE FILE NAME(6 CHAR.MAX)?:":A$
2325 IF A$="NOFILE" OR A$="nofile" THEN GO TO 2360
2330 LET B$=A$+".C1"
2340 RANDOMIZE USR 23343: REM RESTORE SCREENS
2350 PRINT #4:SAVE B$ CODE 24576,6144
2360 LET S=2: RETURN
2370 INPUT "INPUT FILE NAME(6 CHAR.)?:":A$
2380 LET B$=A$+".C1"
2390 PRINT #4:LOAD B$ CODE
2400 RANDOMIZE USR 23427: REM RESTORE PRIMARY DISPLAY FILE
2410 RETURN
2999 REM MARK DISK ACCESS TARGET AREA

```

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Female Faces
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Collection#6 Miscellaneous
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B\$ VARIABLE
A\$ VARIABLE
Z VARIABLE
CT2 VARIABLE
CT1 VARIABLE
P VARIABLE
X1 VARIABLE
COLOD VARIABLE
COLEV VARIABLE
ADDR VARIABLE
SCAN VARIABLE
LINE VARIABLE
START VARIABLE
BLOCK VARIABLE
L VARIABLE
Y VARIABLE
X VARIABLE
J FOR/NEXT VAR.
I FOR/NEXT VAR.
K FOR/NEXT VAR.
S VARIABLE
COL2 VARIABLE
COL1 VARIABLE
D VARIABLE
C VARIABLE
B VARIABLE

3000 FOR I=27359 TO 28127 STEP 256
3010 POKE I,57: NEXT I: REM MARK IN WHITE
3020 RETURN
3999 REM TURN OFF PAINTING IF IN PALLET AREA OR DISK ACCESS AREA
4000 IF X<251 AND Y<73 AND Y<78 THEN LET D=0
4010 IF INT (Y/8)>=8 THEN GO TO 4030
4020 IF X>=((192+8*INT (Y/8))) THEN LET D=0
4030 RETURN
4999 REM DETERMINE IF PAPER OR INK IS CHANGED
5000 LET X1=INT (X/4)/2: LET P=0
5010 IF X1=INT X1 THEN LET P=1: REM 0=PAPER,1=INK
5020 RETURN
8999 REM EXIT ROUTINE
9000 ON ERR RESET
9010 RANDOMIZE USR 23406: REM RETURN TO NORMAL VIDEO MODE
9020 STOP

Listing of the "HIRESC.C1" code used with the "PALLET" program.

```

5B00 F3      ENTR: DI      ;disable ints.
5B01 C5      PUSH BC      ;save registers
5B02 E5      PUSH HL
5B03 D5      PUSH DE
5B04 3E80    LD A,80      ;set up for XROM access
5B06 D3FF    OUT(FF),A
5B08 3E01    LD A,01      ;enable XROM
5B0A D3F4    OUT(F4),A
5B0C 3E02    LD A,02      ;hi-res color mode
5B0E CD8E0E  CALL 0E8E    ;CHNGVID in XROM
5B11 AF      XOR A
5B12 D3F4    OUT(F4),A      ;enable HOME ROM
5B14 3E09    LD A,09      ;set up for blue ink,blue paper
5B16 210060  LD HL,6000    ;start of display file 2
5B19 010018  LD BC,1800    ;6144 bytes in file
5B1C CD8A5B  CALL STOR     ;load attribute file
5B1F 3EF0    LD A,F0      ;ink pixel on left,paper on right
5B21 210040  LD HL,4000    ;start of display file 1
5B24 010018  LD BC,1800    ;6144 bytes in file
5B27 CD8A5B  CALL STOR     ;load primary display file
5B2A D1      POP DE      ;restore regs.
5B2B E1      POP HL
5B2C C1      POP BC
5B2D FB      EI
5B2E C9      RET
5B2F F3      RSTR: DI
5B30 C5      PUSH BC      ;save regs.
5B31 E5      PUSH HL
5B32 D5      PUSH DE
5B33 2118EF  LD HL,E18    ;start of temporary storage
5B36 110070  LD DE,7000    ;lower 1/3 of display file 2
5B39 010008  LD BC,0800    ;2048 bytes to be moved
5B3C EDB0    LDIR
5B3E 2118F7  LD HL,F718    ;original RAMTOP
5B41 22B25C  LD(5CB2),HL  ;store RAMTOP
5B44 18D9    JR,AA
-----
5B00 F3      ENTR: DI      ;disable ints.
5B01 C5      PUSH BC      ;save registers
5B02 E5      PUSH HL
5B03 D5      PUSH DE
5B04 3E80    LD A,80      ;set up for XROM access
5B06 D3FF    OUT(FF),A
5B08 3E01    LD A,01      ;enable XROM
5B0A D3F4    OUT(F4),A
5B0C 3E02    LD A,02      ;hi-res color mode
5B0E CD8E0E  CALL 0E8E    ;CHNGVID in XROM
5B11 AF      XOR A
5B12 D3F4    OUT(F4),A      ;enable HOME ROM
5B14 3E09    LD A,09      ;set up for blue ink,blue paper
5B16 210060  LD HL,6000    ;start of display file 2
5B19 010018  LD BC,1800    ;6144 bytes in file
5B1C CD8A5B  CALL STOR     ;load attribute file
5B1F 3EF0    LD A,F0      ;ink pixel on left,paper on right
5B21 210040  LD HL,4000    ;start of display file 1
5B24 010018  LD BC,1800    ;6144 bytes in file
5B27 CD8A5B  CALL STOR     ;load primary display file
5B2A D1      POP DE      ;restore regs.
5B2B E1      POP HL
5B2C C1      POP BC
5B2D FB      EI
5B2E C9      RET
5B2F F3      RSTR: DI
5B30 C5      PUSH BC      ;save regs.
5B31 E5      PUSH HL
5B32 D5      PUSH DE
5B33 2118EF  LD HL,E18    ;start of temporary storage
5B36 110070  LD DE,7000    ;lower 1/3 of display file 2
5B39 010008  LD BC,0800    ;2048 bytes to be moved
5B3C EDB0    LDIR
5B3E 2118F7  LD HL,F718    ;original RAMTOP
5B41 22B25C  LD(5CB2),HL  ;store RAMTOP
5B44 18D9    JR,AA
-----
5B44 18D9    JR,AA

```

Listing of "HIRESC.C1" (continued)

```

5B46 F3 ENBL: DI      :disable ints.
5B47 C5 PUSH BC
5B48 E5 PUSH HL
5B49 D5 PUSH DE
5B4A 210070 LD HL,7000
5B4D 117EF LD DE,E17
5B50 ED53B25C LD(5CB2),DE
5B54 13 INC DE
5B55 010008 LD BC,0800
5B58 EDB0 LDIR
5B5A 3E0F LD A,0F
5B5C 210070 LD HL,7000
5B5F 010008 LD BC,0800
5B62 CD8A5B CALL STOR
5B65 AF XOR A
5B66 210050 LD HL,5000
5B69 010008 LD BC,0800
5B6C 18B9 JR,CC
-----
5B46 F3 NORM: DI      :disable ints.
5B6F C5 PUSH BC
5B70 E5 PUSH HL
5B71 D5 PUSH DE
5B72 3E80 LD A,80
5B74 D3FF OUT(FF),A
5B76 3E01 LD A,01
5B78 D3F4 OUT(F4),A
5B7A AF XOR A
5B7B CD8E0E CALL OE8E
5B7E AF XOR A
5B7F D3F4 OUT(F4),A
5B81 189E JR,BB
-----
5B83 F3 PRIM: DI      :disable ints.
5B84 C5 PUSH BC
5B85 E5 PUSH HL
5B86 D5 PUSH DE
5B87 1896 JR,AA
-----
5B89 00 TEMP: NOP
5B8A 32895B STOR: LD(TEMP),A
5B8D 3A895B DD: LD A,(TEMP)
5B90 77 LD(HL),A
5B91 23 INC HL
5B92 0B DEC BC
5B93 78 LD A,B
5B94 B1 OR A,C
5B95 20F6 JR NZ,DD
5B97 C9 RET
-----
5B89 00 TEMP: NOP
5B8A 32895B STOR: LD(TEMP),A
5B8D 3A895B DD: LD A,(TEMP)
5B90 77 LD(HL),A
5B91 23 INC HL
5B92 0B DEC BC
5B93 78 LD A,B
5B94 B1 OR A,C
5B95 20F6 JR NZ,DD
5B97 C9 RET
:temporary storage
:store a byte
:store it in the display file
:point to next address
:bump counter
:see if done
:continue until done
:done

```

Listing of the "VARPRT.C1" code.

```

5B00 E5      STRT: PUSH HL          ; save regs.
5B01 D5      PUSH DE
5B02 F5      PUSH AF
5B03 2A4B5C  LD HL,(5C4B)
5B06 7E      AA: LD A,(HL)          ; get the character
5B07 FE80   CP A,80          ; see if end of VARS area
5B09 2825   JR Z,BB          ; if so, we are done
5B0B F5      PUSH AF          ; save the character
5B0C E61F   AND A,1F         ; mask off upper bits
5B0E C640   ADD A,40        ; convert to upper case ASCII
5B10 CDD75B CALL PRT0       ; send it to printer
5B13 F1      POP AF          ; get the char. back
5B14 E6E0   AND A,E0        ; save identifier bits
5B16 FE40   CP A,40        ; is it a string variable ?
5B18 281A   JR Z,CC        ; process it if so
5B1A FE60   CP A,60        ; is it a single letter numeric ?
5B1C 284D   JR Z,KK        ; process it if so
5B1E FE80   CP A,80        ; is it a numeric array ?
5B20 2819   JR Z,DD        ; process it if so
5B22 FEA0   CP A,A0        ; is it a long name numeric ?
5B24 2851   JR Z,LL        ; process it if so
5B26 FEC0   CP A,C0        ; is it a string array ?
5B28 280A   JR Z,CC        ; process it if so
5B2A FEE0   CP A,E0        ; is it a FOR/NEXT variable ?
5B2C 285D   JR Z,NN        ; process it if so
5B2E CF      RST 08         ; error return if not found
5B2F 01     5B2F 01
5B30 F1     BB: POP AF          ; restore regs.
5B31 D1     POP DE
5B32 E1     POP HL
5B33 C9     RET
5B34 F5     CC: PUSH AF          ; save identifier
5B35 3E24   LD A,24        ; "$" ASCII
5B37 CDD75B CALL PRT0       ; send it to printer
5B3A F1     POP AF          ; get identifier back
5B3B 23     DD: INC HL        ; get # of bytes to jump
5B3C 5E     LD E,(HL)
5B3D 23     INC HL
5B3E 56     LD D,(HL)
5B3F 19     ADD HL,DE     ; update address
5B40 23     INC HL        ; add 1
5B41 E5     PUSH HL       ; save new address
5B42 FE40   CP A,40        ; is it a string variable ?
5B44 2005   JR NZ,EE     ; jump if no match
5B46 21B05B LD HL,VARM    ; address of "VARIBLE" message
5B49 1817   JR,II       ; go to output routine
5B4B FEC0   EE: CP A,C0        ; is it a string array ?
5B4D 2005   JR NZ,FF     ; jump if not
5B4F 21BC5B LD HL,ARRM    ; address of "ARRAY" message
5B52 180E   JR,II       ; go to output routine

```

```

5B54 FE80      FF: CP A,80      !is it a numeric array ?
5B56 2802      JR Z,GG          !if so, send message
5B58 CF        RST 08          !error return if not found
5B59 DB        ;"??????" message
-----
5B5A 21BC5B    GG: LD HL,ARRM      !address of "ARRAY" message
5B5D CD965B    HH: CALL XSPA      !message out with extra space
5B60 1803      JR,JJ            !go to finish sequence
-----
5B62 CD9B5B    II: CALL MOUT      !output the message
5B65 CDA55B    JJ: CALL CRLF      !output a CR and a LF
5B68 E1        POP HL          !get new address back
5B69 189B      JR,AA            !go to next item in table
-----
5B6B 23        KK: INC HL       !update address to next var.
5B6C 23        INC HL
5B6D 23        INC HL
5B6E 23        INC HL
5B6F 23        INC HL
5B70 23        INC HL
5B71 E5        PUSH HL        !save new address
5B72 21B05B    LD HL,VARM        !address of "VARIABLE" message
5B75 18E6      JR,HH            !go to output routine
-----
5B77 23        LT: INC HL       !get next character
5B78 7E        LD A,(HL)
5B79 F5        PUSH AF        !save it
5B7A E67F      AND A,7F        !form ASCII character
5B7C FE5B      CP A,5B        !jump if upper case or numeric
5B7E 3802      JR C,MM        ;
5B80 E65F      AND A,5F        !convert to upper case
5B82 CDD75B    MM: CALL PRTO    !send it to printer
5B85 F1        POP AF        !get original character back
5B86 17        RLA           !test M.S.bit
5B87 30EE      JR NC,LT       !continue if not last char.
5B89 18E0      JR,KK         !update to next address
-----
5B8B 1E13      NN: LD E,13     !update address to next var.
5B8D 1600      LD D,00
5B8F 19        ADD HL,DE
5B90 E5        PUSH HL        !save new address
5B91 21C55B    LD HL,FORM      !address of "FOR/NEXT" message
5B94 18CC      JR,II         !output message and return
-----
5B96 3E20      XSPA: LD A,20   !spacecharacter
5B98 CDD75B    CALL PRTO      !send it to printer
5B9B 5E        MOUT: LD E,(HL) !get # of characters
5B9C 23        PP: INC HL     !point to next
5B9D 7E        LD A,(HL)     !get the character
5B9E CDD75B    CALL PRTO      !send it to printer
5BA1 1D        DEC E         !decrement counter
5BA2 20F8      JR NZ,PP      !continue if not done
5BA4 C9        RET          !done
-----

```

"VARPRT.C1" code (continued)

5BA5 3E0D CRTLF: LD A,0D ;CR character
5BA7 CDD75B CALL PRTO ;send it to printer
5BA8 3E0A LD A,0A ;linefeed character
5BAC CDD75B CALL PRTO ;send it to printer
5BAF C9 RET ;done

5BB0 0B VARM: ;11 chars. to be sent
" " ;space character
5BB1 20 " "
5BB2 20 " "
5BB3 20 " "
5BB4 56 "V"
5BB5 41 "A"
5BB6 52 "R"
5BB7 49 "I"
5BB8 41 "A"
5BB9 42 "B"
5BBA 4C "L"
5BBB 45 "E"

5BBC 08 ARRM: ;8 chars. to be sent
" " "
5BBD 20 " "
5BBE 20 " "
5BBF 20 " "
5BC0 41 "A"
5BC1 52 "R"
5BC2 52 "R"
5BC3 41 "A"
5BC4 59 "Y"

5BC5 11 FORN: ;17 chars. to be sent
" " "
5BC6 20 " "
5BC7 20 " "
5BC8 20 " "
5BC9 20 " "
5BCA 46 "F"
5BCB 4F "O"
5BCC 52 "R"
5BCD 2F "/"
5BCE 4E "N"
5BCF 45 "E"
5BD0 58 "X"
5BD1 54 "J"
5BD2 20 " "
5BD3 56 "V"
5BD4 41 "A"
5BD5 52 "R"
5BD6 2E " "

5BD7 F5 PRTO: PUSH AF ;save regs.
5BD8 C5 PUSH BC
5BD9 4F LD C,A ;save the char. in C
5BDA CD0920 QO: CALL 2009 ;see if BREAK is active
5BDB 3802 JR C,RR ;jump if not
5BDF CF RST 08 ;error type return
5BE0 14 ;"BREAK" message

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```

"VARPRT.C1" code (continued)
5BE1 DB7E RR: IN A,(7F)
5BE3 CB67 BIT 4,A
5BE5 20F3 JR NZ,00
5BE7 79 LD A,C
5BE8 D37E OUT(7F),A
5BEA DB7E IN A,(7F)
5BEC C1 POP BC
5BED F1 POP AF
5BEE C9 RET
:read printer port
:test BUSY bit
:loop back if busy
:get the char.
:send it to printer
:reset the port
:restore regs.
done

```


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THE HISTORY of QZX

Alex. F. Burr

What is QZX and why should any Sinclair computer user care about its history. The answer is that QZX is the longest running Sinclair newsletter in the United States. It has just started its tenth year under the current management. There a large number of Sinclair computer users which have not heard of it because it is a special purpose newsletter devoted to the uses of Sinclair computers in radio. Most of the subscribers are amateur radio operators and are often known by their Federal Communications Commission issued call letters. Nevertheless quite a few readers are not licensed but have an interest in the technical articles published. The readers come from all over the United States and, at one time or another, from about 20 different countries.

QZX was started by K2MI, Marty Irons from New Jersey. He started the magazine as a very personal service to the ham radio computer community, so some of the early history is a result of his actions.

An article about a potent, 12-ounce computer from England that appeared in Popular Science in 1980 absolutely fascinated him, so he sent in his \$200 for a Sinclair ZX80 the next day. When it came, he was very impressed by the way it handled the syntax of BASIC programs. He was as happy with it as the gigantic IBM mainframe he programmed at Western Union. As a ham, he just had to find out if it could be applied to ham projects, so he asked QST, the national magazine for radio amateurs, to print an "I'd like to get in touch with" article to see which other hams were thinking along the same lines.

The initial response was not overwhelming, but those who did write and/or call were very enthusiastic. Some even sent in BASIC programs and technical data with their first letter. Nobody offered to put out a newsletter, so he ran with the ball. Thus QZX was born. The name came from the radio operating background of the readers. Abbreviations starting with Q have special meanings for hams so it was natural to add the initials of the first computer to Q to get a title for the newsletter. At that time Marty could not imagine that so many hams would own Sinclairs within 2 years! Friendships among the little group of users grew quickly. W9CQD started a 20-meter net, or scheduled time for the geographically dispersed group of radio operators to all listen on a specific frequency. An interesting phenomenon then appeared, which was called the 14-day reflex. About two weeks after each issue of QZX was mailed, letters would pour in with suggested improvements for many of the BASIC programs published. The hams were trying other's ideas, finding better ways to do things, then sharing their improvements by sending them for publication in QZX.

Marty could not begin to handle all of them, and eventually had to call for volunteers to test the programs coming in through the mail. That worked exceptionally well. A user's group called "SARUG" was started in England by GAINP, and he handled the rest of the world while QZX responded to hams in the U. S.

The QZX format improved with the use of a laser printer. Hams were by then keying their transmitters, decoding incoming CW, printing antenna pointings, and many of the things that hams now do routinely with their IBM-compatible PCs. But these early readers were pioneers, they did it before the IBM PC was on the market. Eventually the volume of mail and phone calls swamped Marty. K2MI was putting in about 4 to 6 hours a day on the project in addition to working full-time. He rarely saw his wife and 3 kids. When a brief article about QZX appeared in QST in the summer of 1982, his mail suddenly jumped to about 40-50 pieces a day. Reluctantly he had to give it up, as there was no way he could satisfy the demand for a quality newsletter. For him it was a very exciting time, making new friends and helping others help others. The rate of progress was amazing!

Marty still drags out a Times 1000 and hooks it up once in a while just for sentimental reasons. But QZX is still alive after 10 more years and that some of the original contributors are still sending in articles.

Marty went \$700 in the hole and rarely saw his family for over a year, but he still has very fond memories of the early QZX days of 1981-1982. The early days of QZX were truly exciting, with events such as the phone call from Italy saying that a ham in England had shipped him a Sinclair printer (they were considered a fire hazard and not approved for sale in this country).

In 1982 it was that QST article, mentioned above, offering a free subscription to the new Sinclair newsletter, QZX, which attracted the attention of K5XY, Alex Burr. He too could not resist the bargain that the Sinclair computer offered, but he first obtained a ZX81 kit. He was already familiar with the Sinclair products because he had been in Scotland when Sinclair was just hitting his stride with inexpensive HI-FI audio kits. The kit went together quickly and a long association with Sinclair computers began.

When K2MI announced that he was looking for somebody else to take over QZX, W4GHV, Bo Barry, was recruited and negotiations for a change in sponsorship were stated. Unfortunately they failed. K2MI thought that a commercial company starting up in Arizona offered more stability for QZX. Unfortunately that company in turn failed, so QZX wound up in Las Cruces, NM with K5XY as publisher and W4GHV as editor. Soon K5FEZ, Ron Suggs, was recruited as technical editor.

The original idea was that the editors would do all the work and that K5XY would just write an occasional letter. Unfortunately that was not to be. K5FEZ was a graduate student at New Mexico State University and had the

WAGHV put together QZX for five years, writing articles and organizing the material submitted by QZX readers. But he too found that it took quite a bit of time, so one day he up and left town. (The fact that he received a job promotion, a big salary increase, and a location in his original home state may have had something to do with the move.) In any case K5XY has been running QZX ever since, with the help of submissions from QZX readers and the newsletters of other Sinclair groups.

K2MI spent much of his own money to get QZX started. With the change in management, QZX was no longer free but had a subscription charge of \$12.00. It also accepted paid advertising to help support the printing and mailing costs. It has always been self-supporting (if you do not count the labor of putting it out).

In 1988 postage increases forced the subscription rate up to \$15.00. A subsequent postal increase caused a minor crisis. There was just no way that one could really justify another subscription increase, so a postage fund was created to which a surprisingly large number of readers have been making a annual contribution. This fund, along with a little advertising revenue, has permitted QZX to pay its own way on the average.

These postal increases have had a great effect on the foreign readers. At one time there were readers in over 20 countries. QZX even had a distributor in Sweden who arranged for subscriptions from European hams. But the cost of sending the issues to other countries is now so high that few can afford it.

It is interesting to note that one of the costs of foreign subscriptions is replacing the issues lost in the mail. Hams in the US tend to complain about our postal service. They should look at some of the other postal services in the world. QZX has been told by some readers to send the issues in plain envelopes and to always use plain non-commemorative stamps so that collectors will not be tempted to waylay the issue. US hams have only rarely asked for a replacement for an issue lost in the mail here.

Advertising has always helped with the expenses of QZX. At first it was easy to get companies to advertise, but the buying habits of hams and the specialized nature of the Sinclair community does not make it obvious that advertising in QZX is a cost effective measure. Nevertheless some companies have been major contributors.

One of these is T & C Services from Buffalo, NY. They hold the record for the longest continuous series of ads in any US Sinclair related publication. One day they just disappeared, never to be heard from again (but not leaving behind any unfilled orders, something which cannot be said for some other Sinclair companies.) There is sure to be an interesting story behind this company, but it is not known.

unreasonable idea that the first order of business was to study enough to graduate, so he dropped out after a short time.

Thomas B. Woods is another Sinclair entrepreneur who ran a long series of ads. The current record holder is RMG Enterprises, who sell a variety of Sinclair related products. (See their ad in this issue.)

The other advertising feature is the Unclassified ads. It had been hoped that this would be an inexpensive choice for companies to make sure that their offerings were always in front of readers, but this hope has not been realized. The biggest user of this section has been WA4BQE. Ed has used the unclassifieds to get information about a number of types of Sinclair equipment.

QZX would not be what it is without contributions from its readers. Some have sent in outstanding amounts of material.

One of the first major authors was KA2HLO, Kraig Pritts. He created a whole series of ham related programs which he published in QZX and later sold on tapes.

A major series of articles by Don Lamen, in part reprinted from other publications, was run starting in the October 1989 issue. Don was not a ham but his investigation of the Sinclair Logic Chip (SLC) in the ZX81 was an electronic detective effort worthy of any ham.

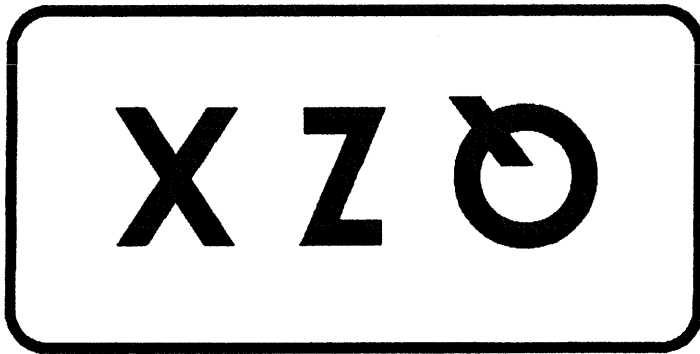
Few will forget the articles by LU8MAD. Guillermo is the most prolific foreign author and has described some of the most sophisticated uses of the Sinclair computers in ham applications. He describes one case where a commercial power company was using ZX81 computers to help control their power lines. His son even contributed some cartoons to a few issues.

The most versatile author is WA6DLI, Bob Howard. He has written about several different Sinclair computers and contributed several interesting articles related to satellites.

QZX is the longest running Sinclair newsletter in the world. It may even be the Sinclair newsletter with the largest subscription base. It is the only Sinclair SARUG newsletter mentioned near the beginning of this article has ceased publication some time ago.)

QZX grew rapidly at the start; but, with the disappearance of new Sinclair computers, it was inevitable that that growth would cease. At one time there were substantial savings on postage available from third class postage. It once was cheaper to print the issues rather than Xerox them. But those economies of scale are no longer available. New subscriptions have not entirely ceased, but they are few and far between. The renewal rate is higher than anybody has a right to expect, but in most months one or two readers drop from the list, so it is inevitable that the reader list shrink. However, some have renewed into the year 1994 and QZX will be published as long as there are readers.

The latest effort has been the development of a complete index listing all the articles published under the current management. There are over five hundred articles all sorted by title, author, and subject.



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ZX80; Micro-Ace; ZX81; TS1000, 1500, and 2068; QL; 788

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THE INVENTION OF DISK DRIVES: A
SUCCESS STORY FOR IBM

by BILL HARMER

If you look at the floppy disk drive of your computer, you probably have to strain your imagination to remember how it was with computers before disk drives were invented. In those days, electronic memory was expensive and most pre-1970 computers relied on cheaper, bulkier forms of memory, even solid magnets (core storage) for RAM and even before magnetic drives, punched paper tape and the punched cards the size of an old US dollar bill were tried. Such media needed big buildings for permanent storage of programs and data. Unfortunately also punched paper or cardboard devices were very slow and due to their mechanical nature, feelers, wheels and their momentum and size, only capable of a certain speed of being pushed around before they became inaccurate or floated between binary 1 and zero, not touching anything. In fact, the main progress of electronic computers has been to save on the size of the physical objects used to represent binary 1 and 0, from the mechanical calculators' one-inch diameter wheels down to tiny bunches of electrons that respond to a push with the speed of light, and for which a push may take only a tiny bit of energy. Making a mechanical computer is possible, but the size of it and energy to push the wheels around even slowly, would make it skyscraper-sized to do even the simplest work. When mechanical devices are governed by limits of inertia (momentum) = weight X speed (physicists use the more precisely framed mass and velocity, mv, if you are going to be looking this up in a reference book) then reducing the weight by reducing the size of each part of a computer used to represent a binary bit is obviously the way to go, and the

way computer science has gone. The complexity of the logical and math problems (even in addition) that computers need to be used to solve to be useful, means many binary bits and many, many parts used to physically represent them, too many for mechanical computers to be useful except in a pinch, when nothing else was available. As for using magnetic storage on tape instead of mechanical storage on punched paper tape or punched cards, the same sort of efficiencies could be had by magnetizing a very tiny area on a ferric oxide coating on plastic tape as opposed to making a rather large hole in paper or cardboard.

It seems we take computers so much for granted now that we forget that they are purely physical ways of working out arithmetic and other information and logical problems, much the way ancient civilization's accountants used to, for example, divide 121 apple baskets into three by taking 121 beans and splitting them into three equal sized groups, and then a simple count of one group could tell how many apple baskets would be one third (and how many would be left over). This is simply a case of letting small, physical objects represent numbers to be divided, added, subtracted, compared, etc. Computers just use electrons and magnetizable areas on a magnetic tape or disk to physically represent numbers rather than beans, but the principle is the same. So much for bean counters.

Early tape drives for computers of the 1950's and 1960's did put a lot of binary data in a small space, the commonest standard being to use 8 parallel tracks to save on the length of tape needed to store data of a large block. But if you look at an old movie of a computer of this time, the reels of tape are always spinning as the computer

tries to find chunks of data on different spots on the tape. So the speed problem became critical as computers got faster and needed to look things up on the tape faster. The mechanisms became a speed bottleneck.

An engineer from IBM had a better idea after taking a lunch break at a diner that had a juke box. He reasoned, if so much data was needed to be looked up at unpredictable (mathematically speaking, random from the analytical model used to think of the problem) locations on the tape, perhaps a tape was not the best shape of magnetic medium to use. A disk, like a phonograph record would allow one to get to any track on it without nearly as much physical movement he reasoned, and so the disk drive was born. It was a matter of, as with a long playing phonograph record, moving to the right track, rather than spinning a reel of tape, many feet along the thread of data written on it, that saved physical movement to speed things up. A genius sort of inspiration! Of course, a phonograph record has its track in a spiral form so the music will not be interrupted as it would be if the tracks were all circles, closing in on themselves, but the computer, very interrupt tolerant did not need this and so the computer disks used non-overlapping circles one inside the other as the tracks to store the data magnetically on, and in one single line of binary bits. A bit stream, when seen electronically at the electronic circuits that feed the electro-mechanical part of the disk drive's data handling pictures it.

So IBM put its first disk drive on the market in 1957. It was a hard disk, with a removable stacked disk unit, magnetic coating on aluminum base disks, and it was about waist high with a plastic cover to keep out dust

T/SNUG AND ZXIR OLIVE ALIVE!

ZXIR OLIVE ALIVE is the publication of T/SNUG which is an organization trying to keep the Timex/Sinclair community going by publishing Timex related material. Ads are free so long as they are Timex/Sinclair related. Sell your surplus equipment, list your wanted items, ask for help or whatever. T/SNUG does not have a library as such but there are software librarians and Don Lambert has an extensive file of User Group's software libraries on disk in plus ZX81 Larken 5.25 disks, I am sorry but no QL disks. The quarterly newsletter is available for a donation of \$10.00 per year. Please send check or money order to: Abed Kahale ZXIR OLIVE ALIVE! Newsletter 335 W Newport Rd Hoffman Estates IL 60195-3106
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I then looked at track 0 of a good disk and kept stepping and finally I found the file name and while it was crazy appearing, the track numbers of the tracks the files were stored on. (The track numbers start with 129 for 1, 130 for track 2 and so on). The good directory looked like the track map given in the Larken manual. What did the corrupt track map look like? Imagine eating in a dining room served by a half dozen or so waiters from several different kitchens and they were running like mad. You'd ordered and your order was coming but several waiters collided and orders slide from tray to tray and some were lost to the floor. The waiters just keep going and delivered the stuff on the trays regardless of what was ordered. That is the way the corrupted disk track 0 looked.

The program LOADS the designated track into the disk I/F BUFFER RAM and then lists the addresses and the data on the screen - but it is slow. The address given is the buffer address not the disk address. And by pressing CONT you advance one screen further into the addresses - and with a ZX chip that is a lot of screens - except that I did not have to go that far into the addresses. I took a look at the contents of track 0 of the corrupted disk. And it made no sense at all.

A check of the Larken manual gave some POKES to examine the contents of a track - but not explanation of how to do it. I have Bill Harmer's 130 page+ Unofficial Larken ZX81 Disk Manual and he explained it so that I could see that it was practical to do. But he also mentioned a Public Domain program DOSDOC.B1 that had a slower way of doing it (but required no lengthy explanation of how to do it).

This is on the Larken ZX81 disk system and so far as I know there is not a program to automatically rewrite a crashed track 0 - which was what seemed to be the problem - at least attempts to read the directory gave CRC ER. Having just recently gotten a ZX81 with 64K on board the computer (no more crashes due to wobbly ram packs) I was working with the two drive Larken interface when I had another disk seemingly get corrupted. This time I was copying it and it was write protected.

One of the worst things that can happen is to have a disk become corrupt - especially if it is the only copy you have and the cassette that you had LOADED the original program into the computer will not load again. I had a printout but a six foot LIST on a ZX81/TS1000 is not one that you would enjoy re-entering into the computer. The disk became corrupt when the system was jarred while SAVING another program on the disk. I had made a printout of the directory and there were 7 tracks of data in the program.

by Donald S. Lambert

RESURRECTING A CRASHED DIRECTORY
ON THE ZX81 LARKEN.

I next looked at track 1 of the corrupted disk and the file name was there and I knew what had been used and made notes. I then LOADED track 0 into the buffer and POKED in at address 12352 (which is the first address in the buffer) 255 and at 12353 POKED in byte 0 and 12354,200. The rest seemed unimportant to me so I stepped to the address 12456, and put in 255 which is the pointer to the first character in the file name then starting with address 12457 I input the character codes for the file name (total maximum of 9 pokes) then an end of the name file and then the following the names addresses address number and the POKE 253 and then the addresses and the track numbers where the program is stored. The numbering for the tracks is weird but starting with 129 it increases by one for each track as you progress through the file names. Then immediately after the last track number you POKE in byte 249 for end of track pointer.

Now a little bit of the nitty gritty that I understand. Every track starts with byte 255 and on track 0 it again appears as the 168th address counting disk addresses from the first address on track 0. In fact byte 255 is the byte that points to the file name and will appear for each file name in track 0. To restore track 0 I had to punch in some 23 pokes and then three key punches SAVED the poked track back to the disk. And upon trying the results I found the directory was correct and that the program also LOADED correctly. Of course I made some extra copies of the program.

Incidentally, I cleaned the contacts with CATUG's suggestion with mineral oil and I did get the disk that I thought had crashed and was write protected to LOAD. I also had noticed that if the computer and interface seem to be reluctant to LOAD a program, removing power for a moment from the entire system often enabled me to load the program.

Even if you only have a single disk drive version of LDOS the program of DOSDOC.B1 has some features that are of great help. If you would like to have a copy send me a FORMATED disk with return postage and I will send you a copy. There are eleven disks of Public Domain software available for the ZX81 Larken interface, all on double sided 5.25 disks. 0/0

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==== LAYOUT ====

The LAYOUT program will load a single sheet text file and display it on a scale outline of an 8 1/2" x 11" sheet of paper on the monitor screen. After the file is loaded, you can move it on the scale sheet of paper, set the desired margins, select your choice of fonts, and print the file.

The following figure numbers depict what is portrayed in each figure of the LAYOUT program and the related commands and choices.

Figure 1 Displays a scale blank sheet of paper and asks for inputs of device (fip, mdv, etc.) number and file name.

Figure 2 Displays the input file on the scale blank sheet of paper with zero top and left margins. Information is given on how to move margins, spaces in each margin, and which key to press when text location is satisfactory. The file name, total lines, and maximum characters per line are also shown.

Figure 3 Displays the text properly located on the scale sheet of paper and reminds you to turn the printer ON. You are also given a list of fonts to select from. The selection is highlighted by a change in the paper and ink color on the first letter. You can change the font selection or accept it. If accepted, printing starts.

Figure 4 When printing is completed, the same text page is displayed and you may choose to change the fonts, enter a new file, repeat printing of the current file, or quit.

While the text is being printed, the word "PRINTING" will be displayed on the screen.

This LAYOUT program has been found very useful in the positioning of letters and memos. You can type your letter and not be concerned if the margins are suitable. A brief processing of your letter on the LAYOUT program will provide margins to your satisfaction.

```

10 WINDOW 512,206,0,0: PAPER 0: BORDER 1,6: CLS
20 OPEN #5,con_250x100a4x2: PAPER #5,0: INK #5,6: CLS #5
30 OPEN #6,con_250x100a4x104: PAPER #6,0: INK #6,6: CLS #6
40 OPEN #7,con_161x134a320x16: PAPER #7,6: INK #7,0: CLS #7
50 OPEN #9,con_252x45a256x160: PAPER #9,0: INK #9,6: CLS #9
60 AT #5,4,5: INPUT #5,"Enter device: ";dev$
65 IF dev$="flp1" OR dev$="flp2" OR dev$="mdv1" OR dev$="mdv2" THEN GO T
O 70: ELSE BEEP 2000,45: AT #5,4,5: PRINT #5,"
": GO TO 60
70 AT #5,5,5: INPUT #5,"Enter file name: ";fil$
80 LET c=0: LET m=0: LET lm=0: LET rm=85: LET um=0: LET bm=66: LET l=99.
5
90 OPEN #4, dev$&"_"&fil$
110 REPEAT loop
115 IF EOF(#4) THEN EXIT loop
120 INPUT#4,a$: LET s=0: LET f=1: LET c=c+1
125 LET t=LEN(a$): IF t>m THEN LET m=t
130 FOR x=1 TO LEN(a$)
140 IF CODE(a$(x))-32 THEN INK #7,0: ELSE INK#7,6
150 LINE#7,s,1 TO f,1
160 LET s=s+.85: LET f=f+.85
170 END FOR x: LET l=l-1.51515
190 END REPEAT loop: CLOSE #4
200 AT #9,0,17: STRIP #9,6: INK #9,0: PRINT #9;" ";fil$;" "
205 STRIP #9,0: INK #9,6
210 AT #9,1,17: PRINT #9,c;" Lines total"
220 AT #9,2,17: PRINT #9;m;" Char/Line/Max"
230 AT #1,2,50: PRINT #1,um: AT #1,14,50: PRINT #1,bm-(c-um)
240 AT #1,0,53: PRINT #1,lm: AT #1,0,78: PRINT #1,rm-(m+lm)
245 AT #5,4,5: PRINT #5, "- Margins indicated on chart"
250 AT #5,5,5: PRINT #5, "- Move text by arrow keys
260 AT #5,6,5: PRINT #5, "- When location OK, push <F1>"
300 REPEAT loop
310 z = CODE(INKEY$(-1)): SELECT ON z
320 =208: IF um = 0 THEN SCROLL 0: ELSE : SCROLL #7,-2:
LET um = um-1: LET bm = bm+1: blink
330 =216: IF bm = 0 THEN SCROLL 0: ELSE : SCROLL #7,2:
LET um = um+1: LET bm = 66-(c+um): blink
340 =200: IF rm=0 THEN PAN 0: ELSE : PAN #7,2:LET lm=lm+1:
LET rm=85-(lm+m): blank
350 =192: IF lm=0 THEN PAN 0: ELSE : PAN #7,-2:LET lm=lm-1:
LET rm=rm+1: blank
360 =232: CLS #5
362 AT #5,4,5: PRINT #5,'Is printer "ON" ?'
364 AT #5,5,5: PRINT #5,'Select characters listed below'
366 AT #6,1,5: PRINT #6,'<B>old characters'
368 AT #6,2,5: PRINT #6,'<D>ouble strike'
370 AT #6,3,5: PRINT #6,'<E>lite characters'
380 AT #6,4,5: PRINT #6,'<H>igh quality'
382 AT #6,5,5: PRINT #6,'<I>talic characters'
384 AT #6,6,5: PRINT #6,'<P>roportional'
386 AT #6,8,5: PRINT #6,'Selection OK ? (y/n)'

```

```

400 OPEN #3,ser1: PRINT #3,CHR$(27);"1";CHR$(1m);
410 PRINT #3,CHR$(27);"E";
415 AT #6,1,5: f11p: PRINT #6;"<B>": f10p
420 PRINT #3,CHR$(27);"G";
425 AT #6,2,5: f11p: PRINT #6;"<D>": f10p
430 PRINT #3,CHR$(27);"<M>";
435 AT #6,3,5: f11p: PRINT #6;"<E>": f10p
440 PRINT #3,CHR$(27);"x1";
445 AT #6,4,5: f11p: PRINT #6;"<H>": f10p
450 PRINT #3,CHR$(27);"4";
455 AT #6,5,5: f11p: PRINT #6;"<I>": f10p
460 PRINT #3,CHR$(27);"p1";
465 AT #6,6,5: f11p: PRINT #6;"<P>": f10p
470 PRINT #3,CHR$(27);"@"&CHR$(24);
501 CLS #6: GO TO 366
510 CLS #5: AT #6,4,16: PRINT #6;"PRINTING"
511 FOR lf = 0 TO um-1: PRINT #3: END FOR lf: CLOSE #3
515 COPY N dev$&"&f11$ TO ser1
516 OPEN #3,ser: FOR lf = 0 TO 65-(um+c): PRINT #3: END FOR lf
517 CLOSE #3: PAUSE 300: CLS #5: CLS #6
520 AT #5,3,5: PRINT #5;"<C>change characters"
525 AT #5,4,5: PRINT #5;"<A>other file"
530 AT #5,5,5: PRINT #5;"<Q>ut"
535 AT #5,6,5: PRINT #5;"<R>epeat"
540 CLS #5: CLS #6: GO TO 700
545 =65,97: CLS: OPEN #3,ser: PRINT #3,CHR$(27)&"@"&CHR$(24);: CLOSE
#3: RUN
550 =81,113: WINDOW #2,256,202,0,0: PAPER #2,6: INK #2,2
555 BORDER 1,6,0: CLS: WINDOW 256,202,256,0: PAPER 2
560 INK 6: BORDER 1,6,0: CLS: NEW
565 =82,114: AT #6,4,16: PRINT #6;"PRINTING": OPEN #3,ser: GO TO 511
600 END SELECT: END REPEAT loop
700 OPEN #3,ser
710 PRINT #3,CHR$(27)&"F"&CHR$(27)&"H"&CHR$(27)&"P"
720 PRINT #3,CHR$(27)&"x0"&CHR$(27)&"5"&CHR$(27)&"p0";
730 GO TO 364
800 DEFINE PROCEDURE blank
805 AT 2,50: PRINT " " : AT 14, 50: PRINT " "
810 AT 2,50: PRINT um: AT 14,50: PRINT bm
815 END DEFINE
830 DEFINE PROCEDURE blank
835 AT 0,53: PRINT " " : AT 0,78: PRINT " "
840 AT 0,53: PRINT 1m: AT 0,78: PRINT rm
845 END DEFINE
850 DEFINE PROCEDURE f11p
855 STRIP #6,6: INK #6,0
860 END DEFINE
865 DEFINE PROCEDURE f10p
870 STRIP #6,0: INK #6,6
875 END DEFINE

```

Figure 2.

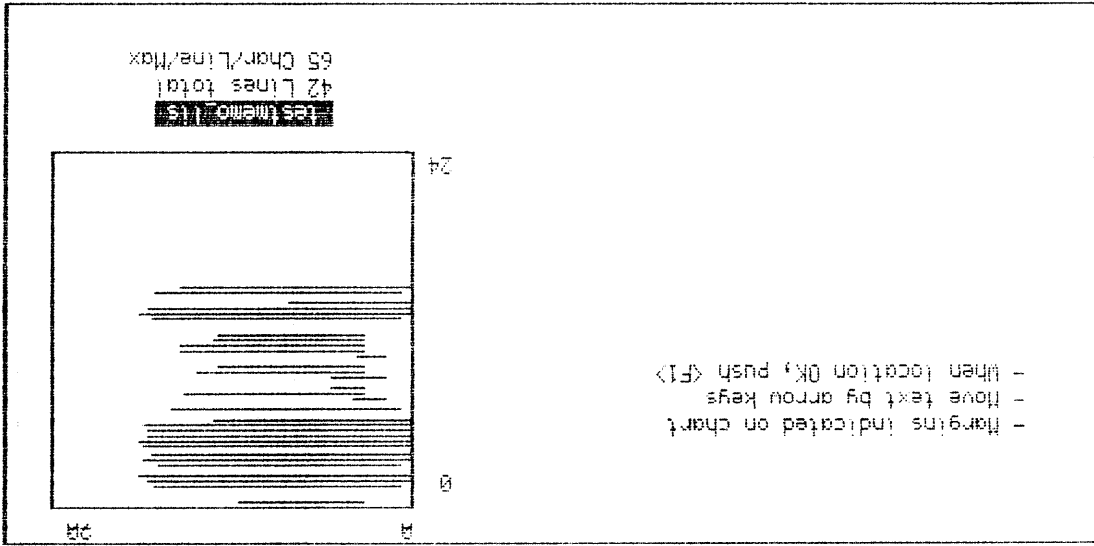


Figure 1.

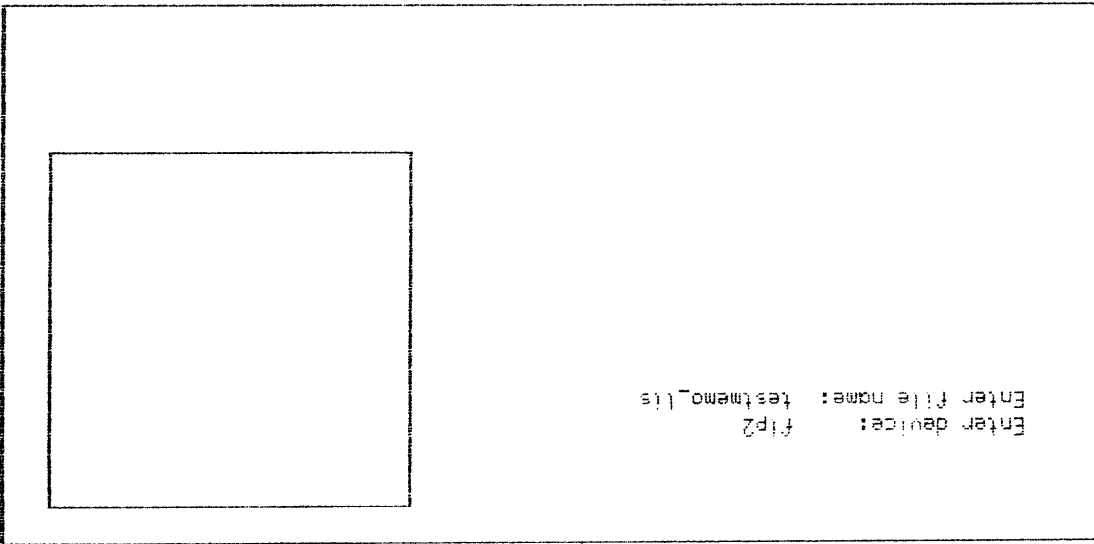


Figure 4.

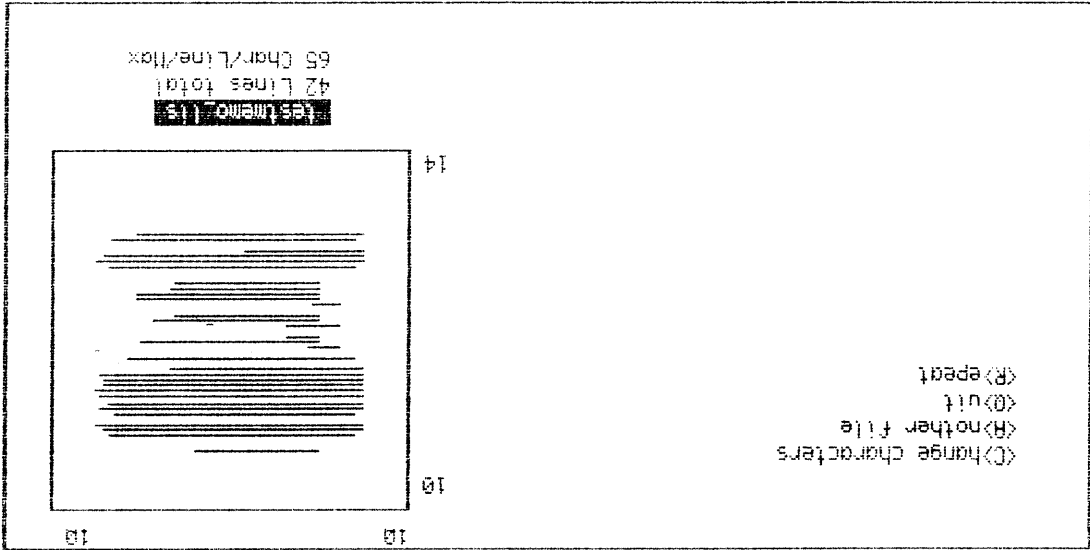
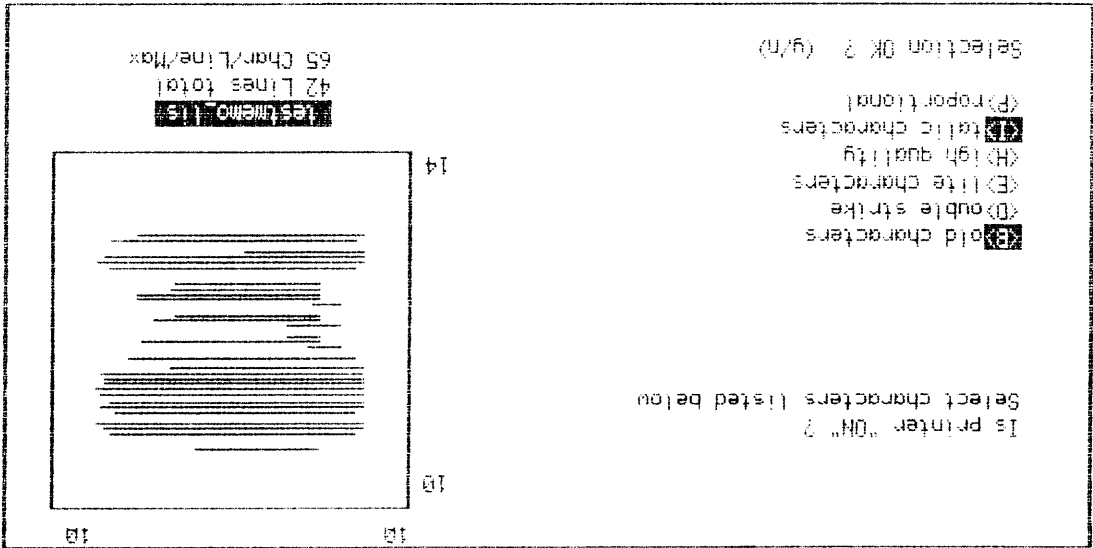


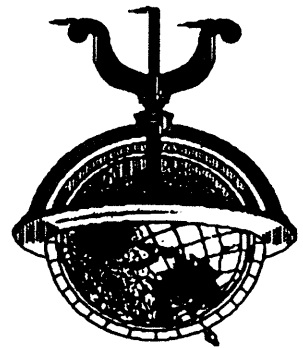
Figure 3.



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MENU-DRIVEN PRINTER_DAT SELECTION

Bob Hartung, 2416 N. County Line Road E., Hometown, IN 46748

```

75 PRINT \ " PROGRAM MENU (BREAK & AUTO 1
, 1 to edit) "
80 PRINT #0: " Key: A-Z for other menus
0-9 or a-z to LOAD file F1 to select
new printer_dat & to set: " , , , , " B:
Last menu "
85 REMARK Omit line 165 & save copy of 1
lines 1-250 as Bboot. Revise line 80 pro
mpt for Cboot . . . .
165 IF s1c=232 THEN pdat
260 DEFINE PROCEDURE pdat
270 MODE 4: DIM d$(36,18): d$(1)="LASTUS
ed"
280 d$(2)="CITOH"
290 d$(3)="KXpa11fonts"
300 d$(4)="KXpprestige"
310 d$(5)="KXpcourier"
320 d$(6)="KXpsansserf"
330 d$(7)="KXpboldps"
340 d$(8)="QLprinter"
350 d$(9)="EPSON510"
360 d$(10)="": REMARK Define empty d$(1
1) through d$(36) in lines 370-620 as in
line 360
630 FOR j=1 TO 36
640 AT j-1-18*(j>18),20*(j>18): PRINT CH
R$(j+47+39*(j>10)): "=";d$(j)
650 END FOR j
660 PRINT \ " PRINTER_DAT MENU"
670 CLS #0: PRINT #0: " KEY: 0-9 or a-z
to select printer_dat to be activated (!
n both f1p1_ and ram1_) "\ use AUTO 270,
10 to edit menu display titles. DO NOT
append_dat to menu titles. "\ "Not Foun
d" error if _dat used in menu titles or
if misspelled. Key ESC to quit."
680 s1c=CODE(INKEY$): IF s1c=0 THEN GO T
O 680
690 IF s1c=27 THEN MODE 4: GO TO 50
700 s1c=s1c-47-39*(s1c>57)
710 IF s1c < 0 OR s1c > 36 THEN GO TO 63
0
720 IF d$(s1c)=" " THEN GO TO 630
725 REMARK For EXCHANGE, replace printer
_dat in line 730 with xchange_dat or re-
define as line 735 for both options
730 DELETE f1p1_printer_dat: COPY "f1p1_
" & d$(s1c) & "_dat" TO f1p1_printer_dat
: DELETE ram1_printer_dat: COPY "f1p1_
" & d$(s1c) & "_dat" TO ram1_printer_dat
740 DELETE f1p1_LASTused_dat: COPY f1p1_
printer_dat TO f1p1_LASTused_dat
750 MODE 4: GO TO 50
760 END DEFINE pdat

```

Some may have noted that a large part of the things I have written for UPDATE have been to enable single-key selection of programs or other functions from menus. From the first time I set hands on a computer (a ZX-80) I have had the notion that the user shouldn't have to do what the computer may easily be programmed to do. Not all programs I have seem to have been written with this in mind.

A case in point is the need to run the INSTALL_BAS program every time a new set of printer data is needed for the PSION suite of four or EXCHANGE. I have tried several other wordprocessors and spread-sheet programs for the QL as well as the PC and still prefer to use QULL and ABACUS for most purposes. I would add my voice to those asking if someone might do an update on these programs while still retaining their best features.

The routine listed below allows the selection of any pre-defined printer data before loading one of the PSION programs. It is the result of my friend, Kenton Garrett, asking me to write a routine that would select different sets of printer data for each of the printers he uses with his QL system. It is written so it may be merged with my BOOTMENU program as given on page 22 of the Oct. 92 UPDATE. If you do not have that issue please enclose a SASE when you request me to send you a copy of the listing.

If you already have defined printer_dat on separate disks you may simply put the disk with the completed BOOT routine in f1p2, the printer_dat disk in f1p1, and enter COPY f1p1_printer_dat TO f1p2_newname_dat. "Newname" is the title as entered in respective pdat definitions. Note that the _dat extension is supplied by the menu routine and so is included in the disk file names but not in the menu titles.

To create new printer_dat files, LRUN INSTALL_BAS from f1p1 and install to f1p2, the drive your BOOT disk is in. After installing with F5, key CTRL SPACE to break into the program. Use COPY f1p2_printer_dat TO f1p2_newname_dat. Enter RUN to re-start INSTALL_BAS and repeat the above for each set of data. To use with EXCHANGE see the line 725 REMARK.

Hello?!, yet another little tip for the QL user.

One of the things my other Sinclair based computers taught me is that there is a certain sense of neatness and effective usage when you utilize a simple straight forward approach to get things done quickly.

With those ingrained habits, I still look for ways to do economical programming even with my QL.

I had a chance to evaluate "Lightning SF for the Gold Card" recently.

After using the Boot and Configure files of Lightning, my new disk looked like this:

```
1362/1440 sectors
Ing_GRAF_ext
Ing_MATH_ext
BOOT
Ing_TEXT_ext
```

and the boot file created by the configure program:

```
1 REMARK - CONFIGURED LIGHTNING BOOT FILE 2 REMARK DO NOT use
with other configured LIGHTNING systems 3 source$='FLP2', 4
s=RESPR(33792) 5 LBYTES source$&'Ing_TEXT_ext',s:CALL s 6 LBYTES
source$&'Ing_GRAF_ext',s+22360:CALL s+22360 7 LBYTES
source$&'Ing_MATH_ext',s+26676:CALL s+26676 10 NEW
```

I ended up with 4 files, 3 separate parts of Lightning, and a boot program that loads and then calls each segment.

Is there is a better way? Line 4 of the boot program reserves 33792 bytes for the Lightning files to be loaded into.

This is a single continuous memory area.

I loaded the "BOOT" program and deleted line 10. I then RAN the program. At the cursor prompt I then typed PRINT s. That is the start address of the code where "Lightning" resides.

I then typed SBYTES flp1_ing_code s,33792.

I then did a simple rewrite of the BOOT program to do a single LOAD of code that left me with the following DIR of the disk :

```
1362/1440 sectors boot Ing_code
```

And the new BOOT program:

```
3 dv$='flp2', : s=RESPR(33792) 5 LBYTES dv$&'Ing_code',s:CALL
s 6 CALL s + 22360 : CALL s + 26676
```

The calls to each of the selected parts of "Lightning" remained the same, but this way only 2 files are loaded. This is a step and time saving technique. It even cuts down on the daily wear and tear on disk drives.

This works on any program that is divided into parts that I have run into. I hope this is of help to you!

Editors Note: This technique applies to other programs as well and does not require S. E. versions or a Gold Card.

by Paul Holmgren

LIGHTNING S.E. and BOOT

SINCLAIR WORLD GAZETTE

World News & Information 1.0

SINCLAIR USER MAGAZINE

Many Sinclair owners around the world are still not aware that Sinclair User Magazine is still in publication. Its reader focus is young first time computer users and game players. The magazine is published monthly and runs about forty pages per issue. But, its most intriguing feature is that each issue comes with a cassette attached to it containing "The Great 8".

The Great 8 consists of at least eight programs ranging from games to music to utilities. The August and September issues included ICON GRAPH 48K - STARSHIP QUEST, NIGHT RUN - CEASE FIRE II and the SPRINTER hacking program.

In the United States and Canada, the best way to get a hold of Sinclair User is with a subscription. The cost is £27 and can be paid for with VISA (the author's choice) MasterCard, Diners Club as well as a bank check in £s.

For a subscription, contact:

emap images, Ltd,
Consumer Subscriptions
P.O. Box 500
Leicester, LE99 0AA

Phone: (0858) 410510

FAX: (0858) 434190

Keep an eye out for more tidbits regarding Sinclair User Magazine and other Timex/Sinclair and Sinclair publications from around the world.

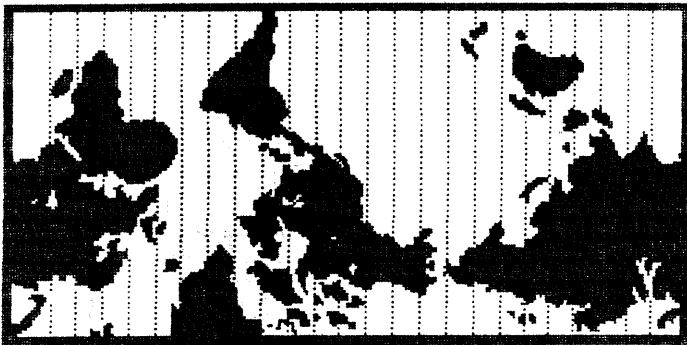
If you have any information about Sinclair publications, please send their address to:

SMG
1284 Brushwood Ave
Cincinnati, Ohio
45224

Please send a LSASE for replies!

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THE HOBBIT ARRIVES IN THE UK!



What is "The Hobbit" you say? Well, it not only is the latest and greatest import from Russia (aka the former Soviet Union), but it is also the latest Sinclair Spectrum Clone!

Sinclair User Magazine featured a full page article on The Hobbit in its August 1992 issue. The Hobbit is a fully compatible 48K Spectrum, but in reality, it has 64K RAM and 64K ROM in order to include extra features, such as running 3.5" and 5.25" PC formatted disks and drives. The keyboard is standard QWERTY with both Roman and Cyrillic characters on the keyboard!

Spectrum software can be LOADED via cassette and then SAVED out to the optional disk drive. Besides a DOS, The Hobbit also has fully compatible Spectrum BASIC, FORN and CP/M on board. (Note: the disk drive is needed to run/use the FORN language).

Some of the extended features includes keyboard macros, auto-numbering and renumbering, and networking commands. The network interface allows several Hobbits to be linked together even with PCs! Below are some Hobbit statistics from Sinclair User:

Microprocessor	Zylog Z80
Speed	3.5 Mhz
RAM	64KB
ROM	64KB
Network Speed	56Kbits/Sec
Price:	
CPU	£79.00
5.25" Disk	£59.00

Available from:

ADB Russian Services
17 Stortford Road
Great Dunmow
Essex CM9 1DA

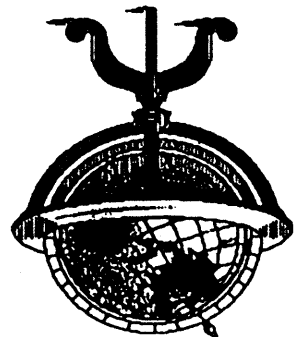
Phone: (0371) 876 3401

Write/Phone for Availability!!!!

INTERNATIONAL QL REPORT

The Definitive Information Source

Published by SeaCoast Services



AN OPEN INVITATION TO ALL QL/QDOS USERS

MIRACLE in NEWPORT

IQLR is sponsoring a QL get-together to be held in Newport, Rhode Island, USA on the 5th of June 1993. The festivities will be at the Salvation Army Building on Memorial Boulevard between the hours of 1300 and 1800 (1 pm to 6 pm EDT), after which, an optional DUTCH TREAT DINNER (you pay for your own meal) will be held at the Newport Beach Club.

Expected to attend and demonstrate their latest developments are Stuart Honeyball of MIRACLE SYSTEMS, Frank Davis of MECHANICAL AFFINITY, Bill Cable of WIND & WOOD COMPUTING, also planning to attend (not yet confirmed) are Freddy Vachha of DIGITAL PRECISION, Tony Fishman of TF SERVICES, and the outside possibility of Dilwyn Jones of DILWYN JONES COMPUTING.

There will be ample time for the demonstrations, time to browse the various tables (buy QL stuff), and to also include a question and answer period. We promise it won't be as rowdy as the Question and Answer sessions of the House of Commons. Come and meet the people responsible for the continuing success of the QL/QDOS; renew old friendships, start new ones, but above all come and have a good old fashioned QL good time. Bring the whole family, Newport is famous for its family orientated activities, and there are plenty of accomodations within minutes of the show.

To pay for the costs incurred, it will be necessary to charge a modest admission fee; pre-registration is \$3.00 per person, at the door registration will be \$5.00 per person. All those in attendance will receive a name badge to help identify everybody.

ADDITIONAL INFORMATION IS AVAILABLE FROM: Bob Dyl at IQLR, or call 401-849-3805

15 Kiliburn Court, Newport, Rhode Island 02840, USA

CABLE COLUMN

By Bill Cable

ARCHIVE SERIES PART 12 : ENTERING PROCEDURES USING THE ARCHIVE PROGRAM EDITOR - FIRST GROUP

This series now begins formal programming in ARCHIVE. I have provided many one liner type-in examples in the past as a way to illustrate how some of the commands work but ARCHIVE is not designed to be used that way. The commands are just the building blocks of a more complex structure called a procedure. ARCHIVE is a procedure based language like SuperBASIC.

What is a procedure? It is just a user defined collection of ARCHIVE commands and functions (and perhaps calls to other procedures) that accomplishes a task. The procedure is given a name and it is executed (called) when the procedure name is invoked. Procedures are similar to functions or subroutines in other languages. They work similar to GOTOS in older version of BASIC where a block of code could be jumped to and returned from. Procedures have several advantages over the GOTOS. First the name of the procedure, if wisely chosen, is descriptive of what the procedure does. That helps us conceptualize what is being done much better than line numbers. It makes it possible to read a program and actually understand most of it. Second procedures can be developed and debugged independently and then be merged into whatever programs need the procedure. Third a procedure can call itself. Often certain programming tasks have a simple solution if a group of statements can be used over and over (recursion) until a condition is met. Often we want our procedure to be passed information to work with. This is done by putting a semicolon after the procedure name and listing the variables (arguments) to be passed separated by commas. If we define our procedure in this way the arguments must always be included when the procedure is called.

What is a program in a procedure based language? A procedure is a collection of commands, functions, and procedure calls with a name and specific task to accomplish, a program is a collection of procedures stored in a file (which has a name) that work together to accomplish a more complex task.

What is a function in the ARCHIVE language? Functions are much like procedures but there is only a fixed set of argument list in parenthesis (). They might be thought of as useful canned procedures always available to us.

I have explained previously that ARCHIVE supports 2 kinds of variables much like BASIC : Text variables which

end in a '\$' and can hold up to 255 characters and floating point (numeric) variables which don't end in '\$' and have up to 14 significant digits. ARCHIVE does not support arrays. Variables must be initially defined before they can be used and there are 3 ways this can be done :

1. LET command : let a\$ = "Hello" : let bet = 543
2. LOCAL command : local a\$,bet
3. In procedure definition : proc tally_up\$a\$,bet

Variables can be global (available everywhere) or local (exist temporarily within a procedure). They are local within a procedure if in the procedure definition or in a LOCAL command within the procedure otherwise they are global.

We will continue learning about ARCHIVE by entering and playing with a series of procedures that can be saved and merged into programs as needed. These handy procedures deal primarily with displaying information to the user and prompting for information from the user. By having these standardized procedures for interacting with the user it will be much easier to construct the more complex programs I will introduce later.

BASICS OF THE ARCHIVE PROGRAM EDITOR

After you start ARCHIVE you are in command mode and you see the command prompt '>'. These are the ARCHIVE commands relating to the program editor available in the command mode :

Start the editor
edit<ENTER>

Load procedure(s)
load "{name}"<ENTER>

Save procedure(s)
save "{name}"<ENTER>

Start a loaded procedure
name<ENTER>

Print loaded procedures
list<ENTER>

where {} = device (tip2_,mdv1_, etc)

When you save procedures to a file they are in ASCII (text) form which can be edited with other editors (I like THE EDITOR). There is a binary form 'save object' and 'load object' which will be discussed later.

After you start the ARCHIVE program editor (by typing : edit<ENTER>) you are in the program edit mode. The program editor is like a single purpose word processor designed to only create and edit ARCHIVE procedures. I think it is one of the slickest programming environments around. If it only had a search and replace it would be complete. If no procedures are currently loaded you will be asked for a name of a procedure to create otherwise all loaded procedures are listed alphabetically on the left side of the screen. The procedure being edited is in bold face and its lines appear on the right. You change which procedure to edit by pressing <TAB> or <SHIFT><TAB>. You choose your edit location within the procedure's lines (on the right) by the up arrow and down arrow keys. You do your editing at the bottom of the screen. It very convenient and much easier than SuperBASIC program editing. The editor automatically indents conditional statements and loops for easy reading and debugging.

The program editor has its own set of commands and special keys. They are :

- Exit the editor <ESC> or <ESC><ESC>
- Create procedure <F3><n<ENTER>
- name<ENTER>
- {enter lines of procedure}
- <ESC> {when done}
- <TAB> or <SHIFT><TAB>
- <up arrow> or <down arrow>
- Move to a line
- Insert new lines <F4>
- {now insert lines}
- <ESC> {when done}
- <F5>
- {edit line as desired}
- <ENTER> {when done}
- <F3> c
- {up or down arrow for more}
- <ENTER> or <ESC> to abort
- {Cut them as above}
- {move to procedure & line to put}
- <F3> p <ENTER>
- {Move to procedure to delete}
- <F3> d <ENTER> {its gone}

PREPARATION

Start ARCHIVE in your customary way so you see the ARCHIVE command prompt (>). We will not need to access a database. You will start the editor and immediately begin entering the procedures listed below. Some mistakes will cause the editor to not accept a line and you will have to spot the mistake and correct it (like unmatched quotes). Type in as many as you wish and exit the editor and save them to a file (call it group1) and save a second copy somewhere else.

PROCEDURES TO ENTER - GROUP 1

```

proc acky:line,m$
rem prints message (m$) at line & waits for acknowledge
llny:line: print m$,":",tab 40," Press <ENTER> : ";
input $:llny:line
endproc
proc defy:line,m$,d$
rem prompts m$ at line and suggests d$, \ = null
llny:line: print m$,":<ENTER> if ":";d$:";":":inp: if ans$=""
let ans$d$: endff: if ans$=""\": let ans$=""": endff
print at line,len(m$)+1,"":rv$:"":ans$:"":rv$: tab 80:
let ans$=lower(ans$)
endproc
proc heady:$
rem clears screen and makes heading of $
paper sp: cis : paper hp: ink hi
print rept(" ",240); at 1,1:$;
paper sp: ink si: print at 4,0:
endproc

```

rem inputs global variable ans\$ in reverse screen color

```

print rv$: input " :ans$:"": print rv$;
endproc

```

proc inpy:line,m\$

```

rem prompts m$ at line and inputs (through inp) ans$
llny:line: print m$+" :":inp: let ans$=lower(ans$)
endproc

```

proc key_choice:i,\$,j\$,k\$,l\$

```

rem prompts i,$,j$,k$,l$ at line i, accepts a single key input
rem if in $ list, if ke=1 need enter if ke=0 don't
let ans$=""": while not instr(i,$,ans$) or len(ans$)<<1
print at i,0; tab 80; at i,0,$:k$;l$:" => ":";k$:"":rv$:"":
if ke: input ans$: print " :ans$:"":rv$: let ans$=lower(ans$)
else : let ans$=lower(getkey())

```

```

if code(ans$)<32: if code(ans$)=2: let ans$=""
else : if code(ans$)=3: let ans$=""
else : if code(ans$)=4: let ans$=""": else : if code(ans$)=5

```

```

let ans$=""": else : let ans$=""": endff : endff : endff
endff : print ans$:"":rv$:"": endff
if not instr(i,$,ans$) or len(ans$)>1: if ke

```

```

let ans$="" then <ENTER>""": else : let ans$=""": endff
print at i,0;rv$: tab 80:

```

```

acky:"Press the SINGLE KEY for the desired action"+ans$
print rv$: endff : endwhile
endproc

```

proc llny:line

```

rem clears line at line
if line: print at line,0;tab 80:: print at line,1:: else : print :
endff

```

proc msg:line,m\$

```

rem prints pausing message m$ at line
llny:line: print {""+m$+"..."};
endproc

```

proc setup

```

rem sets needed initial values ** must be run first **
let rv$=chr(26): let hp=3: let hi=1: let sp=5: let si=1
let ke = 1: let ke$ = " KEY+ENTER "
endproc

```

proc yom:line,m\$

```

rem prompts m$ at line returns y or n in ans$
let ans$=""": while ans$<<"y" and ans$<<"n": llny:line
print m$+" [ y/n ] :":inp: let ans$=lower(ans$): endwhile
endproc

```

proc defy:line,m\$,d\$

```

rem prompts m$ at line and suggests d$, \ = null
llny:line: print m$,":<ENTER> if ":";d$:";":":inp: if ans$=""
let ans$d$: endff: if ans$=""\": let ans$=""": endff
print at line,len(m$)+1,"":rv$:"":ans$:"":rv$: tab 80:
let ans$=lower(ans$)
endproc

```

proc heady:\$

```

rem clears screen and makes heading of $
paper sp: cis : paper hp: ink hi
print rept(" ",240); at 1,1:$;
paper sp: ink si: print at 4,0:
endproc

```

proc inp

Until next time when we have more procedures to enter and more extensive examples Happy Archiving!

procedures to initialize needed global variables. Procedure result. Always run setup when using these Notice that global variable ans\$ is often used to hold the

```

There is not much space for examples but try these :
mode 0 : setup<ENTER> always initialize setup first
yom:10,"Are you happy": print at 18,1;ans$<ENTER>
defy:12,"Your favorite computer","QL":
print at 20,1;ans$<ENTER>
key_choice:14,"","Device","Mdv Ftp Ram exit","dfrx"
:print at 22,1;ans$<ENTER>

```


Fowler) and Stuart Honeyball of Miracle Systems. Thanks on this data goes to IQLR, The RamTop (Chris depending on the value of the English Pound.

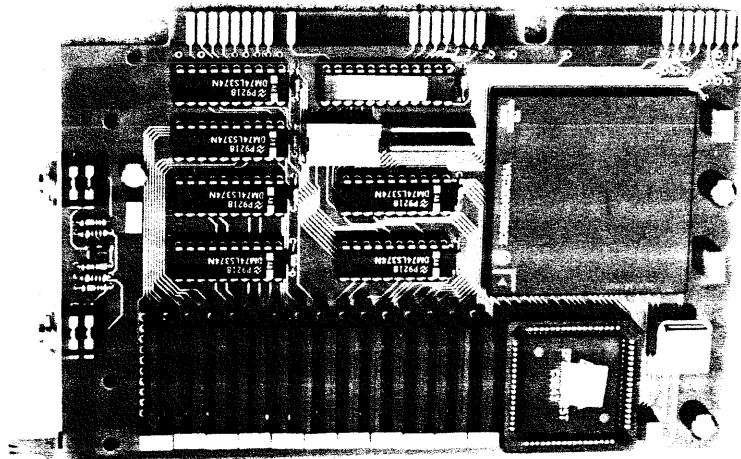
you at anytime. US\$ cost will run approximately from \$400 to \$675, the card, which can be bought with only one meg and upgraded by the IBM. The price will vary with the amount of memory you wish on serial ports, mouse, parallel port and hard and floppy drives of network ports, no microdrives and will be able to access the speed of the regular QL). It will have two standard working QL at about 5-8 times the speed of the Gold Card and 30+ times the of memory, runs at 20 MHz on a 68EC040 Processor (which puts it The card can be purchased with from one to eight megs

view) for a machine as clumsy as the IBM in its native state. about the QL would otherwise have left it (my personal point of who either fell prey to peer pressure or never really learned much sophistication of software, or lack of a hard drive. Only those they had ever left the QL was either graphics capability, any case. This is great because to many people the only reason will need an EGA or VGA monitor on your IBM to use this card in the improved PC graphics, such as EGA, VGA and perhaps SVGA. You but later releases (perhaps finished by June) will support also The initial card will support only MODE 4 and MODE 8, compatible Superbasic compatible interpreter).

on disk is SBASIC (I assume this is X-BASIC, an improved and and Tool Kit 2 fame. It is said to be fully QDOS compatible. Also derivative of SMS-2 is authored by Tony Tebby of QRAM, QPAC 1 & 2, should run with the QXL. The operating system, SMSQ, which is a machine. We are told that programs that run with the Gold Card an application. This gives you a thoroughly updated QL compatible running of an IBM disk supplied with the card, run the QL board as machines. This means that you can plug it into an IBM and with the on any IBM PC/XT or above computer and the clones of these Just what is a QXL-Card? It is a PC Card that will work Mechanical Affinity in the Americas.

technical advance from either Miracle Systems in Europe, or from not, they will still have a chance to purchase this latest English hardware house run by Stuart Honeyball. For those who do newest hardware advance for the QL from Miracle Systems, prominent at Newport, Rhode Island, will be among the first to see the Those of you who make it to the QL show on June 5, 1993.

THE MIRACLE FROM MIRACLE--QXL



EXTRA! EXTRA!
THE LATEST
QL SCOOP!!!

QL to IBM Transfers

Since many of you own QLS and IBMs, or have friends who own IBMs, you may need to transfer documents between the two. There are programs to do this, but certain requirements must be met. The QL and IBM must have the same size disk drives. They also must be of the same density -- at least the programs I tried from Quanta had this requirement. I could never get the two to match. Even after I bought a 360K, 5 1/4" drive for the QL it garbled the document. Big pieces of the story would come over fine, but the rest would either be lost or put in the wrong position.

At this time I should have purchased Discover or Multi Discover. I believed either of these would have done the job, but some doubted that they would work with my Delta Disk I/F. (I still think they would work, but the delay allowed me to find another solution.)

Bob Gilder (in the Sept/Oct, '92 *International QL Report*) diagrammed a serial cable that was different than the one I had made for my modem cable (which had been diagrammed in QLINK's manual). It used only six conductors, cross connecting a 25 pin, male connector to a 9 pin, male connector in the following manner:

- 25 pin 9 pin
- #2 TXD -----> #2 TXD
- #3 RXD -----> #3 RXD
- #5 CTS -----> #5 DSR
- #6 DSR -----> #9 DSR
- #7 SG -----> #7 SG
- #20 -----> #4 DTR

Since I worked as a data cabler (at the time) there was no trouble finding 20' of twisted, 4-pair, scrap cable. We threw away hundreds of feet a day. Radio Shack had the connectors, so the total cost was about \$4.00 for the finished cable. (I felt the hoods were unnecessary, since the cable would only be used occasionally.) I really didn't think it would work so I didn't want a big investment.

I already owned a null modem for the IBM so I connected that to the 25 pin connector. (This may not have been necessary if I had used the QL's ser1 port, instead of ser2 -- I don't know for

sure.) Before I connected the computers I exported one of my stories from a QUILDOC to ASCII, using XCHANGE's EXPORT feature and saved it to disk. I then loaded QLINK into the QL and Procomm into the IBM (both are shareware programs). Procomm was then set to receive an XMODEM transfer, then, moving across the room to the QL, I began transmitting the document, using the XMODEM protocol without CRC. I was shocked when it worked the first time. (I had intended to use XMODEM CRC, which I thought would be compatible with Procomm's XMODEM, later tests showed that this would not work.) I was definitely lucky.

I later found that by using TEXT87 PLUS4 I could save my stories as ASCII text with only line feeds at the end of each paragraph (XCHANGE's ASCII option exports text with line feeds and carriage returns after each line). Then using QLINK's FILTER utility I could change these line feeds (LFs) into carriage Return/Line Feed combinations. Once transferred to the IBM these documents could automatically be reformatted in any way I wished using WordStar (since WordStar's basic format is a LF/CR combination after each paragraph). This was an unexpected bonus.

After transferring several stories from the QL to the IBM, I decided to see how effective this whole procedure could be. Using Text87 Plus4, I copied a story to itself until the QL's memory ran out. It turned out to be over 40,000 words (about half the size of a "historical" novel). I then Exported this document into an ASCII file and changed the LFs into LF/CR combinations using QLINK. All the other serial transfers had been done at 1200 baud, but I decided to try this one at 96,000. It took about 10 minutes to get this document to the IBM and another 5 minutes to reformat the whole story into double column, justified text.

I don't know why everything went so smoothly, but I'm not complaining. If anyone would like more information about the configuration of my computers, or help in building a cable, let me know.

Martyn Sherwood

All the best for 93!

We look forward to hearing from you as Prism PD is determined to be at the front of an international PD exchange of software.

Prism PD is constantly in touch with the continental PD scene and receives new demos all the time from GERMANY, POLAND and other European countries and are proving VERY popular, some of which improve the Spectrum graphics. We also have a bi-monthly magazine exclusive to club members, so any info on the history of the Timex etc would be appreciated.

I have just read about the Timex-Sinclair computer in the new issue of 'Sinclair User', which gave your user groups address. I am very interested in finding out a little bit more on the US market for this machine. If there is a Spectrum emulator for the Timex in your group then perhaps it will be possible to arrange the swapping of software, & vice versa if you have an emulator for us. Specy owners to run Timex software. It was mentioned in Sinclair User, that the magazines' American contact, Bob Shade who runs a photography outfit in Philadelphia, uses a Spectrum emulator on his Timex, so I don't see why this principle cannot be reversed.

Prism PD was set up 1 year ago, and we have a good following of regular customers and contacts. As you will see from the list supplied, we cater for all Spectrums and have an extensive range of titles on offer.

First of all let me introduce myself. My name is Martyn Sherwood, and I run what is fast becoming the leading British PD suppliers, and we are regularly advertised in the 'Your Sinclair' magazine.

Dear User Group

23 2 1993

USA 46970

Indiana

Petu

Update Magazine PO Box 1095

Enland (UK)

CV22 7HU

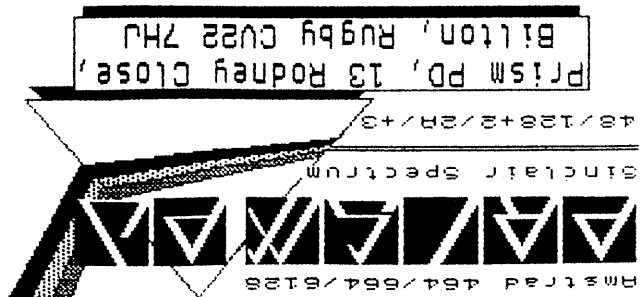
Ruzby

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PRISM PD





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

PLEASE READ ME: £2 for any 12 titles. Send a
tape (not the cassette case),
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
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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
number 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 Receiver erased + D files,
U34 Bgr 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 size, 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 503, 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
2048C, U98 Notebook, U998-2A +3 printer utility, U100 48 & +2 printer utility, U101 Comm prog 1 for VT5500, U102
Comm 2, U103 +D snap menu screen, U104 +D adult jokes, U105 File copy/rename , U106 Turbo tools for programmers,
U107 The Sprag - Various commands (extensive), U108 ASCII viewer, U109 Extensive font editor, U110 Normal or headers
file viewer, U111 128 DIP fixer for the grey +2 - abort printing without losing text files, U112 Multidump 1, U13
Multidump 3, U114 Mousedraw routine, U115 Onerror - trap errors, U116 Catram 128, U117 ATTR 128, U118 PFM 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 -
Fastword file previewer, U134 Spreadsheet, U135 File Organiser,
U136 Renumber PFD, 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 - brilliant, U147 "CF/M3" SPECIAL +3
COMPIATION PACK - includes drive or formatter to 203k - 32
prog + 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.

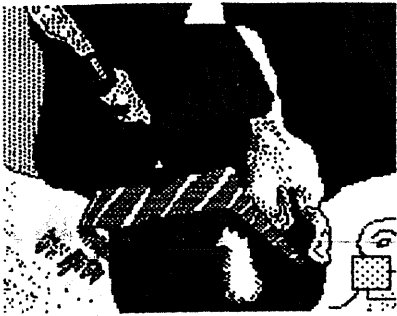
PROGRAMMERS NEEDED!

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



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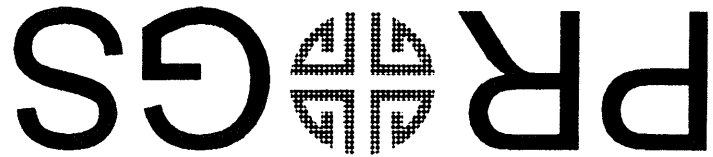
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Having just got back from New York, from a Mental Health Conference, I decided to rest up by reviewing, at least briefly, some of the new software and hardware I have picked up the last three months. There is so much new stuff coming out these days that it makes a poets heart want to sing. Alas to that matter as I have not yet talked Carol and Frank into allowing some of my poetry to grace these learned pages.

First of all, I let Frank talk me into replacing the 8049 chip in my QL with a HERMES chip. I had on occasion had some keyboard bounce. It is just plain not there anymore. I had tried another anti-bounce chip about three years ago, but never liked the feel of it. This time it was different. That was only the first improvement I noticed. Many of you will remember the Freeware MDV that Frank Toemay of Quantum Computing gave away to customers? A rather good graphics display, but super annoying on the sound, and I never found out how to turn down the sound or just plain turn it off. I still cannot turn it off, but with the HERMES, the sound has softened. It makes the sound capability on the QL closer to that we found on the Spectrum. Thanks to who ever came up with that idea. The next thing Frank had me try out was using my modem, at 300 baud, without a Modaputer. It worked! No dropped characters. I borrowed a high speed modem that ran at 9,600 baud, and used it with QuidSoft Terminal (I will get around to more on that shortly) and experienced no problems what ever. I am told by the manual that it is good upto 19,000 baud. Now all I need is for someone to invent a fax machine and software for my QL so that I can take full advantage of this capability. The HERMES can do 19,200 baud.

What can I say bad about the Hermes chip? Nothing. I can however say a bit about what it is supposed to be capable of that I have not had a chance to try out. When the latest version of MINERVA is finally released (1.96 or above) it is supposed to allow you to multi-task out of each of the two serial ports. As it is, even without that, I found out that for the first time I can set both of my serial ports at different baud rates. I can now have my Serial Mouse running at 1200 baud and my printer running at 9600 baud. I can also do the same with a high speed modem and printer. Nice, huh? It is supposed to also do away with INT7 problems that the QL had, but that is something I was unaware of so can not comment on. When someone tells me just what the INT7 problem was, or just how serious it was, I will try to remember to let you know. Basically, I feel that outside of a Gold Card, the MinerVA and Hermes combination is the best hardware upgrade for the QL available at this time. Both of these are available from TF Services in the UK, and from Mechanical Affinity in this hemisphere. I paid out \$43 for the HERMES and \$62 for the latest MKI MinerVA from them.

I spoke about the Serial Mouse software. I saw in a club newsletter recently where someone tried just plugging in an IBM mouse and loading software and assumed it did not work. Whoa, a minute, if I got that all right. You can not just load and insert the mouse. Read all of the directions. You have to rewire or make a little set of jumpers for the serial port in order to use the IBM mouse. They are not pin compatible. And if you are using an American QL, then you need to use the German

wiring setup. If you use the English wiring it will not work. Also pay close attention and load the German version of the software so that the wiring and code match up. Last of all pay close attention to what is said about the Microsoft mouse and all will work. I hope this helps. The best thing to do from the start is to avoid the Microsoft mice and stick with a plain old generic serial IBM compatible mouse.

I spend a lot of time traveling as a psychologist, and am home so seldom I have not bothered to have a home phone, only at the office. This kept me away from using a modem at home for quite some time. At times for work I have had to use a modem or a terminal in my line of work. Years ago I used a 2050 with MTERM2 on my TS2068, and Commodore modem on an old VIC-20, but not for some time. I had gotten a little rusty. I had decided that I now needed a modem and the appropriate software to allow me to make good use of my HERMES and MINERVA, so I called up a friend who loaned me copies of QCODE MD V5.1 and QLTFRM 2.0. I tried out both, and while I did find that both were quite adequate for home use to friends and local bulletin boards, neither was full featured enough for my uses on the road, or for use with a large university (Indiana University) or government medical database. So, I called up Frank Davis, of Mechanical Affinity, and told him to send me the best terminal program he could get for the QL. In return for \$45 he sent me a copy of Qualsoft QL Terminal. It is advertised as a Viewdata and Scrolling Terminal emulator for the Sinclair QL, quite a mouthful.

It came in a nice binder, in a 3 1/2 disk, with a nice looking user manual. The print was just a wee bit smaller than I would have liked in the manual, but clear enough to read. In the U.K. this program can be purchased from TF Services, and in North America it is available from Mechanical Affinity. Once you are somewhat familiar with the program, the manual may not be all that necessary, as the program has on line help built into the program. That is a plus point.

The program supports Hayes compatible modems, those that use the Modaptor from Miracle, Tandata Qconnect, Astracom, Astracom Hayes, auto-dial modems, manual dial modems, Miracle QL Modem, and others if you know how to set the correct settings. You can (for autodial modems) keep a list of dialing services or friends that you commonly contact. It is set up to handle from 75 to 9600 baud and can handle split baud rates, such as 1200/75. That is not a feature needed much here in North America these days (split baud rates).

The program can multi-task with QRAM, QPAC2, or Taskmaster. I am not sure about QTOP or Qkick, as I only know about these programs, but have not seen or used them. The menu of the program allows you to customize it if you will be multi-tasking. It has a built in simple text editor, which can be of great help when dealing with e-mail. Terminal emulations include Prestel, VT52, VT100, ANSI.

You can do a dump of screens to a printer or to disk or MDV. You can also upload or download files, programs, etc. When uploading or downloading the program allows for a buffer of upto 16k, as your memory allows. Xmodem is of course included in this part of the program.

The program is the best I have seen for the QL, but the manual is not the best organized. The manual has all the data there, just not in a logical manner. Still a good buy.

Appendix D - Glossary of terms

Application - A program set up according to the appropriate machine conventions.
Bank - 16K chunk of memory, always on a 16K boundary in the logical address space.
Binding - this refers to switching a bank to a segment or to switching a file device to an particular stream with the CLL
BLINK - the name given to the Z88's gate array chip. The chip handles the screen, serial port, keyboard, memory switching, interrupts etc.

Card Manager - this refers to the code which deals with inserting and removing ROM cards. The basic rules are that all interchange should be done from the Index and that the machine is switched ON. If an application is using a ROM card then the card's slot is displayed in the next to the application name in the Index window. RAM cards can only be inserted, never removed. EPROMs can be inserted and removed at most times, but obviously not while the Filter is actively reading or writing slot 3.

CLI - Command Line Interpreter. This is used to simulate the keyboard and to rebind streams.

Director - synonym for 'Index' (the name used for it while much of the code was being written, hence 'dc' calls not 'ic' calls).

DOR - node in tree structure used in applications and the RAM filing system.

Explicit Filenames - a filename which includes the device and root directories. For example "quotes.pip" might become ":RAM.1/office.dir/quotes.pip"

Extension - up to three letters after the filename, usually used to classify the file. eg. you might add .pip to all your PipeDream files to aid identification.

Filter - conceptual 'object' (actually a set of routines) which perform transformations in a byte sequence. Also see Printer Filter.

Handle - A handle is a 16 bit value, usually returned in IX, used in file-like operations (eg. files, filters etc.) to direct input and output. For example, a handle is returned when a file is opened and is subsequently used whenever the file is accessed. A file can have several handles associated with it and attributes like the sequential pointer into a file are associated with each handle and not with the file itself. There are a finite number of handles in the machine, initially around 100, and the current number available is reflected in the high word of the sequential pointer associated with a handle value of -1. (In BASIC PTR#-1.)

Logical address - Address which the Z80 CPU 'sees', ie. a standard 16-bit Z80 address. See also Physical address.

MOS - machine operating system. Also referred to as OZ.

Page - 256 byte chunk of memory, on a 256-byte boundary. This is the basic unit of memory on which the allocation routines operate.

Physical address - 24-byte address referring to an actual memory location (only 22 bits are significant, giving an addressing range of 4Mb).

Note: DTR is high when the machine is awake. The machine is always awake when the screen is active, but even if asleep the machine will wake every minute or so to carry out various housekeeping tasks, such as checking for alarms, and at these times DTR will go high. Pin 1 will show a signal if there is power available to the machine.

1 -	unswitched +5v at 10 uA	output
2 TXD	transmit data	output
3 RXD	receive data	input
4 RTS	ready to send	output
5 CTS	clear to send	input
6 -	reserved for future use	
7 GND		
8 DCD	data carrier detect	input
9 DTR	switched +5v at 1mA	output

The Serial Port

The Z88 connects to external electrical devices by using the serial port, the card slots at the front of the machine and via the expansion port (situated below the ENTER key on the right hand side of the machine). Note that in some models of the Z88 the expansion port does not have a removable plastic cover and on these machines the expansion port edge connector is not gold plated. In the following descriptions signals postfixed by a bold L are active low signals.

Appendix F - Hardware Connections

- Stream - This is a communication channel with an associated handle.
- Slot -
- 1) One of the three physical holes in the front of the machine, which can accept a RAM, EPROM or ROM card. The internal memory of the machine is thought of as Slot 0.
 - 2) The transmission frame for a character of data in the serial system, ie. the byte to be transmitted plus appropriate start and stop bits.
 - 3) Concept used in PipeDreem. Roughly approximates to a spreadsheet cell.

- 1) One of the four 16K portions of the logical memory map.
- 2) One of the portions of a filename separated by '/', ie. a file or a directory name.

Segment -

Process - A particular instantiation of a program (normally an application).

Printer Filter - This is a filter controlled by the Printer Editor. It allows applications to use special printing effects by specifying filter codes and letting the filter generate codes appropriate to the printer actually in use.

Pre-emption - The suspension of a process, normally prior to the main body of a system call. See also Logical address.

There is a No Conversion option useful for transferring Ascii text files or for storing Basic files on the Macintosh Hard Disk. Ascii text on the Z88 and the Macintosh is exactly the same unlike some other computers. The Z88 and the Mac both use a Carriage Return for an End of Line character.

Pipedream to MacWrite conversions work fine in both directions. Although you can't transfer complex MacWrite files. Such as ones with large font sizes or graphics.

I could not get Pipedream - WKS files to transfer. I am using Microsoft Works 3.0. I can save in a WKS format. Then Z88MacLink does not recognize the file. It does not appear in the window. In the other direction Works can't translate the WKS file which was converted from Pipedream. Perhaps a different Mac spreadsheet would work better.

Z88MacLink is a very nice program. However I still use Terminal Emulators with XModem to transfer some files. The terminal programs transfer files much faster than Z88MacLink. Most of the time I will use Z88MacLink because it has a better user interface and it can transfer more than one file at a time. But if I have a larger file to transfer I will use the Terminal ZTerm on the Mac. ZTerm is a different program than the program with the same name for the Z88.

Overall I like the program very much despite the problems I mentioned. It is kind of neat working with your Z88 files in this program.

Z88 to Mac Files Available

All of these programs are available on Genie or from myself upon request. They are all written by Richard Haw. ZX is a Mac to Import-Export transfer program. Z-Image enables the Z88 to display Mac graphics. ZHyper enables the Z88 to interface with the Mac Hypercard program. Mr. Haw also wrote the ZCP communications program and the ZFU file archiving program.

I bought a Macintosh Classic in late 1991 to supplement my Sinclair collection of computers. Quite a few Mac to Z88 programs were uploaded in the Genie Laptops Roundtable by their author Richard Haw. So I decided to buy a Mac and try them out. I also chose a Mac for ease of configuration compared to MSDOS or Windows.

I purchased Z88MacLink at last Summer's Computerfest in Dayton, Ohio. I had been using and continue to use terminal emulators on each machine to transfer files.

Z88MacLink consists of a Rom which goes in one of the Z88's three slots. There is a serial cable which connects from the Z88's serial port to the Macintosh's modem port. The package also contains a floppy disk with the Macintosh Z88MacLink Application.

The package is easy to use. Connect the serial cable. Choose Link from the Z88's main menu or press [] L. On the Macintosh double click with the mouse on the Z88MacLink icon.

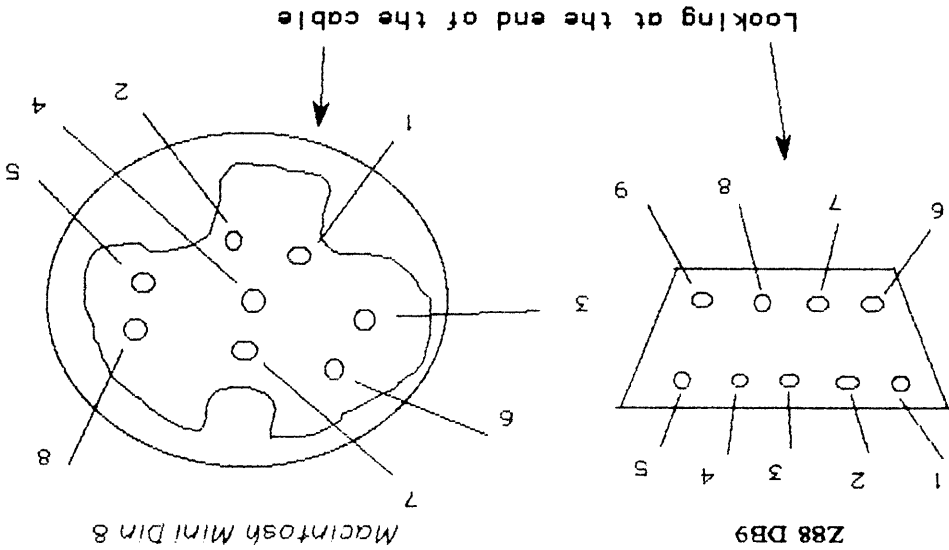
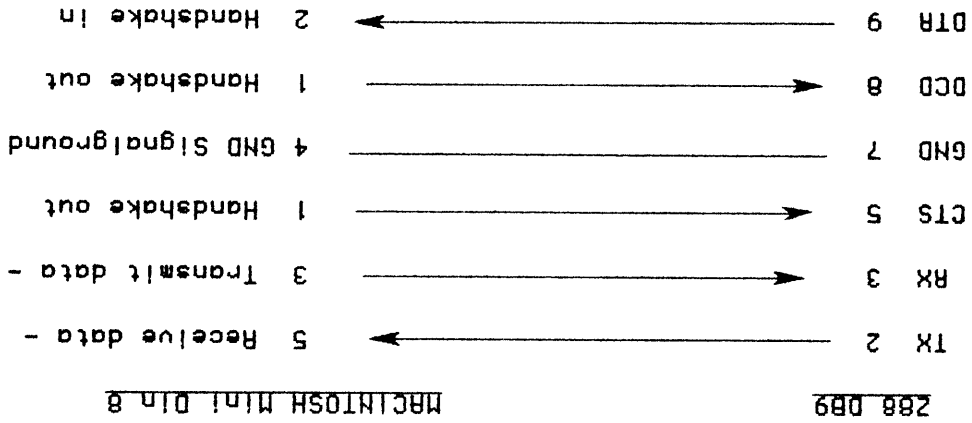
Now all operations are done from the Macintosh. You are presented with a window called Transfer. This contains two windows containing lists of files. All transfers are done from the left window to the right. You select from directories, subdirectories and Mac folders in the usual Mac fashion by double clicking on folders or selecting different levels of files from the menu on top of each window. If you want to change the direction of transfer click on the Drive button under each window. You can see all your Z88 files. The Z88 acts like another Mac disk drive albeit a very slow one.

The program also provides file conversion. You can convert between Pipedream and MacWrite word processing files. You can convert between Pipedream and Lotus WKS spreadsheet files. These formats were chosen because most Mac applications can read these files.

And you can convert between Z88 BBC Basic and Macintosh BBC Basic. You would have to purchase Macintosh BBC Basic probably from England.

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Z88 to Mac Cable

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These disks contain at least one major piece of software written specifically for disk drive and are guaranteed to be worth the money. The rest of the disks are filled with various utility programs taken from the issues of UPDATE and a few surprises thrown in. Half of the money goes to the author and is meant to encourage new programs for the QL. Some of the programs take advantage of Tool Kit 2 by Tony Tebby. All are 20.00, except Qluster, which is \$15.00; includes P & H, add \$1.00 CAN. Available as 3 1/2 or 5 1/4 disks. Add \$5.00 for mailing to other countries. We accept personal checks, company checks, money orders as well as International Postal Money Orders, but no charge cards. If ordering on MDV, then please include one that is already formatted, so we will know it will run on your QL. Due to the expense of MDVs this is necessary. If two MDVs are required we will state so in the ad.

1) HARTUNG UTILITY ISSUE DISK - Several excellent programs such as stand alone data base, Address, and QSO files. All are in Superbasic. Lots of hints and tricks for programmers. Requires some knowledge of Superbasic or a yen to learn. Recently updated by Bob Hartung. Address file can be used as inventory program. It can print out labels. Both screen or paper printouts can be by Alpha sort, or be by last name.

2) CABLE ARCHIVE ISSUE DISK - Contains six Archive programs along with Doc files to get you going on making use of the Archive programming language. Also has Tasket, plus Doc file, to give you multi-tasking on your QL (much cheaper than QRAM or Taskmaster). Included is Arithmetic, a Superbasic program for math, along with math drills. This is for both the advanced and beginner user and greatly extends the use of Archive. To order on microdrive send two formatted microdrives, too much for one!

3) Qluster Issue Disk by AI Feng - Ql utilities to uncluster your disks and microdrives. COPY, DELETE, FORMAT, PRINT, VIEW, plus extended use of some Tool Kit 2 commands. TK2 is required. These are TURBO compiled for speed. Multitasks and uses minimal key presses. Includes Fast-Disk and Vegemat2, a super clone making program. Also Snap Shot - a directory column or condensed printout program.

4) DOS EMULATOR COMPANION ISSUE DISK by AI Feng - Just released in Oct. issue. Makes better use of Solution, PC Conqueror, Discover, XOVER, Qluster and scr_codes. If you are going to use the emulators, then check this out, you won't regret this buy.

5) QlUMSI DOS by AI Feng - a MSDOS simulator and front end program for the QL, also includes other programs by AI Feng for file management and cloning of programs. A Great Learning Tool

6) QL COMPENDIUM - a three disk collection of utilities for the QL, taken from the various short programs in UPDATE, plus file compression, decompression, E_Forth for the QL, C utilities such as FLEX and YACC. All for only \$20.00 NEW THIS ISSUE!

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1) NEW! PAYROLL by Jim Bretz. Payroll record program for employers, for the Larken System. Allows for accurate processing and use of employee earnings and tax records, etc.

2) Bob Hartung DOSDEX UTILITY ISSUE DISK, a complete disk management group of programs for the Oliger Interface only. This includes Multi-Manager for file handling. This collection has recently been updated and expanded.

3) MAIL MERGE ISSUE DISK, Oct 87 and Jan 88 issues of UPDATE utilities added to fill out this disk. Includes a tutor program for the Mail Merge program, List Looker, Purify, J-Utilities and Extra Memory Utilities. Larken, Oliger and Aerco versions.

4) WIDUP'S CAD PROGRAM, this will give you professional results from your TS2068 for computer aided design. Authored by William J. Federsen, perhaps the NO.1 authority on the inner workings of the TS2068. This program can be used to create user friendly printed circuit boards, computer art or desktop publishing files. It does not need expanded memory cartridges and is available in four versions: (a) Oliger for either IBM compatible printers or for the Olivetti Ink Jet. (b) Larken for IBM compatible printers or the Olivetti Ink Jet printer. Please specify version.

5) OLIGER DISK DRIVE BBS PROGRAM, this allows users of the Oliger interface to be able to operate a disk based bulletin board from the TS2068. The disk is also filled with many other Oliger disk routines and tips on using the Oliger System. Written by Paul Holmgren. Can use up to four DSDD disk drives.

6) The HYBISCUS ENSEMBLE, consisting of two separate, but complementary sets of programs. A) Daisy.B6 Ensemble, and B) Udbm.B6 Ensemble. LKDOS only, \$22 each or \$36 for both. The best file and database available for Larken, by Bill Jones. The price remains the same on this one, no change. Wordprocessor included.

7) TS2068 Super Calc by Bill Jones. Available in both Larken and Oliger formats. Handles loans, amortization, savings and fixed investments, plus a calculator and all for only \$15.

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