

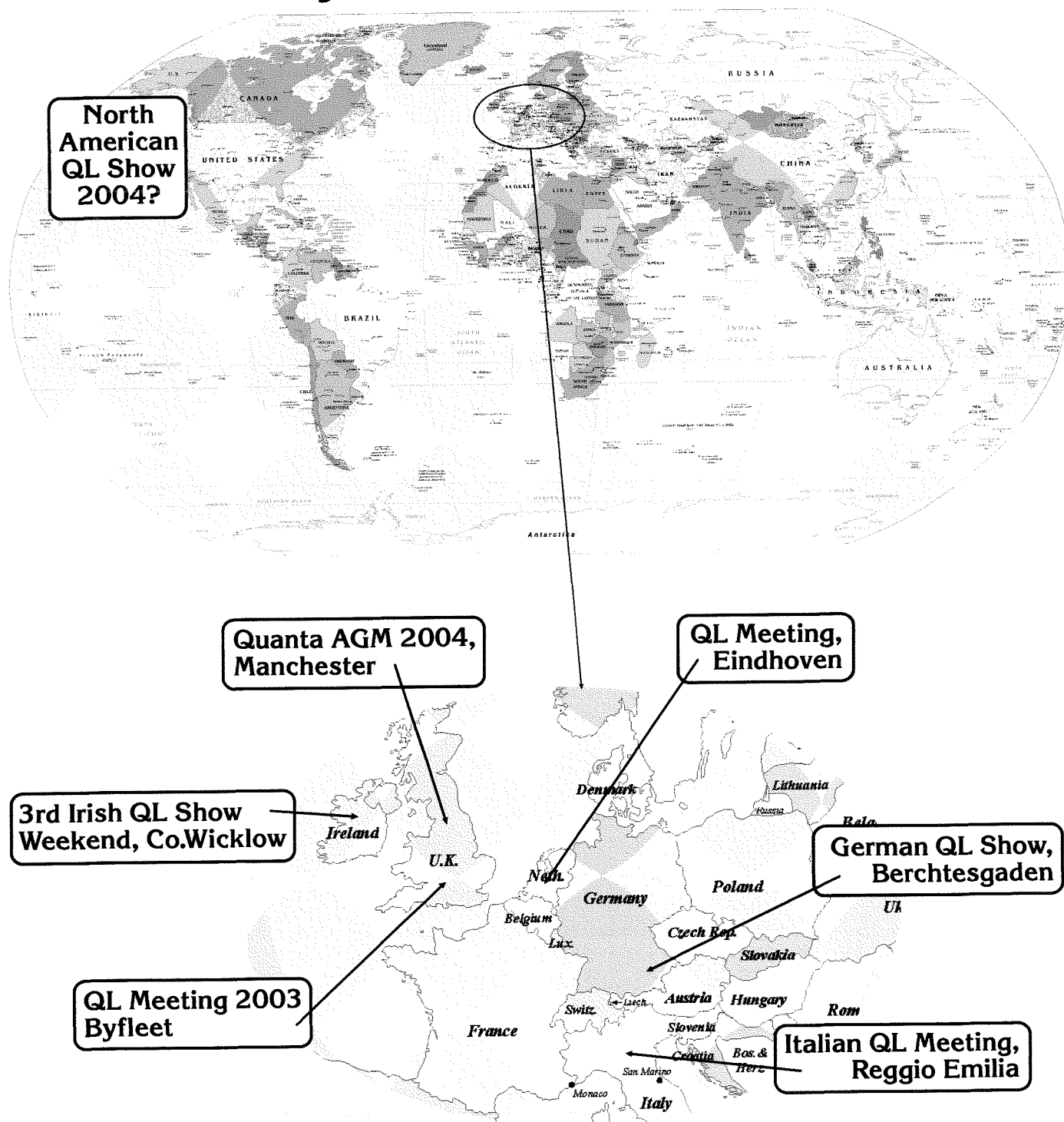
QL Today

Volume 8
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2003

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The Magazine about QL, QDOS,
Sinclair Computers, SMSQ...

There's always a QL Show near you...



**... just flip the magazine over and book your
next holiday - including a visit to a QL show!**

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We welcome your comments, suggestions and articles. YOU make **QL Today** possible. We are constantly changing and adjusting to meet your needs and requirements. Articles for publication should be on a 3.5" disk (DD or HD) or sent via Email or into one of the JMS-BBS's. We prefer ASCII, Quill or text87 format. Pictures may be in _SCR format, we can also handle GIF or TIF or JPG. To enhance your article you may wish to include Saved Screen dumps. PLEASE send a hardcopy of all screens to be included. Don't forget to specify where in the text you would like the screen placed.

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Issue 1: 30 April
Issue 2: 30 June
Issue 3: 30 August
Issue 4: 30 October
Issue 5: 30 December
Issue 6: 28 February

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The latest developments on the QL scene include the new QPC, SMSQ/E 3 and the Aurora "colour drivers" from Marcel Kilgus. We have looked at some of these things in recent QL Todays and will be taking a further look at them in this issue. I've been using QPC2 v3.11 for a little while now and am very pleased with it. Although the new 256-colour mode SMSQ/E and GD2 for Aurora had not been released at the time of writing, QPC2 now has an Aurora-compatible 256 colour mode and very good it is too – I've been testing some of my software on it and no problems (so far!)

The next significant releases will probably be the SOQL TCP/IP system and the Graphical User Interfaces. I was very pleased to hear that a SOQL based emailer is nearing completion, courtesy of Phoebus Dokos, and that the PPP protocol part of SOQL (in essence this brings us up to date for email) is working.

We've had previews of Jim Hunkins's QDT desktop system for SMSQ/E systems in recent issues, and I've dropped the odd hint about the Launchpad system I've been developing over the last couple of years. In this issue, you will find a preview of Launchpad from a tester of the very first alpha-release – bugs, warts and all! I hope that the work Jim Hunkins and I have put into our respective GUIs will bear fruit soon and that they will be well received by the QL community. The QL has been one of the few computers not to have some form of GUI system, so hopefully this software will plug that gap.

The QL shows scene looks like hotting up over the next year or so. As we approach 20 years of the QL and 21 years of Quanta next year (Quanta was established before the first QL was delivered if I remember correctly, back in 1983/84), the show calendar is starting to look pretty busy with shows currently planned in Ireland, Italy, Germany, The Netherlands, USA, and English shows

in Byfleet, Norwich, Manchester and Portslade in the planning stages for sometime over the next 12 months – keep reading our QL Show Agenda page for the latest news! There is a possibility that one of Quanta's events will be a QL-2000 style of meeting to celebrate Quanta's 21st anniversary, hopefully this will be promoted as a major international meeting to bring QLers worldwide together to celebrate the 21st year of Quanta's existence.

Do you have any ideas for a programme of events for such a meeting if it takes place? Do you think we should vote on a special award for the greatest contribution to the QL scene over the last 20 years or the greatest recent contribution? Do you think we should have an exhibition of QL history? Or try to invite notable QL luminaries from times past? Why not write in and let us know what you think!

Who would have thought back in 1984 when we were all worrying about QL delivery times and microdrive cartridges that wouldn't read properly that 20 years later we'd still be here and still this enthusiastic!



When he removed the drive from his QUBIDE the problem was obvious – it was completely fragmented!

Cartoon

NEWS

Quantum Leap Software

Starting August 25th, Quantum Leap Software will have the first REAL QL books on sale in a long time, starting with a Hardware Reference Manual and Turbo's Reference manual. These will be available in either hardbound or spiral bound formats and due to the use of Print-On-Demand techniques any updates will be immediate. The books will be available to order only online (at least in the beginning). Also all books (and future titles) will be also available for free as PDF documents (downloadable). For more info contact

Quantum Leap Software,

941 Lilac Street #1,

Indiana,

PA 15701-3340

USA

email: ql@dokos-gr.net

Web: www.dokos-gr.net

SOQL Emailer

Phoebus Dokos writes:

this quick note to tell you that the soQL-based emailer that I am writing is almost at the testing phase. Although it seems like a long time has passed since I announced the project, problems with C68, my month long holidays and school, made me devote very little time on it. However come summer session end in College I will be able to accelerate and hopefully by mid to end of August I will have it available for a beta test.

Please note that this is a text only application using the SOQL TCP/IP system (Which means that whoever wants to write a WMAN front end to it is more than welcome)

MidiPlayer/uQLx News

Simon Goodwin writes:

I have adapted Al Boehm's MIDI Player to run on UQLX, using any Unix/Linux supported MIDI device (e.g. virtually any PC sound card, and most flexible serial ports). The files are here (with Al's permission):

<http://simon.mooli.org.uk/QL/>

It requires no commercial software other than 'Super' Toolkit 2.

Work on the SOUND device for UQLX continues. It is already a big superset of the Amiga/Q40 implementation. UQLX allows SOUND input as well as MIDI in...

Javier Guerra writes:

Hi again, these are two new links for the Spanish QL Forum and the new address of the Luna FTP site:

The Spanish QL Forum (QForum):

<http://boards.melodysoft.com/QFORUM/>

The new address of the Luna FTP:

<ftp://ftp.gui.uva.es/pub/sinclair/ql/>

Javier Guerra Sinclair QL Spanish Resources

<http://sinclairql.info>

SourceEdit: SuperBasic syntax highlighter for free...

Jimmy Montesinos writes:

For those who want to edit or print highlighted and colored SuperBasic source code, Phoebus and I have released Superbasic language extensions for SourceEdit.

SourceEdit website:

<http://www.sourceedit.com>

SourceEdit can be download at:

<http://www.brixfsoft.com/dload.asp>

SuperBasic language extension is at:

<http://www.brixfsoft.com/tnr.asp>

The author of SourceEdit explained to us how to handle a source code, you need: rename original SB file adding the extensions .qlbas for example, and then:

Click Tools › Options and select the Files page.

Click the Add Language button to add SuperBasic to the list and then select it from the drop-down. Type in *.qlbas in the Maps to Files textbox. To add it to the Open and Save As dialogs type SuperBasic as the description and *.qlbas as the extension in the lower frame and click Add.

I'm continuing to develop some tools in that same way...

Phoebus Dokos adds:

A new version of the language description file is out. It now includes 578 KEYWORDS plus other constructs and operators. Auto completion (with CTRL-SPACE) works pretty well.

New version recognizes:

All SBasic and SuperBasic keywords

All QPC2 specific keywords

All ROMDISQ specific keywords

All (Super)Gold Card specific keywords

All TurboToolkit Keywords

All QLiberators runtime keywords

Some Minerva Keywords

All SuperHermes Keywords

Thierry's CD Extensions Keywords

Until it can be made available somewhere, please ask Phoebus or Jimmy for a copy.

Launchpad News

I have set up a web page with information about and screen dumps from the Launchpad QL desktop/GUI system.

An alpha-test version of Launchpad is now out with a few testers, but currently has no manual and some of the little accessory programs are incomplete. I very much hope I will be able to, err, "Launch" the program at the Irish QL Show end of August (details of that and other shows on my website).

The Launchpad website is at:

<http://homepages.tesco.net/dilwyn.jones/launchpad/launchpad.html>

Menu Extension

Well, it should have been ready some time ago (like most other "colour" updates) but various problems mentioned in the last two issues ensured that they are not quite ready yet. The software itself is actually ready for quite a while, but the documentation has not been updated yet. Roy Wood and J-M-S are trying hard to get all the updates out... and the new Menu Extension will be on most disks anyway.

It is rather impossible to give a fixed date, as whenever there may be a bit of time, something negative happens...

QPC2 V3.11

This is now available from the usual QPC suppliers. Registered users can download updates from the author at

www.kilgus.net

– the update is supplied as a zipped file which requires a password available to registered users to unpack the archive.

QPC2 V3.10 and v3.11 includes SMSQ/E version 3, and now boasts a new Aurora-compatible 256 colour or 8-bit colour mode, some new parallel printer control extensions, command line options for QPC startup and fixes some minor problems with earlier versions.

SMSQ/E & Keyboards

As many of you know, SMSQ/E comes with built-in keyboard layouts for English, German, French and US-keyboards. Customers ask for other keyboard layouts, but we don't have any. As some layouts are tricky (non-spacing idents etc.) it is hard to produce them. If you have produced proper layout tables and you would like to share them with other SMSQ/E users by having them built into the system, then please contact Wolfgang Lenerz or Marcel Kilgus.



JUST WORDS!

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QTP GERMAN DICTIONARY - 165,000 words - £1 or €1.50

Old spellings

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QTP NORWEGIAN DICTIONARY - 59,000 words - £1 or €1,50

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Tel: +44 (0)115 - 930 3713

email: gwicks@beeb.net

Web: <http://members.lycos.co.uk/geoffwicks/justwords.htm>

Gee Graphics! (on the QL?) - Part 34

H. L. Schaaf

A Torricelli 3 point solution

Form a triangle with the 3 points as vertices.

If any vertex of the triangle has an angle equal to or greater than 120 degrees, then that vertex is the Torricelli point.

This leaves the case where all vertices have angles less than 120 degrees. One method to solve this is to use a geometric construction:

- 1 - construct an equilateral triangle on the outside of each leg of the triangle.
- 2 - construct a line from each vertex of the triangle to the outer point of the equilateral triangle on the leg opposite that vertex. These "Simpson lines" should all have equal length and that length is the same as the sum of the distances from the Torricelli point to the 3 points.
- 3 - the common intersection of the 3 Simpson lines is the Torricelli point.

The listing "Torricelli3_bas" is intended to show the solution graphically. Options include reading from DATA statements, letting the QL put

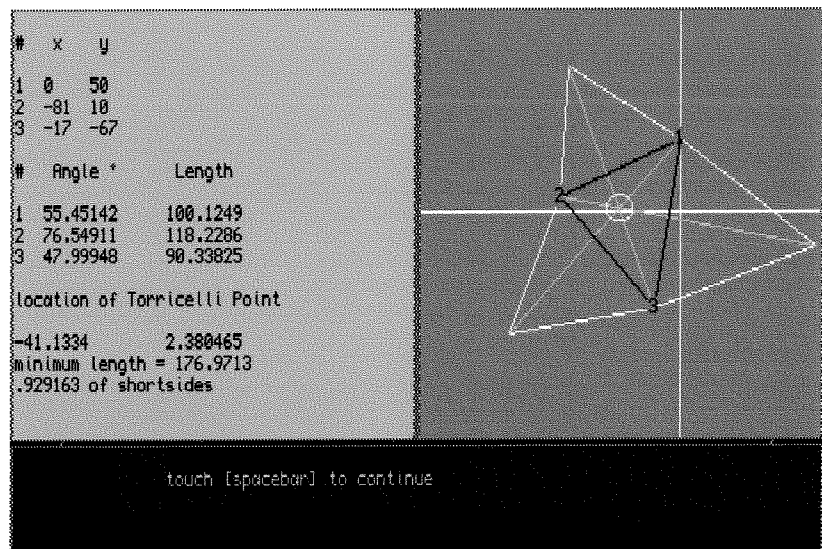
in 3 points at random, or using the keyboard to enter the x and y coordinates for the three points.

GG#24 'Circle packing' QLToday Vol 6, Issue 3, Sept/October 2001 starting on page 38 has the FuNctions that need to be merged in.

Next time, another way that lets the QL "hunt" for the answer.

Gauss's problem became known as the "Steiner" problem in 1941 due to a book "What is Mathematics" by Richard Courant and Herbert Robbins which popularized the problem. The "Steiner tree" problem for any number of points has been the subject of much research and conjecture ever since.

The 2nd edition of "What is Mathematics" was printed in 1969 with revisions by Ian Stewart. The paperback version from Oxford University Press is ISBN 0-19-510519-2.



```

100 REMark Torricelli3_bas
110 REMark H L Schaaf July 9, 2003 for GG#34
120 REMark Torricelli 3 point solution using Simpson lines
130 :
140 REMark window pixels, width and height
150 WMON : REMark 256x202a256x0 with border = 1
160 Wp_wi% = 256 : Wp_hi% = 202 : Wp_bo% = 1
170 graspix = 476/645 : IF VER$ = "JSU" : graspix = 344/549
180 INK 7 : PAPER 2 : INK #2,0 : PAPER #2,4
190 REMark vertical and horizontal range per pixel for SCALE = 100
200 V_rpp = 101/(Wp_hi%-2*Wp_bo%) : H_rpp = V_rpp*graspix
210 Wg_wi = H_rpp * (Wp_wi%-4*Wp_bo%) : REMark window graphic width
220 Wg_h2v = Wg_wi/101 : REMark graphic ratio horizontal to vertical
230 FOR i = 0 TO 2 : CLS #i : END FOR i
240 :
250 REPEAT demo
260 get_3_points : Tor3pt
270 END REPEAT demo
280 :

```

```

290 DEFine PROCedure get_3_points
300 RESTORE
310 DIM t3(3,4)
320 REMark t3 for triangle x, y, included angle, length of side
330 REMark use t3(0,0) for sum of angles == 180 degrees
340 REMark use t3(0,1) for maximum angle in degrees
350 REMark use t3(0,2) for location of greatest angle
360 INPUT#0;" [D]ata, or [R]andom, [K]eyboard or [Q]uit ? ";ans$
370 IF ans$=="Q" : CLS#0 : STOP
380 FOR i = 1 TO 3
390 FOR j = 1 TO 2
400 IF ans$ == "D" THEN
410 READ t3(i,j)
420 END IF
430 IF ans$ == "R" THEN
440 t3(i,j) = (RND * 50) - 25
450 IF j = 1 : t3(i,j) = t3(i,j) * Wg_h2v
460 END IF
470 IF ans$ == "K" THEN
480 PRINT #0;"Point #";i!!CHR$(CODE('w')+j);
490 INPUT#0;" value ? ";t3(i,j),
500 END IF
510 END FOR j
520 IF ans$=="K": PRINT #0\
530 END FOR i
540 REMark get limits for rescaling
550 min_x = 1E6 : min_y = 1E6 : max_x = -1E6 : max_y = -1E6
560 FOR i = 1 TO 3
570 max_x = MAX( max_x, t3(i,1)) : min_x = MIN(min_x, t3(i,1))
580 max_y = MAX( max_y, t3(i,2)) : min_y = MIN(min_y, t3(i,2))
590 END FOR i
600 REMark rescale window to suit input values
610 zoom = 2.5 : REMark to show equilateral constructs
620 h_range = max_x - min_x : mid_x = (max_x + min_x)/2
630 v_range = max_y - min_y : mid_y = (max_y + min_y)/2
640 image_aspect = h_range/v_range : REMark width/height
650 REMark what is relation between window and image ?
660 window2image = Wg_h2v/image_aspect
670 IF window2image >= 1 THEN
680 REMark it should fit across ok, height governs
690 win_scale = v_range * zoom
700 ELSE
710 REMark it will fit up & down ok, width governs
720 win_scale = (h_range*zoom)/Wg_h2v
730 END IF
740 gr_wi = win_scale * Wg_h2v
750 x_off = min_x - (gr_wi - h_range) / 2
760 y_off = min_y - (win_scale - v_range) / 2
770 REMark use offsets to "center" triangle
780 SCALE win_scale, x_off, y_off : PAPER 2 : INK 7 : CLS
790 END DEFine get_3_points
800 :
810 DEFine PROCedure Tor3pt
820 REMark show 0, 0, x, y axes
830 LINE x_off,0 TO (gr_wi + x_off), 0
840 LINE 0,y_off TO 0,(y_off + win_scale)
850 INK 0 : show_t3 : INK 7
860 REMark work out included angle at each point
870 FOR i = 1 TO 3
880 frm_pt = CYC(i-1,3) : to_pt = CYC(i+1,3)
890 REMark get bearings
900 brg_1 = angl_frm(t3(i,1),t3(i,2),t3(frm_pt,1),t3(frm_pt,2))
910 brg_2 = angl_frm(t3(i,1),t3(i,2),t3(to_pt,1),t3(to_pt,2))
920 incl_ang = ABS(brg_2 - brg_1)
930 IF incl_ang > 180 : incl_ang = 360 - incl_ang
940 t3(i,3)=incl_ang
950 REMark which is the greatest angle ?
960 IF t3(i,3)>t3(0,1) THEN
970 t3(0,1)=t3(i,3) : t3(0,2)=i
980 END IF

```

```

990 t3(0,0)=t3(0,0)+t3(i,3)
1000 REMark get length of side opposite vertex
1010 t3(i,4)=dist_btwn(t3(frm_pt,1),t3(frm_pt,2),t3(to_pt,1),t3(to_pt,2))
1020 END FOR i
1030 REMark get external points for Simpson line.
1040 REMark but not if >= 120' angle !
1050 IF t3(0,1) < 120 THEN
1060 DIM sim(3,4)
1070 REMark sim for Simpson lines external point x, y, slope, intercept
1080 REMark use sim(i,0) for length of Simpson line
1090 FOR i = 1 TO 3
1100 frm_pt = CYC(i-1,3) : to_pt = CYC(i+1,3)
1110 DIM bl(2,2) : REMark baseline for equilateral triangle
1120 bl(1,1)=t3(frm_pt,1) : bl(1,2)=t3(frm_pt,2)
1130 bl(2,1)=t3(to_pt,1) : bl(2,2)=t3(to_pt,2)
1140 external_point
1150 END FOR i
1160 min_len = (sim(1,0)+sim(2,0)+sim(3,0))/3
1170 tor3 = CIRCLE tors(0,1),tors(0,2), win_scale/32
1180 ELSE
1190 CIRCLE t3(t3(0,2),1),t3(t3(0,2),2), win_scale/32
1200 END IF
1210 INK 0 : show_t3 : INK 7 : REMark refresh triangle
1220 recap
1230 IF ans$<>"K" : CLS#0
1240 PRINT#0\\,"touch [spacebar] to continue"
1250 PAUSE
1260 FOR i = 0 TO 2 : CLS#i : END FOR i
1270 END DEFine Tor3pt
1280 :
1290 DEFine PROCedure recap
1300 PRINT #2\
1310 PRINT #2;"#!!" x"," y"\\
1320 FOR i = 1 TO 3 : PRINT#2; i!!t3(i,1),t3(i,2) : END FOR i
1330 PRINT #2\\;"#!!" Angle ";CHR$(186)," Length"\\
1340 FOR i = 1 TO 3 : PRINT#2; i!!t3(i,3),t3(i,4) : END FOR i
1350 PRINT #2\\;"location of Torricelli Point"\\
1360 l1 = CYC(t3(0,2)-1,3) : l2 = CYC(t3(0,2)+1,3)
1370 shortsides = t3(l1,4)+t3(l2,4)
1380 IF t3(0,1)< 120 THEN
1390 PRINT#2 ;tors(0,1),tors(0,2)
1400 PRINT#2\'minimum length = ';min_len
1410 PRINT#2; min_len/shortsides;" of shortsides"
1420 ELSE
1430 PRINT #2;" >= 120"&CHR$(186)&", at point ";t3(0,2)
1440 PRINT #2;t3(t3(0,2),1),t3(t3(0,2),2)
1450 PRINT #2;"minimum length = 2 short sides = ";
1460 PRINT#2; shortsides
1470 END IF
1480 END DEFine recap
1490 :
1500 DEFine PROCedure tor3
1510 DIM tors(3,2)
1520 FOR i = 1 TO 3
1530 tors(i,1)=-(sim(i,4)-sim(CYC(i+1,3),4))/(sim(i,3)-sim(CYC(i+1,3),3))
1540 tors(i,2)=tors(i,1)*sim(i,3)+sim(i,4)
1550 tors(0,1)=tors(0,1)+tors(i,1) : tors(0,2)=tors(0,2)+tors(i,2)
1560 END FOR i
1570 tors(0,1)=tors(0,1)/3 : tors(0,2)=tors(0,2)/3
1580 END DEFine tor3
1590 :
1600 DEFine PROCedure show_t3
1610 LOCAL i
1620 FOR i = 1 TO 3
1630 LINE t3(i,1),t3(i,2) TO t3(CYC(i+1,3),1),t3(CYC(i+1,3),2)
1640 CURSOR t3(i,1),t3(i,2),-4,-5:PRINT i
1650 END FOR i
1660 END DEFine show_t3
1670 :
1680 REMark find points for equilateral triangles for given baseline

```

TF Services

Compswitch

A UK 4-way trailing socket designed to switch off computer peripherals automatically when the computer is switched off, or (in the case of an ATX computer) when it auto-powers down. *Compswitch* has one control socket, and three switched sockets. Can be used with lights/hifi/monitors—ie a QL monitor can be used as a switch control.

Cost £24

superHermes

A major hardware upgrade for the QL
All Hermes features (working ser1/2 at 19200, independent baud rates/de-bounced keyboard/keyclick) IBM AT kbd I/F // HIGH SPEED RS232 at 57600// serial mouse port and 2 other RS232 inputs// 3 I/O lines // EEPROM

Cost (including manual/software)£90 (£92/£93)
IBM AT UK layout Keyboard.....£11 (£13/£15)
Serial mouse.....£8 (£8.50/£9)
Capslock/scrolllock LED£1 (£1.50/£1.50)
Keyboard or mouse lead.....£3 (£3.50/£3.50)
High speed serial (ser3) lead.....£4 (£4.50/£4.50)

Hermes available for £25 (£26/£27) Working ser1/2 and independent input, debounced keyboard.

SuperHermes LITE: All Hermes features (see above) + an IBM AT keyboard interface only.

Cost (incl keyboard lead)£53 (£54/£55)

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MINERVA RTC (MKII) + battery for 256 bytes ram.
CRASHPROOF clock & I²C bus for interfacing. Can autoboot from battery backed ram. Quick start-up.

QL RomDisq

Up to 8 mbyte of flash memory for the QL
A small plug in circuit for the QL's ROM port (or Aurora) giving 2, 4 or 8 mbytes of permanent storage - it can be thought of as a portable hard disk on a card, and reads at some 2 mbytes per second.
Think of it - you could fully boot an expanded QL, including all drivers/SMSQ etc off RomDisq at hard disk speed with only a memory expansion needed.

2 mbytes RomDisq.....£39 (£40/£41)
4mbytes RomDisq.....£65 (£66/£67)
8 mbytes RomDisq.....£98 (£99/£100)
Aurora adaptor.....£3 (£3.50/£4)

MPLANE

A low profile powered backplane with ROM port

A three expansion backplane with ROM port included for RomDisq etc. Aurora can be fitted in notebook case and powered off single 5V rail - contact QBranch for details. Two boards (eg Aurora and Gold Card/Super Gold Card/Goldfire) fixed to base. Suitable for Aurora (ROM accessible from outside) & QL motherboard in tower case. Specify ROM facing IN towards boards, or OUT towards back of case.

Cost£34 (£35/£36)

I2C INTERFACES

Connects to Minerva MKII and any Phillips I²C bus

Power Driver Interface 16 I/O lines with 12 of these used to control 8 current carrying outputs (source and sink capable)

2 amp (for 8 relays, small motors)£40 (£43/£44)
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http://www.firshman.co.uk

```

1690 DEFine PROCedure external_point
1700 REMark what's the slope of the baseline ?
1710 dx = (bl(2,1) - bl(1,1)) : dy = (bl(2,2) - bl(1,2))
1720 IF dx : slope = ATAN(dy/dx) : ELSE slope = PI/2
1730 IF dy : slope2 = ACOT(dx/dy) : ELSE slope2 = 0
1740 IF dx < 0 : slope = slope + PI
1750 REMark distance of base line should == t3(i,4)
1760 db = SQRT(dx*dx + dy*dy)
1770 alph = RAD(60-DEG(slope)) : beta = RAD(60+DEG(slope))
1780 ca=db*COS(alph) : cb=db*COS(beta)
1790 sa=db*SIN(alph) : sb=db*SIN(beta)
1800 REMark 2 checks for one side of line
1810 REMark from pt1
1820 c1x=bl(1,1)+ca : c1y=bl(1,2)-sa
1830 REMark from pt2
1840 c2x=bl(2,1)-cb : c2y=bl(2,2)-sb
1850 ex1=(c1x+c2x)/2 : ey1=(c1y+c2y)/2
1860 REMark 2 checks for other side of line
1870 REMark from pt1
1880 cx1=bl(1,1)+cb : cy1=bl(1,2)+sb
1890 REMark from pt2
1900 cx2=bl(2,1)-ca : cy2=bl(2,2)+sa
1910 ex2=(cx1+cx2)/2 : ey2=(cy1+cy2)/2
1920 REMark which point is outside the triangle ?
1930 REMark ie, which is further from t3(i)?
1940 d_1=dist_btwn(ex1,ey1,t3(i,1),t3(i,2))
1950 d_2=dist_btwn(ex2,ey2,t3(i,1),t3(i,2))
1960 IF d_1 > d_2 THEN
1970 sim(i,1)=ex1 : sim(i,2)=ey1
1980 ELSE
1990 sim(i,1)=ex2 : sim(i,2)=ey2
2000 END IF
2010 REMark show external equilateral triangle
2020 POINT sim(i,1),sim(i,2) : LINE TO bl(1,1),bl(1,2)
2030 LINE TO bl(2,1),bl(2,2) : LINE TO sim(i,1), sim(i,2)
2040 REMark show Simpson line
2050 INK 4 : LINE sim(i,1),sim(i,2) TO t3(i,1),t3(i,2)
2060 REMark show triangle
2070 INK 7 : show_t3
2080 sim(i,3) = pts2mb(sim(i,1),sim(i,2), t3(i,1),t3(i,2))
2090 sim(i,4) = b
2100 sim(i,0)=dist_btwn(sim(i,1),sim(i,2),t3(i,1),t3(i,2))
2110 END DEFine external_point
2120 :
2130 REMark convert 2 points of a line to y = mx + b
2140 DEFine FuNction pts2mb (x1,y1,x2,y2)
2150 m = (y2-y1)/(x2-x1) : b1 = y1-(m * x1) : b2 = y2-(m * x2)
2160 b = (b1 + b2)/2
2170 RETurn m
2180 RETurn b
2190 END DEFine
2200 :
2210 REMark DATA for 3 cities in GG#33
2220 DATA 0, 50, -81, 10, -17, -67
2230 :
2240 :
2250 :
2260 REMark merge in CYC, angl_frm, dist_btwn, MIN, MAX, etc.
2270 REMark see GG#24, Vol.6, Iss.3, Sep/Okt 2001, p.38
2280 :
2290 REMark end of listing Torricelli3_bas

```

The parts that would be merged:

```

2300 :
2310 REMark angl_frm
2320 DEFine FuNction dist_btwn(xpt,ypt,x,y)
2330 REMark distance between two points xpt,ypt as point of origin
2340 xdis = (x-xpt) : ydis = (y-ypt)

```

```

2350 sqdist = ((xdis*xdis)+(ydis*ydis))
2360 IF sqdist > 0 THEN
2370 dbtw = SQRT(sqdist)
2380 ELSE
2390 dbtw = 0
2400 END IF
2410 RETURN dbtw
2420 RETURN xdis
2430 RETURN ydis
2440 END DEFine :REMark FN dist_btwn(xpt,ypt,x,y)
2450 :
2460 DEFine FuNction angl_frm(xf,yf,xt,yt)
2470 REMark angle in degrees from origin(xf,yf) to (xt,yt)
2480 REMark --> = 0' or 360', @ = 90', <-- = 180', = 270'
2490 IF dist_btwn(xf,yf,xt,yt) = 0 THEN
2500 PRINT #0;"same spot!" :PAUSE 20:spolangle = 0
2510 END IF
2520 qdx=1 :qdy = 2
2530 IF ydis<0 : qdy=qdy+2
2540 IF xdis<0 : qdx=qdx+2
2550 qprd = qdy*qdx : qsum =qdy+qdx+qprd
2560 quadA = ((INT((qsum+1)/3))/2)
2570 quadB = (quadA-INT(quadA))*5
2580 quad = quadB+quadA :REMark Trig quadrant I, II, III, or IV
2590 IF dbtw<>0 THEN
2600 sinrat = ydis/dbtw
2610 IF sinrat > 1 THEN sinrat = 1
2620 IF sinrat < -1 THEN sinrat = -1
2630 sangle = DEG(ASIN(sinrat))
2640 SElect ON quad
2650 = 1 :spolangle = sangle
2660 = 2 :spolangle = 180-sangle
2670 = 3 :spolangle = 180-sangle
2680 = 4 :spolangle = 360+sangle
2690 = REMAINDER : PRINT #0;"quad error arcsine":STOP
2700 END SElect
2710 END IF
2720 :
2730 angle_from = spolangle
2740 RETURN angle_from
2750 RETURN quad
2760 END DEFine :REMark FN angl_frm(xf,yf,xt,yt)
2770 :
2780 DEFine PROCedure SWAP (n1,n2)
2790 n1 = n1 + n2
2800 n2 = n1 - n2
2810 n1 = n1 - n2
2820 END DEFine SWAP
2830 :
2840 DEFine FuNction CYC (Number%,cycle_length%)
2850 REMark cyclic modular with option base = 1 vs option base 0
2860 REMark Number% is an integer number
2870 REMark cycle_length% is the Length of the cycle
2880 RETURN ((Number%-1) MOD cycle_length%)+1
2890 END DEFine CYC
2900 :
2910 DEFine FuNction SGN(n)
2920 RETURN (n>0) - (n<0)
2930 END DEFine SGN
2940 :
2950 DEFine FuNction MAX(a,b)
2960 RETURN a*(a>b)+b*(b>a)+a*(a=b)
2970 END DEFine
2980 :
2990 DEFine FuNction MIN(a,b)
3000 RETURN a*(a<b)+b*(b<a)+a*(a=b)
3010 END DEFine
3020 :

```

QLTDis Part 10

Norman Dunbar

Here we are again

After an absence of a couple of issues, I'm back again. I'm in the middle of a small problem here at home and at work whereby I no longer have access to a Zip drive so I am unable to get at my wandering version of QPC where all my source code lives. This was the primary cause of there not being an article in the last issue – but who knows, maybe that pleased some of you!

Anyway, I'm back again, still without Zip drive, but I found an older version of QPC on my hard drive and although it is not quite as up to date as the Zip drive is, it is workable for now.

In the last episode, I left you in a position of having finished entering the last bit of code to do the instruction decoding. You should now have a working version of QLTdis to play with. Obviously, there are bits we still need to sort out such as the ability to write to the printer file as well as the screen. That comes in a future article. For now, here are some more corrections!

As ever, there are bugs!

If you remember back to a previous article which I know as part 8, then you will have been told of a fix to the type_24 code because I had found that ADDX/SUBX were being wrongly decoded as a type 24 instead of a type 30.

The fix I gave you was to check bits 8, 5 & 4 for 1, 0 & 0 as this applied to ADDX/SUBX only and not to any other of

the ADD/SUB instructions. Well, I have to admit that I was probably smoking something strange when I figured that lot out (I may just have been tired as I don't smoke!) because it is completely and utterly wrong! The fix I gave results in instructions like ADDA.L A6,A4 being decoded as ADDX8? -(A6),-(A4) where the '?' is a blotch character on the screen. This is simply because the fix decoded the instruction as a type 30 ADDX when in actual fact it is ADDA, but ADDX doesn't allow the size bits to both be 1 whereas ADDA does!

The correct fix that I should

have given you is to test bit 8, if it is clear then this cannot be ADDX or SUBX because bit 8 is always set in those instructions. Assuming that bit 8 is set, then if bits 7 and 6 are both set, then again this cannot be ADDX/SUBX as these are never both set in those instructions.

At this point we have bits 876 set to 100, 101 or 110 which you can see from the table below could be ADDX/SUBX or ADD/SUB so now we test bits 54 for 00 and if found, we must have an ADDX/SUBX because this combination of bits is not permitted in ADD/SUB. Easy or what?

```
*
* TYPE_24 the ADDs and SUBs. We need to trap ADDX and SUBX here as well and,
* if found, redirect to type 30 below. This can be done by checking as
* follows:
*
* IF BIT_8 = 0 THEN
*     Jump over further ADDX testing as it cannot possibly be ADDX
* ELSE
*     IF BITS_76 <> 11 THEN
*         IF BITS_54 <> 00 THEN
*             Jump over further ADDX testing as it cannot possibly be ADDX
*         ELSE
*             Do the ADDX setup so that type_30 works
*             Jump to type_30 processing
*         END IF
*     END IF
* END IF
*
* The following table shows all permutations of bits 876 and all possible
* op-codes that can have that specific value. The code above will work based
* on the table below.
```

Bits 876	Possible OP-CODE	Bits 54 Tested ?
000	ADDI ADDQ ADD	
001	ADDI ADDQ ADD	
010	ADDI ADDQ ADD	
011	ADDA.W	
100	ADDX ADD	00 = ADDX else ADD
101	ADDX ADD	00 = ADDX else ADD
110	ADDX ADD	00 = ADDX else ADD
111	ADDA.L	

```
*
* Of course, where I have put 'ADD' I also mean 'SUB' – just in case you were
* wondering.
```

```
*
dtype_24
    btst    #8,d0          ; If bit 8 is zero, cannot be ADDX/SUBX
    beq.s   t24_not_t30    ; Easy bit done.
```

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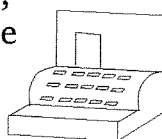
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```

move.w  d0,d4          ; Using D4 later with the op-code word

andi.w  #$00c0,d0      ; Mask out bits 7 & 6 of the op-code
cmpi.w  #$00c0,d0      ; Both set ?
beq.s   t24_not_t30     ; No, skip over type 30 stuff

t24_type_30
andi.w  #$0030,d4      ; Preserve only bits 5 & 4 of the op-code
bne.s   t24_not_t30     ; If not both unset, skip ADDX/SUBX setup
move.w  d7,d0          ; Retrieve the op-code again
move.w  d0,d4          ; Working register
andi.w  #$f000,d4      ; Keep top 4 bits only
cmpi.w  #$9000,d4      ; SUBX ?
bne.s   t24_addx       ; No, skip

```

The remainder of the type_24 code is correct, only the above needs to be changed.

Debugging with QMON2.

Ok, the above code is correct and works, but it didn't originally. Everything was being decoded as ADD or SUB even when I tested a file containing ADDX and SUBX instructions. What was going wrong? Well the original code looked like the following:

```

dtype_24
btst    #8,d0          ; If bit 8 is zero, cannot be ADDX/SUBX
beq.s   t24_not_t30     ; Easy bit done.
move.w  d0,d4          ; Using D4 later with the op-code word

andi.w  #$00c0,d0      ; Mask out bits 7 & 6 of the op-code
cmpi.w  #$00c0,d0      ; Both set ?
bne.s   t24_not_t30     ; No, skip over type 30 stuff

```

As the original programmer of this code, when I read through it, everything seemed fine – as it always does – but obviously, something was amiss. The rest of this exciting article, is a brief foray into the art of debugging using QMON2.

QMON2 is Tony Tebby's original disassembler/monitor tool which allows a QDOSMSQ job code or SuperBasic extension or CALLED code to be debugged by single stepping through the guts of the code until you find the bit that isn't doing what it is supposed to be doing.

I have been using QMON2 to help me debug code for years and although I don't use it as often as I should perhaps, I do happen to like it quite a lot. It seems, unfortunately, that it is no longer available in its English format as Digital Precision still hold the rights to the program – as far as I am aware – but in Germany, you can get a copy from Jochen. Actually, you can get a copy from Jochen in any country in the world, provided you are able to read and understand German manuals :o)

QMON2 is fine, but as we don't yet have anything like a source code debugger on the QL, it is a bit difficult to figure out where to put breakpoints in your code so that you don't spend ages single stepping through code you know works to find the bit that doesn't work.

George Gwilt has provided a little help here, so not only does he supply you with a neat little assembler but he also gives you help in debugging as well.

When you have assembled the code for QLDis there is a listing file created with the _LST extension, but another file is created with a _SYM extension. This file holds the goodies we need to debug.

The SYM file is binary and holds a list of all your equates in it, plus a list of all the program labels and their offset from the start of the program. So, if you think that you have a bug in a specific routine, all you have to do is decode the SYM file to extract the routine's offset from the start of the program and set a breakpoint at that place in the code. The problem is, how exactly do you decode the binary file ?

George does not document the SYM file format, so you could assemble a few routines and see if you can make any sense of the binary file, but there is a much easier way. Simply by running the SYM_BIN program supplied with GWASL you feed it a SYM file and it spits out a text file holding all the data you will ever need. The output file is named the same as the SYM file but with a further _LST extension, so I have 'dev2_source_qltdis_sym.lst' as my file.

The following is a small extract from this file on my system. Yours may well look different, but don't worry if it does. The first part of the file matches up with my equates:

CON_ID	EQU	\$00000000
CON_ID2	EQU	\$00000004
PRT_ID	EQU	\$00000008
PC_ADDR	EQU	\$0000000C
PC_END	EQU	\$00000010
BLACK	EQU	\$00000000
RED	EQU	\$00000002
GREEN	EQU	\$00000004
WHITE	EQU	\$00000007
LINEFEED	EQU	\$0000000A
OOPS	EQU	\$FFFFFFFF
ERR_NC	EQU	\$FFFFFFFF
INFINITE	EQU	\$FFFFFFFF
ME	EQU	\$FFFFFFFF

Then we get to the nitty gritty, the labels I have used in my source code and their offsets from the start of the program. The first one is my label 'start' and it is actually the very first instruction in the file, so it has offset zero. Following on are all the other labels I used.

START	EQU	*+\$00000000
QLTDis	EQU	*+\$00000010
JOB_INIT	EQU	*+\$0000003E
EXIT	EQU	*+\$0000003A

... a few dozen lines removed for brevity!

DTYPE_23	EQU	*+\$00000B9A
DTYPE_24	EQU	*+\$00000BAC

... another few dozen lines removed for brevity!

We can see that regardless of the start address of the program when loaded into memory (by QMON2 or JMON2) we can still work out where the code for the DTYPE_24 routine, for example, starts simply by adding \$0BAC to the actual start address of the program.

The following is a small session showing how I debugged through my DTYPE_24 routine to fix the above mentioned problem.

So, to set the scene, I have edited the source code for the type 24 instructions, assembled QLTdis and produced a new listing of the SYM file. I've looked through the listing and found that my entry point for DTYPE_24 is at offset \$0BAC. I then start up JMON2 (in this case, but QMON2 is exactly the same):

```
jmon 'win1_source_qltldis_qltldis_bin'
```

If you try this and get an error, make sure you have LRESPR'd the JMON_BIN code for JMON2 or the QMON_BIN code for QMON2 depending on which one you want to use.

When the monitor appears, the very first instruction in the job has already been executed, so I could be anywhere in the job file. Because I have written the code myself, I know what the very first instruction is, it is 'BRA.S QLTDis'. Because I know this, I know that the instruction I am looking at must be the code at label 'QLTDis'.

If I was debugging some other code that I did not have the original nicely commented source files for, then I would not know where I was in the actual job, or extension, as the first instruction could have sent me off into any location in its own code or even into the ROM.

In this case I have jumped from label 'START' to label 'QLTDis' and there are quite a few bytes between the two labels. QMON is showing me a register dump and the address of, the op-code word and the next instruction to be executed. For the sake of brevity, I've omitted the register dump itself.

```
1A0EB8 6100 BSR.L $1A0EE6
```

So, I'm somewhere in the code for QLTdis, but where. I know I'm at the instruction at address \$1A0EB8 but what is the start address of the job itself?

The QMON command 'C' will calculate an address and the option 'S' will display the start address of the job.

```
QMON> C S
001A0EA8      1707688
```

This is the Hexadecimal and decimal values for the start of the QLTdis job I'm trying to debug. How can I be sure? Try dissassembling the start address for a couple of instructions:

```
QMON> DI S 5
1A0EA8 600E BRA.S $1A0EB8
1A0EAA 0000 ORI.B #0,D0
1A0EAE 4AFB ILLEGAL
1A0EB0 0006 ORI.B #$4C,D6
1A0EB4 5464 ADDQ.W #2,-(A4)
```

The first line is the one to look at, it shows a branch to address \$1A0EB8 that QMON was showing me originally as the second instruction to be executed. So, the 'S' value does appear to be my label for 'START' and this is what I want.

So, I know that the routine I want to check out is 'DTYPE_24' and that it is at an offset of \$0BAC

from start, what address is this? Again using the C command to calculate an address, I do this:

```
QMON> C S+$OBAC
001A1A54      1710676
```

I now know where my routine starts, again, to check that it is so, I can disassemble the first few instructions:

```
QMON> DI S+$OBAC 5
1A1A54 0800 BTST  #8,D0
1A1A54 6732 BEQ.S $1A1A8C
1A1A54 3800 MOVE.W D0,D4
1A1A54 0240 ANDI.W $C0,D0
1A1A54 0800 CMPI.W $C0,D0
```

this looks remarkably like the correct code to me, so I can now set a breakpoint at this address and let QMON tell me when I get there. Of course, if I was debugging someone else's code, I wouldn't have a handy list of offsets into the program, so I would have to run through it step by step until I found out where the code I wanted to check was. Once I'd reached that stage, I would make a note of the address and calculate the offset from the start so that I could easily set a breakpoint there on my next foray into the debugging session. It's much easier when you have the source!

Anyway, I set a breakpoint as follows using the 'B' command.

```
QMON> B S+$OBAC
BRP 1A1A54
```

I could also have simply used the calculated address from earlier by typing 'B \$1A1A54' which would have had the same effect. Note that if I set a break point at the same address it will delete the breakpoint at that address. The 'B' command is a toggle.

Again, this is what my code originally looked like when I was debugging the fix for this instruction type:

```
dtype_24
  btst    #8,d0      ; If bit 8 is zero,
                    ; cannot be ADDX/SUBX
  beq.s   t24_not_t30 ; Easy bit done.
  move.w  d0,d4      ; Using D4 later with
                    ; the op-code word
  andi.w  #$00c0,d0  ; Mask out bits 7 & 6
                    ; of the op-code
  cmpi.w  #$00c0,d0  ; Both set ?
  bne.s   t24_not_t30 ; No, skip over type
                    ; 30 stuff
```

Now I'm ready to go, so I simply type the QMON go command which is 'G'.

```
QMON> G
```

The 'G' command means, Go until you hit a breakpoint or finish the program. It causes the program to run at nearly full speed. This means I get all the clear screens and prompts etc that I would normally get when running the program without the debugger. I therefore need to enter a start address and so on to get the disassembler to start working.

I have already loaded a file of assembled ADDX and SUBX instructions into an area of memory that I allocated with ALCHP and I have its address written down on paper – my own memory is a bit random these days.

After I have typed in the start and end addresses (and the printer device) I return to the QMON prompt with a register dump and the address, hex code and decoded instruction for the next instruction to be executed:

```
At brp SR 0000 —0——— SSP 00028480
D0-D3 0000D300 01BC0924 0000003C FFFFFFFF
D4-D7 0013FFFF 00000000 00000003 0013D300
A0-A3 004C0016 001A1601 001A11DD 001A1130
A4-A7 001A2362 001A11DD 0013A3C8 001A32Fa
1A1A54 0800 BTST  #8,D0
QMON>
```

Taking the above a section at a time, we have this first:

```
At brp SR 0000 —0——— SSP 00028480
```

This is telling me that I'm stopped at a breakpoint – 'at brp' – and the contents of the status register in hex – 0000. Next to that is the interrupt mask value – 0 then 5 dashes showing the current state of the CCR flags. As all are showing dashes, none of the flags are set. Finally, there is the current value of the 'alternative' stack pointer. In this case I'm running in user mode, so I can see the SSP (supervisor stack pointer) value.

Below the status line is a register dump showing the current values of all data and address registers.

```
D0-D3 0000D300 01BC0924 0000003C FFFFFFFF
D4-D7 0013FFFF 00000000 00000003 0013D300
A0-A3 004C0016 001A1601 001A11DD 001A1130
A4-A7 001A2362 001A11DD 0013A3C8 001A32Fa
```

In my case I have the registers split over two lines each for data and address values. This depends on the width of the channel to which QMON2 is writing the register dump.

Below the register dump is the address, the op-code word and the disassembled instruction for the next instruction to be executed. Under that is the QMON2 prompt.

```
1A1A54 0800 BTST #8,D0
QMON>
```

Back to the debugging session. I want to know what is causing my ADDX instructions to be decoded as ADD. So, I have my source listing for Type_24 instructions, and because I've hit the breakpoint I set, I know that an ADDX is coming through the type_24 decoding routine before jumping into the type_30 decode - or is it? I need to find out.

The register dump shows me the op-code in D0.W and also in D7.W, it is \$D300 which is ADDX D0,D1. The op-code in binary is as follows, the bit numbers are in HEX above the individual bits themselves:

```
0      8      4      0
1101 0011 0000 0000
```

Lets trace through the code and see what happens. Remember that the next instruction to be executed is showing just above the QMON prompt, so when I enter the 'T' for Trace command, I will be executing the instruction 'BTST #8,D0'. Let's do it.

```
QMON> T
SR 0000 —0——— SSP 00028480
1A1A58 6732 BEQ.S $1A1A8C
QMON>
```

I'm not showing the register dumps, unless there is anything of interest in the registers. This helps cut down on the amount of paper Jochen needs to buy to get the magazine printed!

We have tested bit 8 of D0 and found that it is not zero because the Z flag is not showing in the list of flags. This has to be an ADDX, ADD or an ADDA.L instruction (see the table in my explanation of type_24 decoding above). Let's step again.

```
QMON> T
```

```
SR 0000 —0——— SSP 00028480
1A1A5A 3800 MOVE.W D0,D4
QMON>
```

Nothing of interest here, step again :

```
QMON> T
SR 0008 —0-N—— SSP 00028480
1A1A5C 0240 ANDI.W #$C0,D0
QMON>
```

Now it's starting to get interesting, the 'N' flag is showing after we moved D0.W to D4.W - this shows that the most significant bit of the new value in D4.W is set and thus the value in D4.W is negative (if using signed arithmetic!). This is how QMON displays flags which have been set, the flag letter is displayed on the 'SR' line.

Step again:

```
QMON> T
SR 0004 —0—Z— SSP 00028480
D0-D3 00000000 01BC0924 0000003C FFFFFFFF
D4-D7 Ommitted
A0-A3 Ommitted
A4-A7 Ommitted
1A1A60 0C40 CMPI.W #$C0,D0
QMON>
```

So, we have set the Z flag because D0.W is now holding zero (Although D0.L is holding zero, the upper word was already zero only the lower word has changed because the instruction just executed ANDed a word value with D0.W) The next instruction is waiting to be executed so lets do it. Step again:

```
QMON> T
SR 0009 —0-N—C SSP 00028480
1A1A64 6626 BNE.S $1A1A8C
QMON>
```

It looks like we are going to take the branch as the Zero flag is not set. Lets remind ourselves of what the original source code looked like again:

```
dtype_24
    btst    #8,d0          ; If bit 8 is zero,
                           ; cannot be ADDX/SUBX
    beq.s   t24_not_t30    ; Easy bit done.
    move.w  d0,d4          ; Using D4 later with
                           ; the op-code word
    andi.w  #$00c0,d0      ; Mask out bits 7 & 6
                           ; of the op-code
    cmpi.w  #$00c0,d0      ; Both set ?
    bne.s   t24_not_t30    ; No, skip over type
                           ; 30 stuff
```

So you can see where we have single stepped through the above code, and we are just about to jump to label 'T24_NOT_T30' because this instruction is not a type_30. Except, we know that it is an ADDX instruction because that is what I was testing, and ADDX is a type_30, so what have I done wrong?

I have tested bits 7 and 6 and found them both to be zero (because the Z flag was set after I stepped through the ANDI.W \$C0,D0 instruction. This means that the jump should not be taken to T24_NOT_T30 because I have not yet ascertained that the instruction is not an ADDX. With bits 7 and 6 set to 00, I could be looking at ADDX or ADD. I should not be taking the jump until I have further tested the value in bits 5 and 4 as per my algorithm above.

This could be why the ADDX is being decoded as ADD, because I have the wrong condition in my test. In order to fix this, I have to change the source code, re-assemble and try my test again. I do this without the QMON2 first of all and if it still fails, I can use QMON2 to try and find out why again. I need to give the current job a 'G' instruction and then I can ESC from the decoding and exit the program.

I shall go do that and report back. Hang on here for a bit

Ok, I'm back. I made the change from 'BNE.S' to 'BEQ.S' and it worked fine. So it looks like I have correctly identified the bug. I need more testing though to make sure I cover all possible op-codes. I have followed up my ADDX testing by passing test files which have ADD, ADDA, ADDQ and ADDI instructions, along with assorted SUB variants and all appears to be working well.

So there you have it, an example of how I manage to get my code wrong and how I can use the tools available to try to sort it out. As I mentioned earlier, QMON2 is available from Jochen for a small fee, but only if you understand German manuals.

Laurence (Lau) Reeves has a different version of QMON2, written by himself, which fixes some bugs but I don't know if this is widely available or if it comes with a manual. Perhaps he could be persuaded to part with it or make it available - who knows. I'm not sure if he ever wrote a manual for it though.

See you next time.

Programming QPTR in SBASIC

W. Lenerz

Second Part - Displaying Windows

OK, by now I don't really know what part of this series we're in anymore... (Kudos to Herb Schaaf for keeping his numbers up!). However, we've arrived at the second section of this little walk-through.

Once we've defined our window, it's time to put it up on the screen. Do not forget that the first window to be opened is very important - it is the primary window, and all other windows (the secondary windows) must be within that primary window. The keywords for bringing windows onto the screen may be grouped into several sections: first, how to display the window in itself (I), then changing something within the window (II) and, last but not least, opening channel(s) within the window.

In the following explanations, I shall try to keep variable names coherent with what has gone

before, whenever the same variables are to be used.

I - Displaying the window

There are two purposes for this. The main purpose, of course, is to display the content of the window. Second, one wants to make the window "managed" by the Pointer Environment. Indeed, only a window properly managed by the Pointer Environment may profit from all of the advantages granted by that Environment.

There are two keywords for displaying windows in the Pointer Environment. There is also a keyword to make an already existing window a "managed" window. Attention, we're talking about displaying the main (primary and secondary) window itself, not the sub-windows. There is no keyword to display the subwindows specifically - they are displayed automatically with the primary or secondary window.

A - making an existing window "managed"

The command "OUTLN" (OUTLiNe) makes an existing window managed and makes the Pointer Environment aware of the window. The window concerned is one opened with a normal "OPEN" command.

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Come to the Irish Show at the end of August – see the Show info in the magazine.

The syntax of OUTLN is as follows:

```
OUTLN [#channel,]xs,ys,xo,yo
```

The parameters are the same as for a normal open command: the window x and y sizes and the window x and y origins. "channel" is channel #1 by default.

Please note that, when working in S*Basic, the normal Basic windows (channels #0, #1 and #2) are not managed by the Pointer Environment in an automatic way.

However, for a successful programming session with QPTR under S*basic, channel #0 (Basic's "primary" window) must be managed by the Pointer Environment. Thus, channel #0 MUST be managed by the Pointer Environment at the start of the programming session - just use OUTLN for that.

If you don't do that, you will get many a bad surprise, as, notably, the pointer will not be read correctly, and your loose items will seem not to function correctly.

B - Displaying the window

Putting the window up on the screen is achieved with two commands: **DR_PPOS** and **DR_PULD**, standing respectively for "**DR**aw **P**rietary and **P**OSition" and "**DR**aw **P**ULDown window". These are commands, not functions. They are very similar, being responsible for displaying the window on the screen and making it managed by the Pointer Environment. The difference is that DR_PPOS is used only for primary windows, and DR_PULD is used for secondary windows (also called pulldown windows, hence the name of the command). Moreover, DR_PPOS can use a channel parameter, while DR_PULD doesn't (the channel is opened automatically by that command).

The entire parameter list for the commands is:

```
DR_PPOS [#channel,] workdef, xpos%, ypos%,  
liflags%, appflags% [, xctrldef%, yctrldef%]
```

As mentioned above, the optional channel parameter does not apply to DR_PULD.

- > * **Workdef** is the working definition as returned by MK_WDEF
- > * **xpos%** and **ypos%** are integers which determine, in a very roundabout fashion, the position of the window. Indeed, obtaining the window's initial position is a bit counter-intuitive: xpos% and ypos% do not determine the x and y position of the upper left

hand of the window as could have been expected. In fact, x and y determine the place where the POINTER will be on the screen once the window is drawn. The window is then drawn around this pointer position in such a way that the pointer is located at a predefined location within the window!

Indeed, we saw earlier that one of the parameters of the **MK_WDEF** command is the initial pointer position of the pointer within the window. Thus, when the primary window is drawn, the sequence of events, for the positioning of the window, is as follows:

The pointer is set to the xpos%, ypos% position given as parameter to the DR_PPOS command. Then the initial pointer location of the pointer within the window is looked up. After that, the primary window is drawn around the pointer in such a way that the pointer is located exactly where it should be within the window. As mentioned above, a pretty roundabout way of handling things...

Of course, determining where the window will effectively be drawn is easy, and can be calculated as xpos%-x and ypos%-y, where xpos% and ypos% are the parameters to the DR_PPOS command, and x and y are the parameters to the MK_DEFK function.

As can be expected, this pretty complicated way of positioning the window does have a reason - it is possible to set the xpos% and ypos% parameters to -1. In this case, the window will be drawn in such a way that the pointer is not moved at all. This is to make sure that windows can appear where the pointer is, so that the user's focus (which is generally on the pointer) doesn't need to change.

As a general way of doing things, this makes sense. The only difficulty arises when one wants a window to appear at a predefined position. I personally find the calculations to be made to ensure that the window appears at a certain position too complicated. So what I generally do when a window must appear at a certain position, is to set the initial pointer position within the window to 0. That way, the xpos% and ypos% parameters to DR_PPOS do determine the point where the window will be placed. After that, I just set the pointer position within the window with another QPTR command...

→ * **liflag%** is an integer array of DIMension (n-1) where n is the number of loose items the window contains. The array is used as a flag array, where each element of the array is a flag containing the statuses of the items - you might remember that each item can have several statuses (selected, available, unavailable and current item). When the window is drawn (and also later when the pointer is read) you will have to determine what status each item is to have - some items may be unavailable initially, or selected etc... This, of course depends entirely on the program. For a file copier, for example, the "Copy" item might remain unavailable for as long the the user hasn't chosen source and target directories.

Each loose menu item corresponds to one element in the array: **liflag%(0)** is for the first item, **liflag%(1)** for the second and so on. The values these flags can have are pretty simple, as follows:

- 0 : the item is available
- 16 : the item is unavailable
- 128 : the item is selected.

There is no special value to indicate the current item, because the Pointer Environment itself automatically determines what item is the current item and then draws the border around it, and this depending on the pointer position. Thus, if you wish for any particular item to be the current item as soon as the window is displayed, you must set the pointer to such a position that it is "within" this item.

As the DIMension of the **liflag%** array depends entirely on the number of loose items, it is recommended to DIM this array at the same time one establishes the loose menu item list, because at that time one knows exactly how many loose items there are in the window.

→ * **appflag%** is the same thing as **liflag%**, but for the menu application window(s): there again, each object of a menu application window may have several statuses (the same ones as for loose menu items). There is one array per application subwindow, and they are DIMmed as follows: **DIM appflag%(row-1,sec-1)** where **row** is the number of rows for all of the objects and **sec** is the number of sections. If there only is one section, then one uses **DOM appflag%(row-1,0)**.

→ * **ctrldefx%** is, again, an integer array of DIMension **ctrldefx% (maxsec%,2)** where **maxsec%** is the number of sections as defined in the x control definition (horizontal). The values of this array are a bit special, as follows:

(0,0) contains the number of control sections (i.e. **maxsec%**).

(0,1) contains 1 if the control definition just changed, else 0.

Then, for each control section i:

(i,0) contains the start pixel position.

(i,1) contains the number of the first row shown.

(i,2) contains the number of rows in this section.

→ * **ctrldefy%** is, you will have guessed, the same thing for vertical sections and columns, instead of horizontal sections and rows.

Please note that the two last parameters are optional: if there is no control definition, they may be omitted or simply set to 0. However, there will be as many flag and definition arrays as there will be menu application subwindows (of course, they are not necessary for simple application subwindows). If you have several application subwindows, you may omit the flag arrays for those where you don't need them.

These are all of the parameters for the two commands, **DR_PPOS** and **DR_PULD**. Both commands are similar, they display a managed window on the screen. As was mentioned above, the main difference between these two commands is that **DR_PPOS** is used for the primary window, whereas **DR_PULD** is used for secondary windows. **DR_PPOS** can use a CON channel (which must have been opened beforehand, the default channel being #1).

The problem with that is that **you have no channel number for secondary windows**. Indeed the **DR_PULD** command opens a window and a channel by itself (a channel of type CON) - but this channel is NOT accessible from S*Basic. There is no Basic channel number corresponding to the window opened by **DR_PULD**. This is different for **DR_PPOS** which can use a channel in which all the normal operations (PRINT etc) can be made. Thus, **DR_PULD** opens an inaccessible channel.

Moreover, there may be a certain number of problems when compiling. Indeed, in S*basic, one can practically not use the **DR_PPOS** command, as that would mean opening a primary window. But, as we have seen, window #0 of S*basic should be the primary window for the S*Basic job, and a job cannot have two primary windows. Channel #0 was made the primary window with the OUTLN command. Thus, in interpreted basic, you will rarely use the DR_PPOS keyword.

There are two consequences to this:

First, if the program is to be compiled later on, one should include some lines along the following:

```
IF compiled
  OPEN#1,"CON_"
  DR_PPOS (parameters)
ELSE
  DR_PULD (parameters)
END IF
```

Thus, you open a channel #1 (which for nearly all commands is an implicit channel) in a compiled program, and then you open a primary window. In

interpreted Basic, you open a secondary window. Second, there may be a positioning problem when displaying secondary windows: indeed, like for primary windows, the positioning of the secondary window is achieved via the xpos% and ypos% parameters, which were described above. However, for secondary windows, these parameters contains the true coordinates (no muckling about with the pointer position here) where the window will be displayed. This however means that you cannot know where within the primary window the secondary window will open - the user may have moved the primary window from its original position.

Of course, there is a solution, as you can use the pointer positioning. If xpos% and ypos% are given as -1, the secondary window will open at the pointer position. You can thus set the pointer within the primary window to a certain position and then open the secondary window.

Ok, this is it for this time - in the next instalment we'll cover changing a window once it has been displayed. Is there anybody out there reading this series at all?

3D Perspective Animation - Part 3: Trees

Stephen Poole

In QL Today of march 2003, I mentioned trees as part of 3D Perspective Animations, but omitted the code to draw these from the article. This article will set that right. First of all, I must apologise to readers for not having divided my various 3D programs into modules, which would have meant less typing each time. This is because I did not expect to print so many articles from the start, otherwise I would have planned things out better. Mea Culpa!

In 1988, a french magazine printed an article entitled 'Growth of Plants' for the Atari ST. This 'interesting' program allows you to enter strings of

characters which control the mathematical properties of plant-growth, but, patently, the code doesn't work, even on the ST. (I have probably lost hundreds of hours typing in programs from magazines that rarely work, even after a considerable ammount of debugging. One wonders if the magazines possess the necessary computers to test them on.

[Screenshot attached, to show that we run the programs - Editor] But nowadays published programs are rather a rarity). I have also a book called 'Patterns in Nature' which describes plant growth, but unfortunately does not describe the formula for graphic

output. So I had to write my own method from scratch, and decided to draw bifurcation diagrams viewed at an angle, with leaf-production by random plotting, and the result was satisfactory enough for my needs. For more details on simple binary-trees, see the forthcoming article in Quanta.

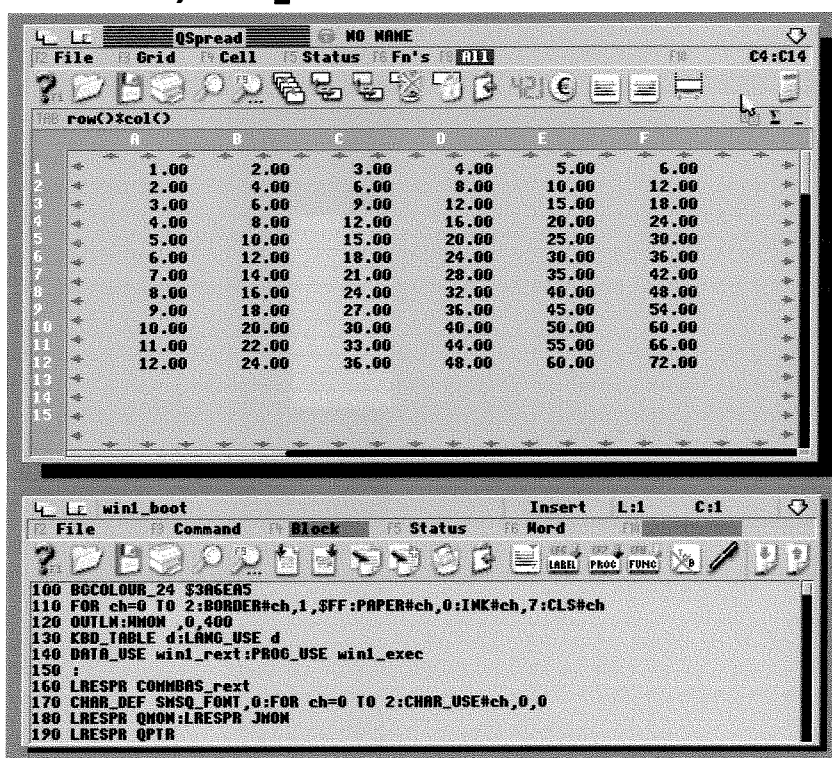
This program has been eventful for me as for the last 20 years I have been working uniquely on a monochrome monitor. So I promised Jochen I would link up my JS to our television set and experiment with 4 and 8 glorious colours (to improve the otherwise psychedelic output). However, I still prefer the look of the trees on my monochrome monitor, as 4 or 8 colours don't give sufficient graduations for my liking. No doubt GD2 is the answer... Remember that these trees are flat, so they must be drawn at an angle. They could be

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<http://smsq.j-m-s.com>

Updates, Updates...

...Well, we're getting closer now. It seems, I was a bit too optimistic, although the programs were more or less ready by the end of February. However, SMSQ/E is still changing (as you can see in Wolfgang's article in this issue), and we need to change the programs accordingly.

I have collected update sheets at the various shows, and will inform everybody as soon as the updates exist via email.



The prices are set as well: Except for QD and QSpread, all other updates will be more or less free (provided, you own the "current" version). This means, owners of QPC 2 V3 will get the update for free, whereas owners of V1 or V2 will pay the normal upgrade fee as before.

There are still many things which need to be done (a new stand-alone WMAN and PTR_GEN is required, for example - for customers to run the products without SMSQ/E) but as most of you will have SMSQ/E we continue with the initial idea: you keep the old disk, and the new version will come on a new disk.

Therefore, a very minor charge for disk, label and postage will be all that you need to pay for Updates of QPAC2, QPAC1, WINED, FiFi, EPROM Manager, QMAKE etc. (we think it will work out to be about 1 EUR per disk incl. postage plus a basic 2 EUR for package). QD and QSpread upgrade will be 15 EUR each.

If you like, send in your masters now (as proof of purchase). You will get them back unmodified, plus the new version on a separate disk!

Of course, a news mail will be sent to the newsgroup as soon as things will be finally ready. But it is really close, I hope ... and I am still hoping!!

improved by tilting the branches in the third plane, randomising their bifurcation angles and pruning branches. In nature, plant growth is determined by hormones called 'Auxins', which respond to gravity, light, moisture, temperature and the like, and which create the long, winding character of branches and roots as they respond to the different stimuli of the environment, occupying as much vital space as possible. The code to simulate this is somewhat too long for here, and I have not perfected it sufficiently for the moment. From the last QL Today I see that Simon Goodwin is working on various vegetal growths, so maybe we may get some enlightenment from him some time. The whole field is an interesting one. The present program works by setting-up a bi-



nary tree and then calculating the position of its branches in 3D. Then the nodes are sorted into distance order and divided into distance ranges to allow colouring the branches and their associated leaves. Finally the whole lot is drawn from far to near, and coloured using a select loop to allow stipples, to increase the number of 'tints' allowed. The leaves are there-

for stipple-blocks, printed in a random range around the node. To animate this code, it must be incorporated into Part 1 or 2 of this series. This 3D program is the last I shall be printing, as further 3D-Animation demands enormous quantities of DATA entry, but I hope readers have enjoyed seeing what can be achieved on a humble 20-year old QL.

```

100 ::
110 REMark Tree_3D_bas by S.Poole. v23,10,91 v22,06,03.
120 REMark EXEC under SMSQ/E, or LRUN under QDOS.
130 CLEAR: FOR md=4,8: MODE md: Demo
140 INK 7: MODE 4: WTV: QUIT: REMark use STOP for QDOS.
150 :
160 DEFine PROCedure Demo
170 REMark Can draw trees from any viewpoint using FOR loop:
180 leaf=1: ps=20: rs=40: SLP=0: sh=6: ngl=36
190 FOR FRONT=45,60
200     focalise: init_tree
210     FOR f=2 TO nb: pointem: classem
220     sortem: rangem: CLS: fillem: i$=INKEY$(#1,999)
230 END FOR FRONT: PAPER#2,7: INK#2,0: INK 0,4,0
240 END DEFine
250 :
260 DEFine PROCedure draw_branch
270 LOCAL f: REMark Fill the Branches:
280 REMark Improve by Ranomising branch angles and pruning:
290 :
300 Wx=x2-x1: Wy=y2-y1: wr=SQRT((Wx^2)+(Wy^2))
310 Wa=DEG(atan_(Wx,Wy)): Wt=wr/tk
320 LINE x1,y1 TO x2,y2: FILL 1: LINE x1,y1
330 TURNTO Wa-90: MOVE Wt: TURN 90: MOVE wr
340 TURN 90: MOVE Wt*2: TURN 90: MOVE wr: TURN 90: MOVE Wt
350 FILL 0: IF leaf=0: RETURN
360 :
370 REMark Draw leaves:
380 FOR f=1 TO ps*2
390     rr2=RND(-ps TO ps)/512: rr3=RND(-ps TO ps)/512
400     x3=x2+rr2: y3=y2+rr3: POINT x3,y3,x3+3E-3,y3+3E-3
410 END FOR f
420 END DEFine
430 :
440 DEFine PROCedure V(vx,vy,vz)
450 REMark Calculate the 3D Perspective Coordinates:
460 lx=vx-tx: ly=vy-ty: lz=vz-tz

```

```

470 lh=SQRT(lx^2+ly^2): lr=SQRT((lh^2)+(lz^2))
480 h=atan_(ly,lx)-c: IF h>PI: h=h-r360: END IF : IF h<=PI: h=h+r360
490 e=atan_(lz,lh)-b: IF e>PI: e=e-r360: END IF : IF e<=PI: e=e+r360
500 mm=TAN(h): nn=-1*TAN(e)*SQRT(mm^2+1)
510 END DEFine
520 :
530 DEFine FuNction atan_(oo,aa)
540 REMark This overcomes the ATAN limitations:
550 so=(oo,0)-(oo,0): sa=(aa,0)-(aa,0)
560 IF so<0 AND sa=0: RETURN 0
570 IF so=0 AND sa>0: RETURN r90
580 IF so<0 AND sa=0: RETURN PI
590 IF so=0 AND sa<0: RETURN r270
600 oa=ATAN(aa/oo)
610 IF so>0 AND sa>0 : RETURN oa
620 IF so<0 AND sa<0: RETURN PI+oa
630 IF so>0 AND sa<0 : RETURN r360+oa
640 END DEFine
650 :
660 DEFine PROCedure sortem
670 LOCAL nr,pt,Q,LL,SL,ri,SR
680 REMark Uses the RADIX-sort:
690 nr=0: pt=1
700 REPEAT Q
710   pt=ABS(pt): kk=k(pt,bk)
720   IF ((kk,0)-(kk,0))<0 : pt=kk: NEXT Q
730   LL=k(pt,dw): SL=(LL,0)-(LL,0)
740   IF SL>0: k(pt,dw)=-LL: pt=LL: NEXT Q
750   ri=k(pt,Up): SR=(ri,0)-(ri,0)
760   IF SR<0: k(pt,bk)=-kk: NEXT Q
770   :
780   IF SL=0 THEN
790     IF SR=0 THEN
800       :
810       IF test(1) THEN
820         RETURN
830       ELSE k(pt,dw)=_a: k(pt,ri)=_a: k(pt,bk)=-kk: pt=kk:NEXT Q
840     END IF
850     :
860     IF test(1) THEN
870       RETURN
880     ELSE k(pt,dw)=_a: k(pt,ri)=_a: k(pt,bk)=-kk: pt=kk:NEXT Q
890   END IF
900   END IF
910   :
920   IF SR>0 THEN
930     IF test(1): RETURN :ELSE k(pt,dw)=_a: k(pt,Up)=-ri: pt=ri:NEXT Q
940   END IF
950   END IF
960   :
970   IF SL<0 THEN
980     IF SR>0: IF test(1): RETURN : ELSE k(pt,Up)=-ri: pt=ri: NEXT Q
990     IF SR=0: IF test(1): RETURN : ELSE : k(pt,ri)=_a: pt=kk: NEXT Q
1000   END IF
1010 END REPEAT Q
1020 END DEFine
1030 :
1040 :
1050 DEFine FuNction test(_)
1060 REMark Escape if this is the last node:
1070 IF pt<>1 THEN
1080   nr=nr+1: k(nr,tl)=pt: k(nr,st)=k(pt,br): IF nr=nw-1: RETURN 1
1090 END IF
1100 RETURN 0: END DEFine
1110 :
1120 DEFine PROCedure focalise
1130 REMark Set up reference viewing line once and for all:
1140 OPEN#1,con_32: OPEN#2,con_32
1150 PENDOWN: QZ=rs*TAN(RAD(SLP)): ang=FRONT
1160 r90=RAD(90): r180=PI: r270=RAD(270): r360=PI*2: ac=512: dn=256
1170 WINDOW ac,dn,0,0: PAPER 2,0,3: INK 0,4,0: IF md=8: PAPER 1,0,3
1180 WINDOW#2,512,206,0,0: INK#0,7: PAPER#2,0: INK#2,7: CLS

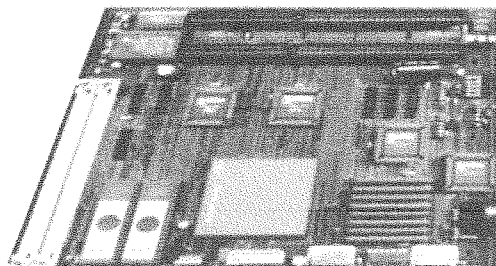
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```

1190 scy=.5: scx=.75*scy*(ac/dn): SCALE scy,scx/-2,scy/-2
1200 cx=0: cy=0: cz=0
1210 tx=(rs*SIN(RAD(ang-180)))+cx: ty=(rs*COS(RAD(ang-180)))+cy: tz=QZ
1220 fx=cx-tx: fy=cy-ty: fz=cz-tz: fh=SQRT(fx^2+fy^2)
1230 c=atan_(fy,fx):b=atan_(fz,fh)
1240 END DEFine
1250 :
1260 DEFine PROCedure ajust_quarters
1270 REMark Keep angles within +/- 90 degrees:
1280 IF f=2: kp=0 : kt=r90-a: GO TO 1340
1290 IF f=3: kp=PI: kt=r90-a: GO TO 1340
1300 IF rst=0: kp=k(o,p)+RND(a): IF kp>=r360: kp=kp-r360
1310 IF rst>0: kp=k(o,p)-RND(a): IF kp<0 : kp=kp+r360
1320 IF rst=0: kt=k(o,t)+a2
1330 IF rst>0: kt=k(o,t)-a2
1340 IF kt>r90 : IF kt<PI : kt=PI-kt : kp=kp+PI
1350 IF kt>PI : IF kt<=r270 : kt=(kt-PI)*-1
1360 IF kt=PI : kt=0
1370 IF kt>r270 : IF kt<r360 : kt=(r360-kt)*-1: kp=kp+PI
1380 IF kt<-r90 : IF kt>-PI : kt=(kt+PI)*-1 : kp=kp+PI
1390 IF kt=-PI : kt=0
1400 IF kt<-PI : IF kt>=-r270: kt=(PI-kt)*-1
1410 IF kt<-r270: IF kt>-r360 : kt=r360+kt : kp=kp+PI
1420 IF kt<0: kt=kt+r360: END IF : IF kt>=r360: kt=kt-r360
1430 END DEFine
1440 :
1450 DEFine PROCedure init_tree
1460 REMark SET up Arrays with Indexes:
1470 FILL 0: mx=9999: a_=mx+1: _a=-a_: rt=0: DIM Rg(7)
1480 a=RAD(ngl): nb=((2^sh)*2)-1: wds=nb-1: nw=nb: rf=(sh-1)/sh
1490 x=1: y=2: z=3: r=4: p=5: t=6: m=7: n=8
1500 d=9: br=10: tl=11: st=12: dw=13: Up=14: bk=15: ik=16
1510 DIM k(nb,16): f=1: k(f,x)=0: k(f,y)=0: k(f,z)=-3: a2=a*.7
1520 k(f,r)=3: k(f,p)=0: k(f,t)=r90: V k(f,x),k(f,y),k(f,z)
1530 k(f,m)=mm: k(f,n)=nn: k(f,d)=lr: k(f,br)=lr: k(f,tl)=0
1540 END DEFine
1550 :
1560 DEFine PROCedure pointem
1570 REMark Calculate nodes:
1580 o=INT(f/2): kr=k(o,r)*rf: kp=k(f,p): kt=k(f,t): rst=f MOD 2
1590 ajust_quarters: ck=COS(kt)
1600 k(f,r)=kr: k(f,p)=kp: k(f,t)=kt: k(f,x)=kr*ck*COS(kp)+k(o,x)
1610 k(f,y)=kr*ck*SIN(kp)+k(o,y): k(f,z)=kr*SIN(kt)+k(o,z)
1620 V k(f,x),k(f,y),k(f,z)
1630 k(f,m)=mm: k(f,n)=nn: k(f,d)=lr: k(f,br)=(lr+k(o,d))/2
1640 END DEFine
1650 :
1660 DEFine PROCedure classem
1670 pt=1: REMark Presort the nodes:
1680 REPEAT Q
1690 zi=dw+(k(f,br)>k(pt,br))
1700 IF k(pt,zi)=0: k(pt,zi)=f: k(f,bk)=pt: EXIT Q
1710 pt=k(pt,zi)
1720 END REPEAT Q
1730 END DEFine
1740 :
1750 DEFine PROCedure rangem
1760 REMark Select colour depths:
1770 minD=k(1,d): maxD=minD
1780 FOR f=1 TO nb
1790 IF k(f,br)<minD: minD=k(f,br)
1800 IF k(f,br)>maxD: maxD=k(f,br)
1810 END FOR f
1820 :
1830 REMark Set range colours:
1840 rge=(maxD-minD)/7 : Rg(1)=rge: Rg(2)=rge+minD
1850 Rg(3)=(rge*2)+minD: Rg(4)=(rge*3)+minD
1860 Rg(5)=(rge*4)+minD: Rg(6)=(rge*5)+minD: Rg(7)=(rge*6)+minD
1870 :
1880 REMark Set the monochrome leaf colours:
1890 FOR f=1 TO nb
1900 FOR j=1 TO 7

```

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Features

- x Q60/60 & Q60/66: 68060 CPU, 60/66 MHz, MMU+FPU
- x Q60/80: 68LC060 CPU, 80 MHz, MMU (no FPU)
- x 68060 superscalar architecture, dual execution units
- x Up to 160 BogoMIPS performance for QDOS+SMSQ/E
- x 16 to 128 MB RAM, PS/2 module sockets
- x 256 kB ROM (mainboard supports up to 1024 kB)
- x Highspeed 32 bit graphics + original QL hardware modes
- x Up to 65536 colours at 1024 x 512 pixel resolution
- x Multisync monitor output (15 pin HD connector)
- x PC Keyboard interface (DIN)
- x 20 kHz Stereo sound
- x Battery buffered clock, 2 KB nonvolatile RAM
- x Controller for 2 floppies and 2 IDE harddisks or CDROM
- x 2 Serial ports with 115200 Baud, Parallel port (on I/O card supplied with mainboard)
- x Hardware extension slot supports ISA cards
- x Fits directly into AT Minitower or other standard case
- x +5V / +12V power supply
- x No tinkering, no parts from original QL needed
- x Mainboard size 8.2 x 6.3 inch
- x Can boot in a few seconds, directly from ROM
- x Runs three different operating systems: SMSQ/E, QDOS Classic and Q60 Linux
- x New „ShoeString“ Q60 Linux distribution

Prices

Complete Systems

Q60/60 Midi Tower*

68060 @ 60 MHz, MMU+FPU,
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2 SER, 1 PAR, Stereo Sound **£ 545.00**

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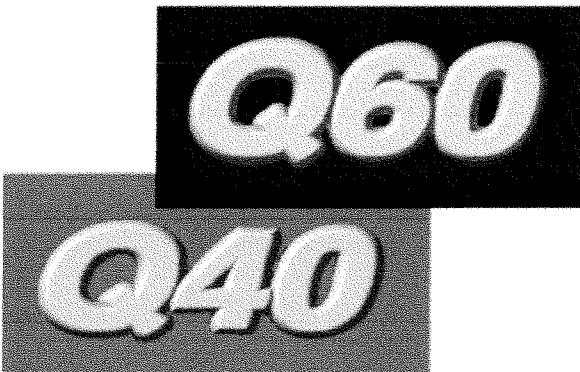
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```

1910      IF k(f,br)>=Rg(j): k(f,ik)=8-j
1920      END FOR j
1930  END FOR f
1940 END DEFine
1950 :
1960 DEFine PROCedure fillem
1970  tk=30: REMark Draw_branches:
1980  FOR f=nb TO 1 STEP -1
1990    j=k(f,t1): o=INT(j/2): K1=k(j,ik)
2000    SElect K1
2010      =1: INK 0,4,0
2020      =2: INK 0,4,3
2030      =3: INK 4,0,0
2040      =4: INK 4
2050      =5: INK 4,0,3
2060      =6: INK 4,6,0
2070      =7: INK 4,6,3
2080    END SElect
2090    x1=k(o,m): y1=k(o,n): x2=k(j,m): y2=k(j,n): draw_branch
2100  END FOR f
2110  REMark Draw Trunk:
2120  f=1: V k(f,x),k(f,y),k(f,z)-k(f,r)
2130  x1=mm: y1=nn: x2=k(f,m): y2=k(f,n)
2140  INK 4,0,3: tk=20: draw_branch
2150 END DEFine
2160 ::

```

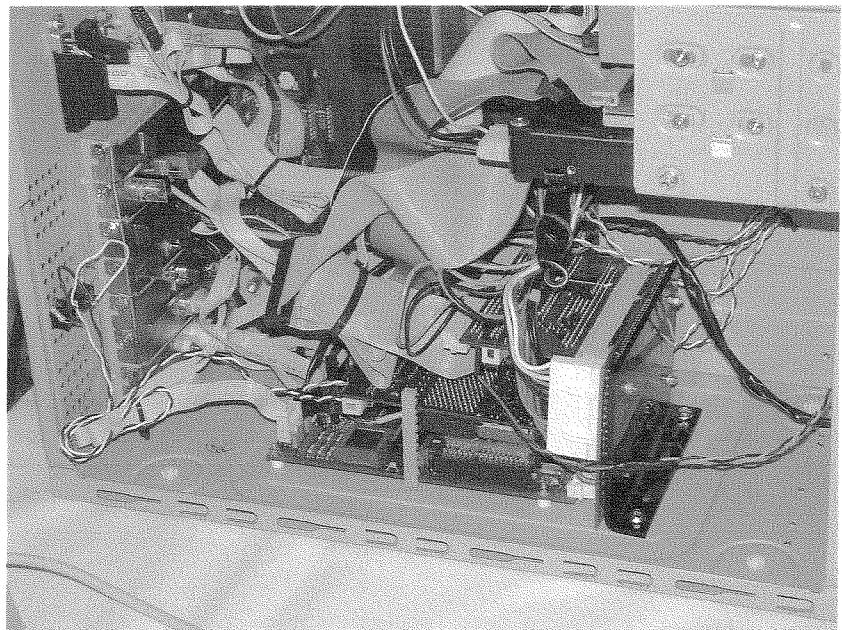
My first QL show (ever)

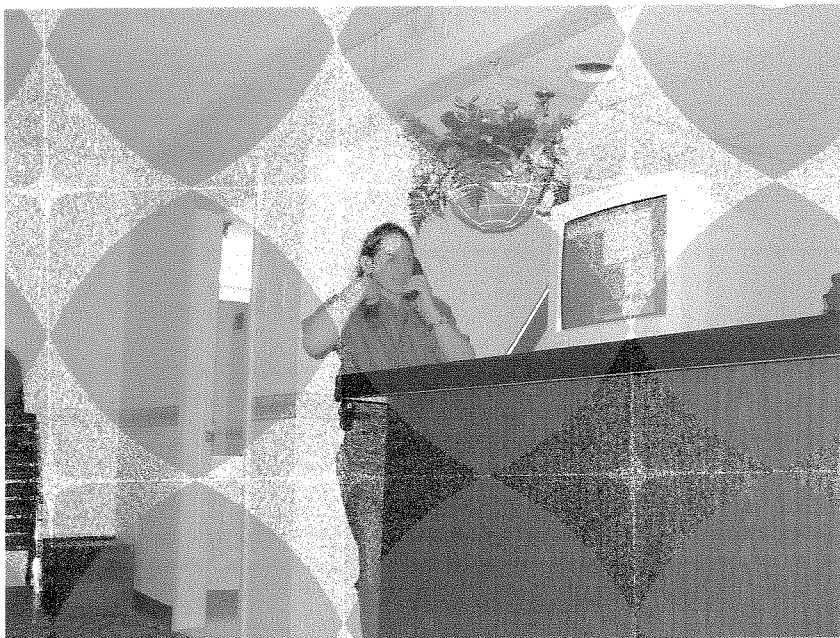
Phoebus Dokos

Last year during the traditional gathering at Bill's house I was asked by Al Boehm, if I was going to attend the 2003 US show. I told him that as long as it fell within a certain time period I would as the previous years it had always fallen during the time I was either on my way to or in Greece at the time. True to his word (and after a small tug-of-war regarding dates in ql-users) Al set the show for a favourable time for me (and I hope for everyone else but more about that later). I was very pleased that my wife decided to come along (mainly because she wanted to see Mary and Dorothy again whom she met at Bill's house that past October - And it was **ALL** Bill's fault... people who know will understand what that means!). The trip was rather uneventful although very tiring as I keep forgetting (even after 4 years in the US) that miles don't equal kilometers and what seemed a

short trip (398 miles) was actually an 8 hour drive. Our little (fully loaded with QL stuff and a 19" monitor) Echo (It's a non-hatchback Yaris as it's known in the rest of the world) fared pretty well and a little after 10pm on Friday we were there. We ran into Bill, Mary and Rigel together with Kevin O'Leary and Herb Schaaf (whom I've

admired for a long time for his broad knowledge... the fact that he's applying it to graphics helped too!). Jochen, Roy and Marcel as well as Al and Dorothy weren't there yet and since our stomachs were growling we went with Michelle (my wife) to a local Denny's to eat. On the way back we saw Al and Dorothy and I was introduced to Dietrich Buder. Next morning going for (as Roy very well put it last issue) to what EconoLodge considers a breakfast we saw the Euro-

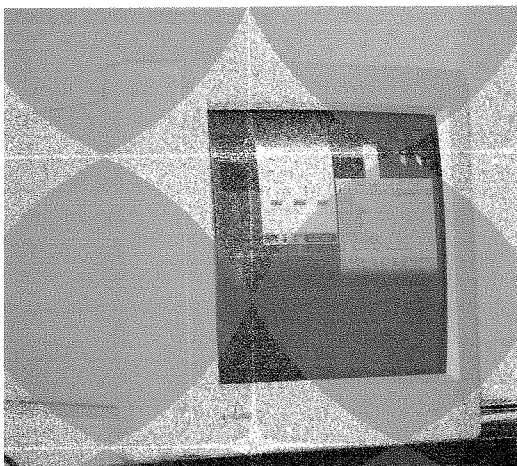




pean "team" assembled in full. Roy, Marcel and Jochen were there (who was taking pictures with his superb Nokia phone that got me so jealous I just ordered it!), together with Roy's son and Urs König. The party was completed with Bill, Al, Kevin, Mel LaVerne, Herb Schaaf and Jon Kaczor. The ladies together with Bill's and Roy's sons left for a tour of West Haven and shopping and we proceeded to the large room that Al had arranged on the third floor and set up our machines. I had brought my PC and my dual Q40 and Aurora machine (complete with the GD2 version of SMSQ/E 3.00). There was another Q40 there by Kevin O'Leary and three more SuperGoldCard Powered Auroras: One Towered-Cased (Mel LaVerne's), one in a Pandora case (Al Boehm's) and the Pizza-Layout as I call it (see description by Roy in previous issue) of Herb Schaaf's. Roy, Jochen and Marcel had their QPC2-enabled PC notebooks as well.

Immediately the QL-spirit took over as while trying to demonstrate SMSQ/E v.3 with GD2 on

the Aurora we immediately found out that no machine except mine was working! It turns out that the problem wasn't on SMSQ/E but on the setups as I experienced the same exact problems once I put my QubIDE



to work. Timing problems were the most likely culprit, but the end result was that I wasn't able to properly demonstrate how SMSQ/E looks with GD2 on the Aurora, although Marcel with a quick hack created a version of the WMDMOWIN file he has with QD, QSpread and QPAC II GD2 (with 3D WMAN) editions.

Mel had an additional problem with his machine as his Minerva's battery died and as a result no booting was possible.

We temporarily fixed the problem by substitution of his MKII (On carrier) with a JM rom I had with me. We stopped and went for lunch at a nearby Pizza-Hut (which awed me as it served beer which is something that you cannot see in Pennsylvania where I live – you can tell that I don't get around much!). There we had the usual fun with Marcel getting carded and giving the waitress his German ID (more on that fun below as well) and I got to talk to Jon a little bit while we were both outside having a puff or two! Upon our return, Roy phoned Jim and they conducted a "re-

mote" demonstration of the very impressive QDT. Immediately afterwards I performed a demo of Q-Word running on my Q40. I was very pleased that everyone seemed to like my graphics (although I don't know if they were just being nice!). I also demonstrated QL2K (the new QLAY port by Jimmy Montesinos running under Windows) and even used my Tyche ROM on it.

Throughout the day a little trading took place as Roy updated QubIDE roms (I got a set of gals) and programs, while Marcel and Jochen were busy updating software (and making some sales as well from what I

could see). I gave away some used stuff and also discussed the possibility of a couple Q60 sales. Unfortunately due to the problematic phone installation I was not able to demonstrate soQL-PPP and the QL emailer. I did however gave a couple of copies away and I hope that after some supporting software is completed, QL internet usage will take off!

The show came to an end around 5 and we went on to a Mexican (sort-of) restaurant. I won't expand too much but



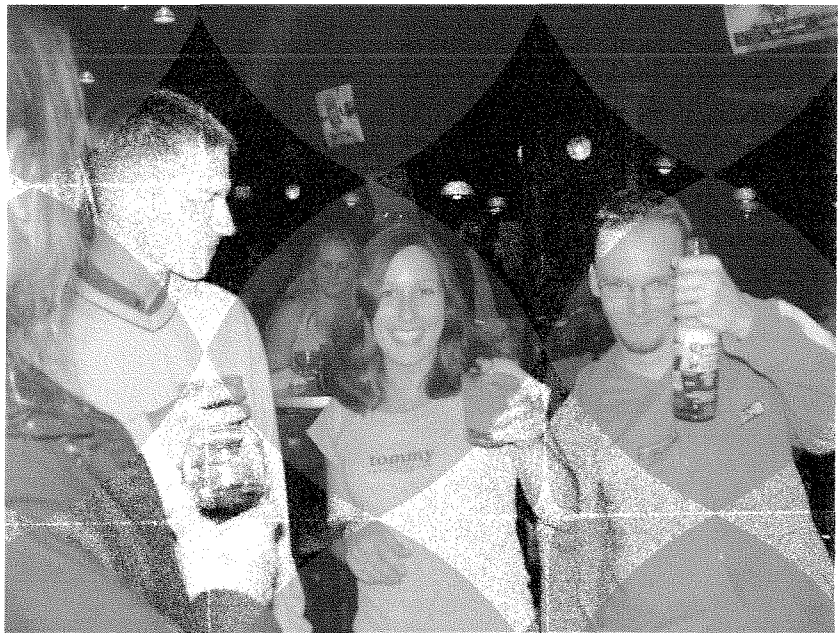
to be rather entertaining as we all took one car (mine!) which wouldn't be too much of a problem except that it is rather small for 6 people! We enjoyed the climate and had fun watching the local (drunk) crowd. We turned in around 2 o'clock ready for an early start next morning.

I was delighted to meet old friends, make new ones and meet people with which I corresponded for years without ever meeting face to face. Truth be told

however I was very disappointed by the poor atten-

dance. Counting myself out (as I really don't fit anywhere ;-)) there were only 6 people from the US attending the show! Not only that but if Tony and Darren had made it over this time the Europeans (or rather the traders) would be more than the customers! A lot of careful planning should go in the next show and maybe the next should be set to Europe as it would give an extra incentive to make the trip for people that did not attend. Personally for me it was worth the time and the cost but if the trend continues I am not sure how logical it would be to do it a couple more times. I'd rather attend a German or British show (or the Irish show... hic!) and see more people and at the same time travel a little bit.

suffice it to say that I thought Greeks had the worse restaurant service in the world. Well after a 3 hour wait to be served my opinion changed! At least the drinks were flowing and it was fun watching the waiters and waitresses trying to understand Marcel's ID (They seemed very puzzled my the month/day/year concept). That made for a couple of laughs and thanks to the good company time passed a little easier. Bill, Kevin and Al had to leave, Dietrich couldn't take the wait so he had gone earlier and Urs left as well, so me, Michelle, Roy, Marcel, Jochen and Roy's son decided to go out to have a couple of drinks. That proved



QPC2 Version 3.11

Dilwyn Jones

QPC is a QL Emulator running on PCs with Windows 95 or later. Having started life as a DOS-based emulator, QPC has gone through many updates and upgrades in its life, thanks to the dedication of its author, Marcel Kilgus, who has always been prepared to examine new possibilities and constantly strived to improve the product.

I've used QPC almost since it first came out. At the time, my need for a PC as well as wishing to reduce the amount of computer hardware (or "junk" as my wife called it) around the house made a good QL emulator running on a PC an ideal choice for me, especially as it used the SMSQ/E operating system, and I have kept up to date with it as the various versions came out over the last couple of years. So I thought that with the advent of SMSQ/E 3, the new Window Manager and everything else in the latest version, I'd look back at the history of QPC a bit

and take a good long look at the latest version as well as how the emulator developed.

QPC uses the SMSQ/E variant of the QL operating system. SMSQ/E was Tony Tebby's development of a brand new operating system for QL platforms, originally implemented for QXL, Atari ST and QL-based platforms. During the life of SMSQ/E it migrated to the Q40 and Q60 computers, and Marcel Kilgus implemented it for Windows systems via the QPC emulator. SMSQ/E gave users of QL-compatible systems such as Auroras, QXLs and so on the opportunity to experience much higher display resolution than the original QL 512x256 pixel resolution. In fact, the opening QPC configuration dialogue screen lets you specify resolutions up to 1600x1200 if your system permits this! I wonder how readable CSIZE 0,0 text would be on a 1600x1200 screen? This configuration screen lets you type in your own resolutions rather than just select the fixed ones from the menu, so you can create some custom screen sizes if you really wish to. Normally I just VGA or SVGA (640x480 or 800x600 pixels) though I do sometimes set custom screen sizes just to test software.

QPC2 is very flexible in terms of how much of the PC resources it will help itself to. You can set QPC to use anything from 1 to 128MB of memory. If the PC does not have enough memory, QPC2 seems to use 'virtual memory' on the PC's hard disk. This seems to slow things down a little bit, due to the constant writing to hard disk, but to an acceptable degree.

It used to be the case that large memory systems like QPC2 suffered in speed terms a little bit due to a side effect of QL slave block handling. When the QL first came out, it had micro-drive tape cartridges and in order to speed things up some spare memory was used to mirror the content of microdrives. This has remained integral to the operating system to this day, despite the advent of fast hard disks and so on which in theory make this less necessary. Somewhere in the lifetime of QPC2 Marcel Kilgus has implemented a system whereby slaving only applies to a certain portion of memory, probably along the lines of the old 'Fast Memory' system of the Atari emulator systems. It does have a side effect of distorting the free memory values returned by some functions which test free memory, although the Toolkit 2 and SBASIC FREE_MEM function does return a correct value which compensates for this.

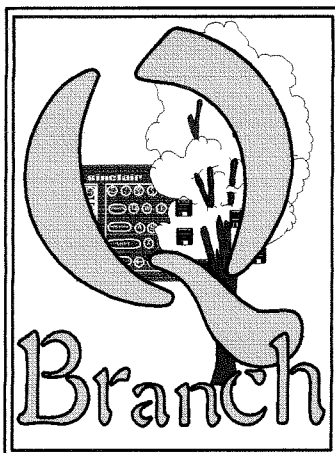
Marcel also took the opportunity to take advantage of certain facilities available to this platform, probably the best known of which was audio CD

handling. For possibly the first time on a QL system, it was possible to play music CDs, and Marcel even built in BASIC extensions allowing you to access these facilities in your own programs - a CD player program was supplied written in SBASIC. SMSQ/E has always been supplied with SBASIC, a much enhanced version of the original QL SuperBASIC. SBASIC fixed many problems with SuperBASIC, programs ran very much faster than SuperBASIC and the language itself was greatly enhanced, providing a large number of extra commands and functions. In particular, you could in fact have multiple SBASICs and even EXEC an SBASIC program alongside the main SBASIC interpreter.

With version 2 of QPC came the long-awaited "colour drivers", more correctly known as the GD2 system. QPC2 now offered the joys of 16-bit colour, a full 65,536 colours accessible from SBASIC. QPC could be run in a Windows window now, rather than have to occupy the full screen. It was even possible to "stretch" the display if required by taking advantage of graphics card facilities available to the underlying operating system of the PC. And taking this a step further, there is also an option in the configuration screen to allow the display to be stretched and keep the aspect ratio - it will stay the same shape as you stretch the display.

Multiple language facilities were available now, and QPC itself could be configured for French, German or English operation, with the additional option of American keyboard layouts which proved rather useful for those of us in Britain using laptops, since the USA keyboard option provided the best keyboard layout options for laptops. Power management facilities are available to QPC users, again very useful for PC systems such as laptops.

SMSQ/E floating point functions took advantage of the PC's Floating Point Unit (FPU), providing significant speed up for mathematical operations. The printing system was also enhanced. Rather than being a pure PAR printer port as we were used to, the PAR device could now be connected directly to a Windows printer, so that network printers could be used. In the office where I worked at the time, I could run QPC2 from a CD on the office PC and print to the high quality laser printer on the main computer in the manager's office. In fact, multiple parallel and serial ports can be accessed in current versions of QPC2, see Figure 7 for how QPC2 sets up the assignments of up to 4 parallel ports and up to 8 serial ports. My PC has "only" 4 serial ports and 1 parallel port, but the parallel port has a daisy



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Apology for the Delay

Some of you may have been wondering why the upgrades that you ordered have not been despatched. This is because there have been a couple of holdups in producing peripheral files for non SMSQ/E users. We are hoping that these will be released soon and then the full release disks will be made available to QBranch and despatched to you.

There is also a problem that has been isolated in SMSQ/E v 3.01. This has been corrected and is in the testing stage as we go to press. People who have ordered upgrades to this will receive their disks as soon as the new version is available.

These programs are free upgrades :

(Just send 75p for the disk and 80p postage + master as proof of ownership)

Agenda
QMake
Wined
FiFi II
QPAC 1
QPAC 2
QSup

All versions of
SMSQ/E (Gold Card/QXL/Q40)

These Programs are paid Upgrades:

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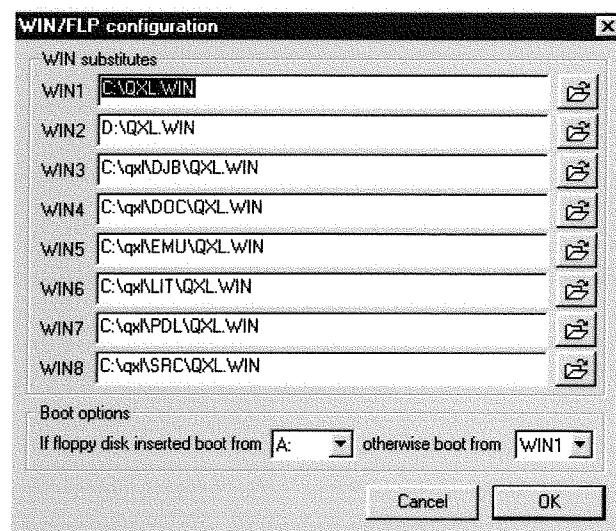
chained set of peripherals hanging onto it, including scanner and Zip drive - amazingly, QPC seems able to access my printer and Zip drive even though they are both connected to the same port! In fact, just about anything which is seen as something having a drive letter (C:\ to Z:\) seems to be recognisable to some degree or other by QPC2, even some flash memory cards, USB peripherals and so on which appear as valid drives to Windows. Much was made of "device independence" when the QL first came out 20 years ago, QPC2 takes all this even further!

A very important development as far as I was concerned was the implementation of the DOS device driver. This gave an easy method of accessing the PC hard disks and CD-ROM drives. Utility software such as Jonathan Hudson's WXQT2 had previously been available to facilitate the transfer of files between the QL and PC parts of the computer, but now for the first time there was a seamless method of transferring files between the QL and PC parts of the system. Copying a file from floppy disk to QL hard disk was as simple as COPY FLP1_file TO WIN1_file, but now you could copy to the PC hard disk with a simple command like COPY FLP1_filename TO DOS1_filename. There was a restriction, namely that QL executable file headers were lost on the PC side of things, meaning that you could not store QL programs on the PC side of hard disks, but apart from that, the facility to so easily move text and other data files so easily between platforms was one more giant leap forward for QL systems. SMSQ/E also had the capability of reading PC format floppy disks in QL drives with the level 3 filing system.

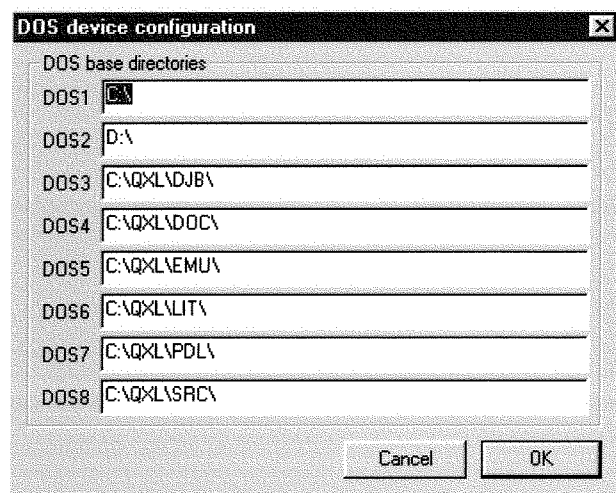
The underlying Windows operating system had a cut and paste system called the Windows Clipboard. With this, text, graphics and all sorts of data could be cut or copied from one program, then pasted into another program. The original QL did not have this facility, but the Menu Extension software from Jochen Merz provided something called the Scrap system, which allowed programs such as QD and others which understood what it was (including BASIC with the appropriate extensions) to use a similar facility. QPC implemented something called QPC_SYNCSCRAP which allowed synchronisation of the Windows and SMSQ/E clipboards - the means to copy data to one and have it available for pasting in the other - via a small job started to deal with just this synchronisation. Again, a much appreciated facility for those like me who found it oh so useful.

By now QPC2 had progressed to version 3 and left some people wondering if this was QPC3 or QPC2? Marcel and Jochen's preferred description was QPC2 v3 which in my opinion was a bit of a mistake, as the new version was such a leap forward that I felt it deserved a name which highlighted the advance. After a while of complaining about the naming (which I felt quite strongly about) I gave up complaining and just accepted it. Nonetheless, the power management system, configuration system, multiple PAR ports and so on made a significant difference. A new approach for printing was allowing the PAR ports to have an "Use Filter" option, which allowed third party print filters to be incorporated into the print process, although little use seems to have been made of this facility so far.

The DOS device was enhanced to allow for the 8 devices to be redefined. Instead of DOS1_ simply being the PC drive C:\ as before, it was possible for it to be just about anything you wished. The significance of this was twofold, apart from the flexibility it offered. By specifying a PC network filename, one of the DOS drives could be used to access a hard disk on another PC over the network, or a Windows path name could be 'hidden' in the drive name, giving a degree of workaround for the limitations imposed by QL 36 character filenames. In other words, DOS1_ need not be just drive C:\ it could be something like C:\Windows\Desktop\ or something similar, thus allowing names longer than the usual QL 5 character drive name plus 36 character filename. The extremely useful opening configuration dialogue could set and store the drive and path names for all 8 possible DOS drives. In addition, a degree of character translation was possible, such that some characters which are illegal in PC filenames such as * and ? to be converted to something else which doesn't



upset the PC. See the pictures before and below for the window which allows you to specify exactly what WIN1_ to WIN8_ and DOS1_ to DOS8_ respectively are defined as.



Another interesting facility introduced was the QPC_EXEC command. At first, I thought this was a bit perverse, since its function was to allow QPC to execute a DOS or Windows program or file. After a while I realised how useful this could be. I spend some time transferring files between QL and PC and it proved to be extremely useful if, for example, I created a text file on a QL then wished to make a PC version of that file as well. I'd create the file on the QL, save it to a DOS device, then without leaving QPC I could fire up a PC word processor to load the file to check what it looked like!

For older programs which did not handle higher resolution screens very well, or could not cope with system variables being anywhere other than the old standard QL location, QPC had a couple of major aids to compatibility built in. Firstly, by starting QPC in 512x256 QL screen mode, this made the screen operation and system variables location more like the original QL, which helped with running "awkward" programs. In addition, Marcel introduced the QPC_QLSCREMU command. When emulating the original screen, all memory write accesses to the old QL screen area are intercepted and translated by QPC into writes into the appropriate areas of the larger QPC screen. If using high colour modes, some additional colour conversion work is done. I don't pretend to know how all this works, I leave the miracles to Marcel, all I do know is that it works and works well.

By version 3.00, QPC could support wheel mice. These are a type of mouse which incorporates a little scroll wheel in addition to the usual mouse movement and buttons, though these types of

mice could only be used in a standard way with versions of Windows from Windows 98 onwards. For SMSQ/E programs, the wheel movement was converted into meaningful keypresses (ALT up/down, useful in text editors for example).

Version 3.02 introduced changes to the old BEEP emulation system, which used the rather basic built in speaker of the PC. This came about partly because versions of Windows based around NT (Windows 2000, XP and NT) seemed to have a problem with audio via the system speaker, so QPC2 users were unable to hear anything. The audio now used the Windows DirectSound interface, so that the QL BEEP commands came out of the sound card's speakers instead. When I first used this it was very LOUD, fortunately a degree of control over the volume has been built in from version 3.03, since on my system at least the BEEPs seemed louder than the standard "noises" Windows makes. It was also important to me to have the volume control for QL beeps as my PC has a TV Tuner Card which I use quite a lot alongside QPC. With the emulator in windowed mode occupying about three quarters of the PC screen, I could watch TV in a smaller box alongside it - I am watching an episode of the Spooks program on BBC1 as I type this. At first, the QL beeps were so much louder than the TV audio that they made me jump, but once Marcel allowed the volume to be configurable, that changed. Of course, QPC sound output can co-exist with PC sound output, so you can hear TV tuner audio and QL BEEPs at the same time if the need arises.

Version 3.03 also introduced DOS_DRIVE and DOS_DRIVE\$ functions to allow the DOS device assignments to be changed on the fly rather like the WIN_DRIVE and WIN_DRIVE\$ extensions did for the WIN device. I saw it as a kind of acknowledgement that the DOS device was sufficiently well used to justify the further development effort.

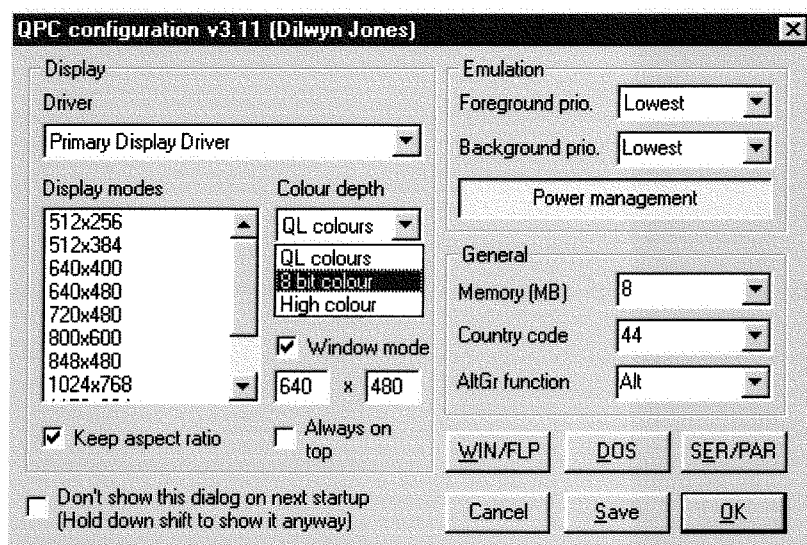
Up until recently, version QPC2 3.03 was a stable and standard version for many users. I did much of my Launchpad development work on this version and the stability it offered me for a complex programming project was quite astounding. Had QPC2 developed no further I would have been quite happy, but no, Marcel had a few more tricks up his sleeve for when version 3.10 came out.

Over the last few months, Marcel has been investing a lot of time and effort in developing version 3 of SMSQ/E and the new Window Manager, plus developing colour drivers for the Aurora. The fruits of his labours are evident in

this new version of QPC. I won't go into too much detail about the new Window Manager, as much has been written about it already and it tends to get very technical. Suffice to say that the Window Manager helps provide the "standardised appearance" of pointer driven programs, and the new Window Manager will better handle the facilities offered by GD2 and offer much better display appearances for programs able to take advantage of it. For example, you may have seen screen shots recently of updated QD, QPAC2 and Qascade programs, all nice new 3-D borders, transparent shadows, more colours and better icons than the old mode 4 and mode 8 sprites could offer.

In order to develop the 256-colour drivers for Aurora based computers, Marcel developed them in SMSQ/E with QPC. The result is an Aurora compatible 256 colour or 8-bit colour mode on QPC. When set to this colour depth, SMSQ/E returns 16 as the mode number. As yet, very little software makes direct use of this mode, although most software will run in this mode, since the colour scheme palette allows the old QL colours from 0 to 7 for example to correspond to colours 0-7 on the new scheme, therefore there isn't any immediate and obvious large scale compatibility problem. You will, however, notice some less significant changes. The system pointer icons have changed somewhat and instead of a simple black and white pointer arrow you get a rather nice yellow and white shaded pointer arrow which looks rather nice and is more distinctive and easier to spot on screen than the old icon. The other system pointers have changed too (for the better!).

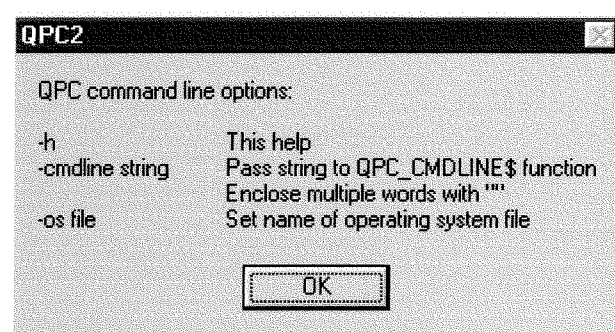
The picture below shows the configuration screen in the current version of QPC, the item to select the new 8-bit colour mode being highlighted.



In addition to the existing printer port facilities, some new extensions have now been included to return information about names and types of parallel printer ports. There are extensions to tell you what the PAR port is set to, the number of available printers on this system and the name of a specified printer number. This does not make much sense until you start to use multi-printer and networked systems, but for those who do, these will prove very useful.

Some new command line options have been made available in this version of QPC. When you start the QPC executable file, you can supply a short command after the name of the executable. Figure 2 shows what happens if you use the Windows RUN command to start QPC with the command -? after the filename of the QPC executable, i.e.

```
RUN "c:\program files\qpc2\qpc2.exe" -?
```



While the picture shown above simply displays a short summary of the few available options, the short list of currently available options does provide some useful facilities.

The -os filename command tells QPC where to look for the operating system (the SMSQ.E.BIN file). While this is normally not very useful, the manual does cite one possible use, namely having as many differently configured QPCs in one directory as you want. So if the gamer in the household prefers to start QPC in QL compatible screen mode (since most QL games were written back in the days of one simple QL system), one copy of SMSQ/E could be configured for those settings. I tend to configure mine for 640x480 VGA resolution, which leaves room on the screen for the TV tuner to run alongside it. Alternatively, as a software writer, I could have one copy of QPC set up to start in QL colours, and other copies set up to start in 8-bit colour and 16-bit colour modes for software development and testing.

Another available command option is simply to pass a string to QPC at startup with the command

```
-cmdline "text"
```

As an example, let us suppose that you have one of those dinky little hard disk or flash ram cards on a keyring that you use to transfer QL data between home and the office. When plugged into your office PC's USB port, the little drive appears as drive F:\, but on your home PC it appears as drive E:\. Rather than configure differently, one option might be to pass a command line to QPC, then the boot program could set one of the DOS and WIN drives to that name as appropriate, so the office system might be started with:

```
RUN "QPC2.EXE" -cmdline "F:\\"
```

and the home system with

```
RUN "QPC2.EXE" -cmdline "E:\\"
```

The command line text could then be read using the QPC_CMDLINE\$ function and used to set WIN3_ and DOS3_ for example:

```
LET drive$ = QPC_CMDLINE$
```

```
WIN_DRIVE 3,drive$&'QXL.WIN'
```

```
DOS_DRIVE 3,drive$
```

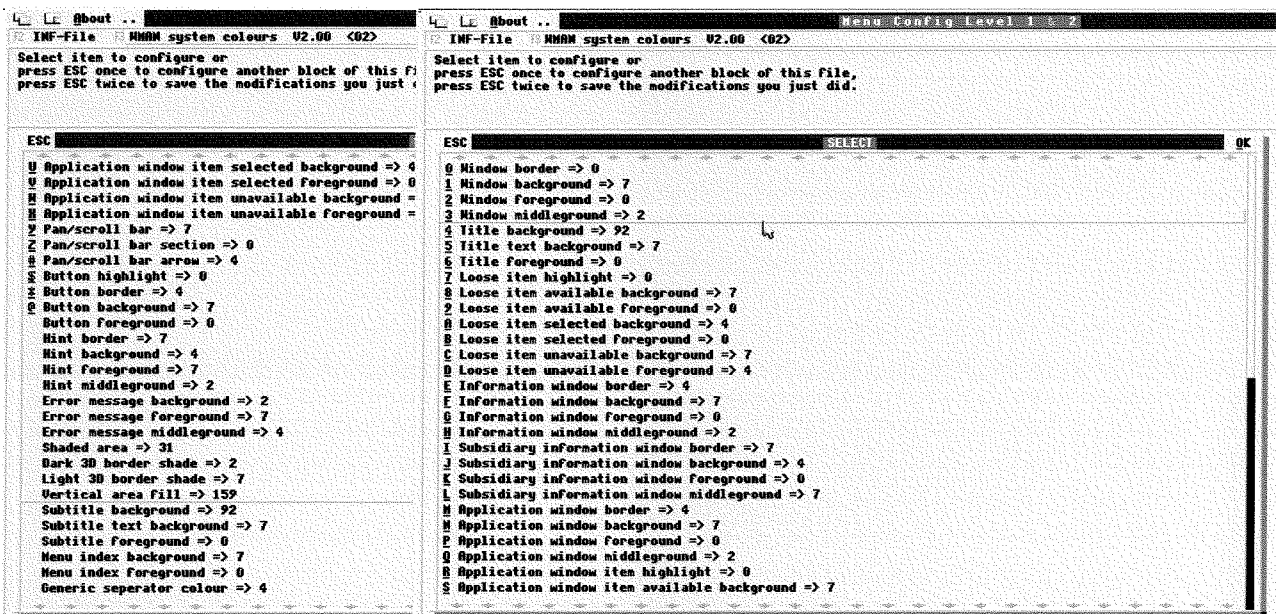
Version 3.10 of QPC2 was quickly followed by version 3.11, although I am not aware of any significant new facilities in this release, just a few improvements and bug fixes to existing facilities.

You will have read a lot recently about the new Window Manager which goes with the newer versions of SMSQ/E. One example of what is possible is shown in the screenshots below, which shows some of the available options when MenuConfig (the configuration program) is applied to QPC itself. The colour schemes have so many options I had to make two separate screen dumps to show all the options!

In case anyone is wondering how I captured these screen images from QPC's display, I use the PrintScreen key on the QL keyboard. Used by itself, that captures a copy of the entire PC screen, whereas ALT PrintScreen simply captures a copy of the current window, which has the advantage that I don't have to manually crop out all the PC bits around the edges of the QPC window!

In case you haven't guess by now, I am one of the biggest fans of QPC2 you could find. That does not diminish my respect for other QL platforms of course - I had a Q60 on loan for a while and was absolutely delighted with that too, but space in my house did not allow for the two computers (and my financial budget didn't allow for a Q60 either), so as I needed something which offered both QL and PC in one box, QPC2 has really proved its worth to me and I would have no hesitation in recommending it to anyone who requires a dual platform Windows and SMSQ/E system in one box. QPC2 is an emulator of course, rather than running as a native PC operating system, so it might be over-optimistic to expect an emulator to match the performance of a dedicated high end hardware QL system, but performance is more than adequate for my needs. And I am impressed with the way it works on my "ancient" (in PC terms, it's only a few years old actually) 333MHz PC, so I would expect absolutely blazing performance from it on some of today's fast PCs with clock speeds approaching 2GHz.

You may find that some of the recent developments in QPC2 may have become somewhat esoteric and too technical. That's fine, just don't use them. The facilities are there, you may only need to use a small percentage of everything



QPC2 now offers, and you certainly don't need to master it all in one go.

The QPC manual was at version 2.06 as I wrote this review. I downloaded it as an Adobe Acrobat PDF files from Marcel Kilgus's website. This only the QPC-specific part, of course, it does not include general SMSQ/E documentation which is supplied separately from Jochen Merz Software. As a registered user I was also able to download the latest QPC update from there. Registered users permitted to download these updates

receive a zipped copy of QPC2's latest version and the zip file is password protected. Unless Marcel or Jochen Merz have supplied you with a password you will not be able to unzip the file and use it. This is a good compromise between software protection and ease of access - you can get the latest version immediately without having to wait to post a disk to Germany for updating, yet it allows the publisher and author some control over who is able to access the latest versions.

Dev-C++/c68

Simplifying code development for QDOS systems

Phoebus Dokos

1. Introduction

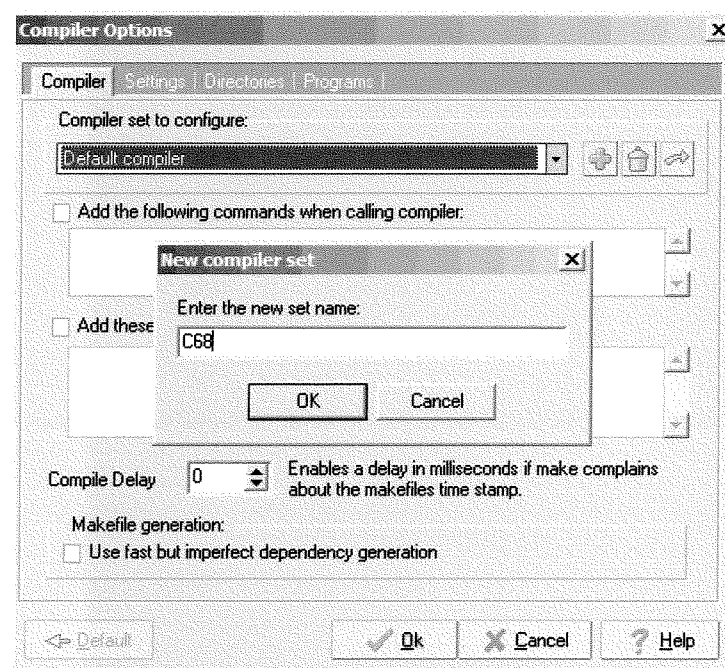
One of the major problems QL developers are faced with is the lack of development tools available to many platforms. The problem is not really the lack of independent tools (languages, linkers, editors and other development utilities) but that these tools are apospasmodic at best without a proper environment to tie them all together and improve programming efficiency. While nothing can really substitute a native development environment, this issue can be to a large extent addressed by a cross-development environment (such as Windows or Linux) where IDEs exist and are extensible enough to provide access to third-party compilers etc. I was faced with the same challenge many times in the past years, however I managed to escape having to take a heads-on approach to the problem because of the small footprint of my code which was manageable without problems and with the existing tools. However when embarking into more ambitious projects (like the QL Mailer, GNU Midnight Commander, KVM - a Java Virtual machine per J2ME- which required management of a substantial amount of code fragments split into dozens of header and source files) I had no other option but to try and find a way if not to bring a proper IDE natively under QDOS/Minerva/SMSQ, at least to adapt an existing one that was smart enough to allow scalability and expansion.

2. Implementation

After some searching I settled for two styles of IDE and three programs: Dev-C++ [1], RSXNT and SourceEdit [2]. While SourceEdit is not an IDE but rather an Editor, it is extensible enough to provide limited IDE-like functionality for small projects and also had already the S*Basic code syntax built in due to the work of Jimmy Montesinos and myself (see other article elsewhere in QLT). This article however focuses on the use of Dev-C++ as an IDE as it allows multiple configurations (and multiple compilers).

The primary language that was chosen was C and the main compiler C68, for many reasons:

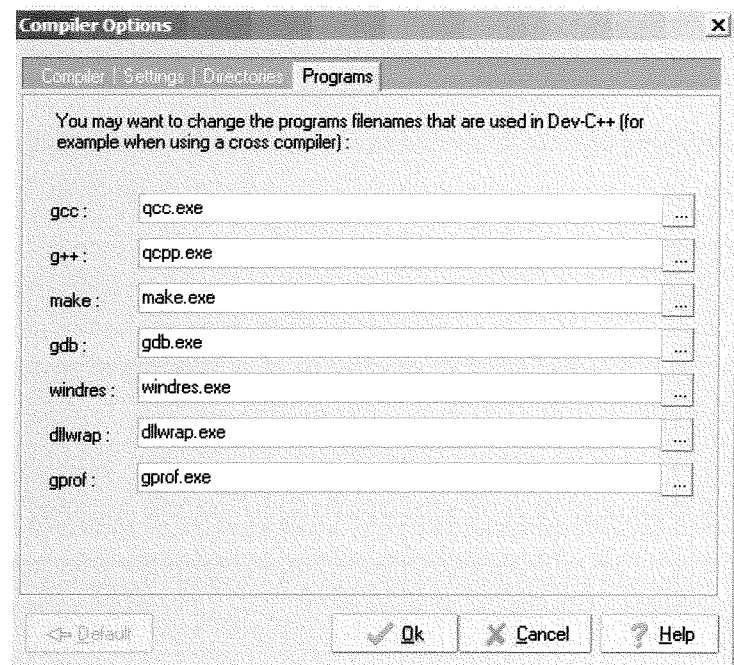
1. Most of my projects in pipeline were C-based.
2. Support for C68 has been steady and progress continuous as opposed to qdos-gcc to due to lack of time has not been properly maintained (although some development has occurred thanks to the work by Dave Walker)
3. Re-targetting is possible with C68 without too much hassle which meant that the whole solution could be use for other projects as



well and finally

4. An PC port of C68 was already in existence which simplified planning.

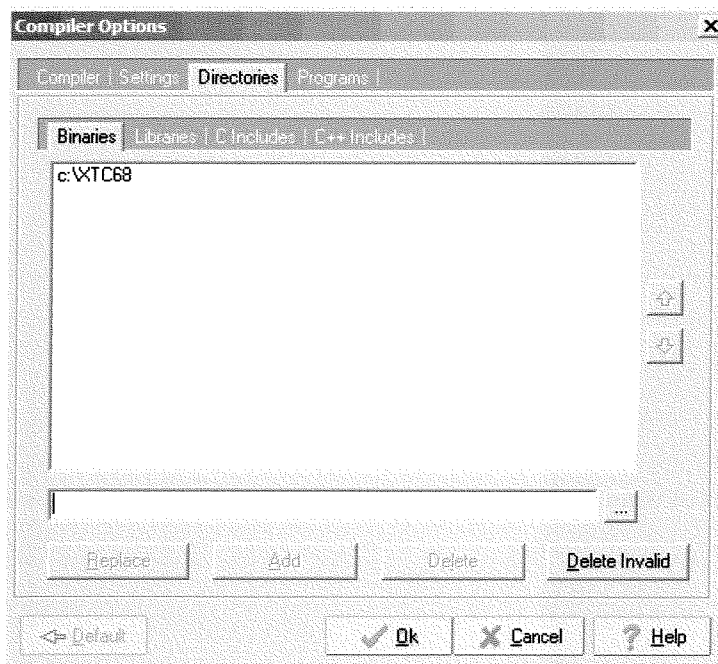
The c68 port chosen initially was XTC68NT by Jonathan Hudson. Implementation was a matter of minutes and compilation took place immediately. As it was soon apparent however, a totally new version should be ported so to take advantage of the new advances in c68. XTC68NT last release was in 1996 which meant that a lot of changes were missing from its distribution. I proceeded to download whatever source was available for c68 in order to port/compile under Windows the new source changes. To that effect I used MingW (a Win32 gcc port) that comes with the full distribution of Dev-C++ and with some simple exceptions I had a more updated –and still working if you can believe that!– c68 cross compiler. As I found out however while writing this article Dave had been hard at work updating libc and other components of the c68 system and as a result a new major recompilation will be in order soon. I hope that in the course of the next month a new site will be set up [3] to deal with the Win32 distribution in order to provide easier access to developers for the new tools. In the meantime however anyone can build a Dev-C++ based XTC68NT system that can help in the development of QDOS applications, Instructions on how to do so are in the next section



3. Installation of XTC68NT for use with Dev-C++

Assuming that you are going to use XTC68NT/ c68 in conjunction with Dev-C++'s own MingW compilers the installation is as follows:

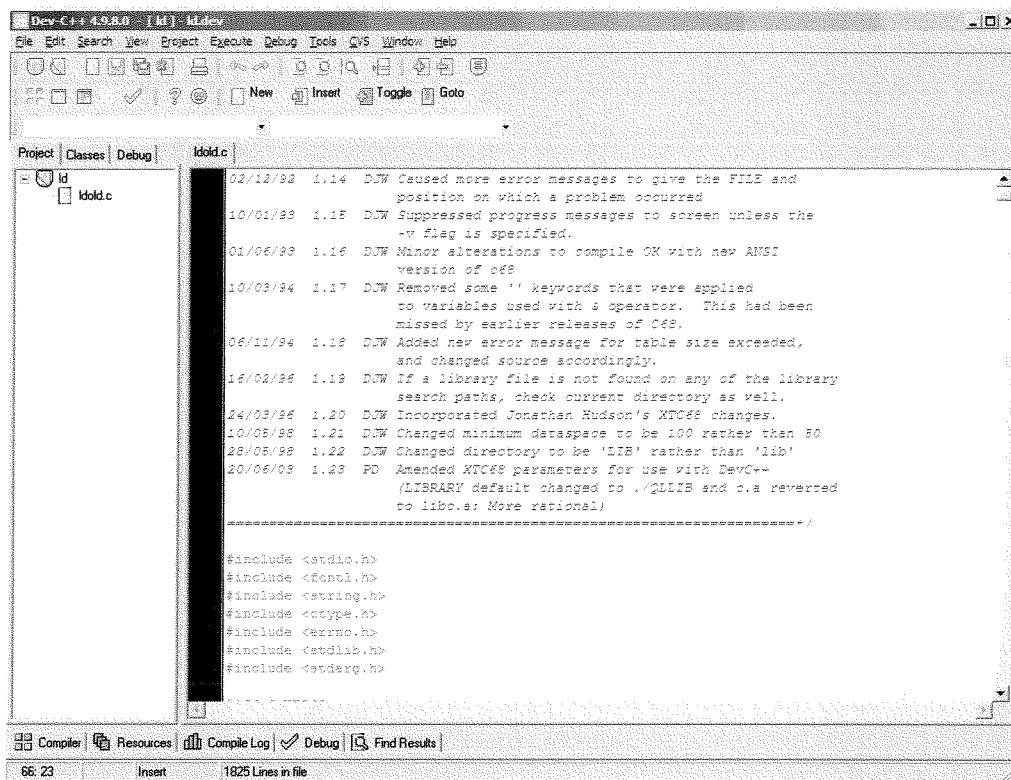
- a. Download and install the latest version of Dev-C++ from Bloodshed Software's website.
 - b. Download XTC68NT.zip from any of the good sources for QDOS software [ie sinclair-ql.it, emuln1, or one of the PD libraries ie DJPD]
 - c. Follow the instructions on creating the appropriate directories for XTC68NT. Libraries have to go to c:\qlib, includes to c:\qlinc and a good place to put XTC68NT is under c:\XTC68. Then copy the gnu make binary from the main binary directory of Dev-C++ to the XTC68NT directory as well. (Not entirely necessary but saves time and sometimes confusion)
- Windows XP/2000 and NT users should update their environment variables sets to include a C68PATH (which should be set to c:\XTC68 or wherever else you place the XTC68NT binaries. (This is done by accessing the System configuration panel). Windows 95/98/SE should add a SET C68PATH = c:\XTC68 entry in their config.sys files while Windows ME users can do the same via the appropriate configuration tool although entry in the config.sys file will migrate these settings in their right place after the first reboot.



e. Fire up Dev-C++ and immediately go to Tools → Compiler Options. Press the + icon on the Compiler Tab and enter C68 or something similar. Then access the Directories tab and after removing the gcc directories binaries locations, replace them with c:\XTC68 (one other reason for moving make to the XTC68NT directory!). Do the same for C includes and Libraries replacing the entries with c:\qlinc and c:\qllib respectively. C++ includes could be left alone although I make it a practice to remove them to avoid any confusion. Finally go to the Programs tab and replace the listed binaries names with the appropriate XTC68NT ones.

f. You're done!

You are now ready to start using XTC68NT and happy programming!



Web Links:

- [1] Bloodshed Software's web page:
<http://www.bloodshed.net/> (Dev-C++)
- [2] SourceEdit Webpage:
<http://www.sourceedit.com/>
- [3] c68-Win32 Webpage:
<http://www.dokos-gr.net/c68/>

Helpline

Dilwyn Jones

Question: I would like to use an Iomega Zip drive with my Qubide system, but it doesn't seem to work. I have read somewhere that I should be able to use this combination.

Answer: If you are using a version of Qubide prior to v2.00 (version number shown at the top of the screen as the QL starts up) you will need to upgrade the Qubide. The version 2 ROM upgrade consists of a new EPROM, new GAL1 and GAL2 chips, new Qubide utilities disk and instruction leaflet. These were originally available from Ron Dunnett at Qubbesoft P/D, but since Qubbesoft is not actively trading in QL products any more, I am not sure if this upgrade is available or not.

Question: I'd like to add a mouse to my QL. How do I go about this?

Answer: There are two main types of mouse systems for the QL. The first is based around the QIMI (QL Internal Mouse Interface) system. The QIMI is available from Quanta. Apart from the pointer environment itself, this needs no extra software. The QIMI uses a 2-button Atari style mouse. The second system is based on a PC serial mouse. This needs an adaptor lead to connect it to a QL serial port, and software to convert the mouse movement signals to QL pointer environment signals. One version of this software is the Sermouse system from Albin Hessler, another is a piece of software called the DIY Mouse driver from Simon Goodwin, part of his DIY Toolkit series from QL World magazine and available from sources of his DIY Toolkit series.

Choosing a GD2 Colour

George Gwilt

Before the introduction of the high colour modes to the QL scene programmers had only four (or eight in mode 8) colours to choose from. By using stipple to combine two colours the number of choices was raised to 256. However, most of these do not combine to give readable screens if text is to be displayed. Hence the choice of paper and ink colour in a mode 4 program was pretty limited.

Now that 65,536 colours are available, and given that these can be combined in pairs using stipple, the choice has been dramatically increased. Of course this probably means in practice that the programmer just relies on using the old and tried red, green, white and black with an occasional daring leap to blue or magenta.

Unfortunately the choice of paper and ink colours for windows definitions in PE has not been increased, or, if it has by the time you read this, it is only very recently. TurboPTR and CPTR provide two ways of writing PE programs. Up to now the programs `setf` and `setz`, which enable the easy production of window definitions, only allow the user to specify the usual mode 4 colours.

I have been developing a way of letting a user pick one of the enhanced colours. When I know exactly how the new WMAN uses the new colours I will incorporate this in TurboPTR and CPTR.

For the moment I will simply offer a few notions on how a colour might most easily and

usefully be chosen by a user of `setf/setz`.

Palette

Given the 65,536 colour values, it is not immediately obvious how to pick, say, red by value. In fact for a long time now TurboPTR has included the values for a mode 33 red, green, blue, yellow, white, cyan and magenta so using `COLOUR_NATIVE` on a Q40 or Q60 presents no such problem. But what of the other possibilities?

One way in which the problem has been tackled is by the use of `COLOUR_PAL`. In this mode a defined subset of 256 colours is available. The first 64 of these have been given names in the standard palette supplied. TurboPTR uses these to allow sprites to be defined using one character for each of the first 64 palette colours.

Currently `setf/setz` can display 256 basic QL colours (using stipple), so to display 256 palette colours would be quite feasible.

This is one of the ways in which I would propose to enhance `setf/setz`.

Full Range

It would seem too restrictive to allow only a palette approach to deciding colours. However, to allow the display of all 65,536 colours would be wasteful of time and would probably make the choice too cumbersome.

The way I suggest is based on recognising that a particular

colour can have 31 different shades (excluding black). Each colour is defined by the ratio of red to blue to green. The brightest shade is that when the most predominant colour has full intensity. By reducing the main colour through the 31 steps towards black and by reducing the intensities of the other two colours in proportion we will get the different shades of the colour. There are thus around 3,000 different colours on this definition. This is much more manageable than 65,536.

First of all a main constituent colour is selected. Then the proportions of the other colours are chosen by up or down arrow keys. As the keys move so does the selected colour change in a display window. When the colour is satisfactory it can be chosen by pressing `ENTER`. The next stage is to select the shade, again by arrow keys. Again the displayed colour changes to show what is currently selected.

Finally, if a stipple is wanted a second colour can be chosen and, when that has been set the stipple value can be selected.

A selected colour will consist of various proportions of red, green and blue. This in turn will give rise to the value of the mode 33 word. This makes it possible to pick exactly the same colour in future by value alone, which is the third method, complementing the second one.

Selection by Value

The option to pick a colour by value alone can speed up the process if a colour has been selected previously and its value is known.

Launchpad Preview

John Perry

I never used to like Graphical User Interfaces. They never seemed to manage to do any of the clever things you could do from a command line. For all its painfulness, DOS had its attractions over early versions of Windows.

Similarly, I was always grateful that QDOS and SMSQ/E were basically command line driven, with the options of utilities like QPAC2 and various file handlers to make life easier.

In terms of program execution utilities, programs like Taskmaster and DEV Manager had their attractions in terms of making life easier, but always seemed to be one step behind what I wanted them to do.

In recent years, although I always preferred the QL, I became increasingly aware of Windows, after all, it's hard to avoid M\$ systems in the great big wide world of business out there. While I hated Windows ability to drive me totally insane at times, there was a grudging feeling that putting the pretty front end onto operating systems was what people wanted, and if a computer looked good it could to some extent fool you it was a good computer. And having programs which all looked the same and operated in a similar way was quite an attractive idea.

Programs like Cueshell, QRAM and QPAC2 for the QL have given a degree of taste of what such a system for the QL might be like, and on the whole I quite liked those systems. Having seen the articles about QDT and little snippets of information about Launchpad helped make me wonder what a full GUI for a QL might be like, especially now that SMSQ/E and the various emulators are almost daily enhancing the capabilities of QL systems with more colours, higher resolution and all sorts of other enhancements. While SBASIC has new commands for all these new facilities, it's becoming increasingly hard to remember all of them and now that the basic capabilities are there, we may as well make the effort to 'pretty up' the QL interface now that so many people are using pointer environment and mice on QL systems.

Having been a bit of a fan of Dilwyn's QL programs over the years, I was looking forward to the release of Launchpad and begged, pleaded and virtually bullied him to be given the first copy of the program. In the event, what I got was not a full version of the program, but what turned out to be the first working version, minus documen-

tation and some accessory programs, and a warning that it was the first alpha-test release, full of bugs.

I got about one page of notes and little else with which to get it going, but it turned out to be not only possible but quite a surprisingly painless experience given the early status of the program. The down side of all this was that within days of getting the program, it was a condition of receiving it that I write a review for QL Today. Given the unfinished nature of the program and the rather short notice in which this review was produced it might be better to look on it as a preview rather than a review as such, and I hope that any mistakes I make arising from the very short period I had in which to write this will be corrected by the time you read this. I've also been unable to produce screen dumps as the Screen Grabber part was incomplete in the copy I got, so I'll have to ask QL Today to add screen dumps where possible.

[I have added screen dumps from my system, but in fact you did not have to use the Launchpad screen grabber utility, any screen capture utility would have done the same job - Dilwyn]

Launchpad is what is called a Graphical User Interface. Rather than typing in commands you select them either from menus or by clicking on little symbols or icons on screen. While Launchpad is primarily described as a 'Program Launcher' (you create a list of programs the program will start automatically for you) it actually does a lot more than that, not that you'd guess from the rather spartan or minimal initial appearance - just a few symbols across the top, a few commands, and a few program icons supplied as examples.

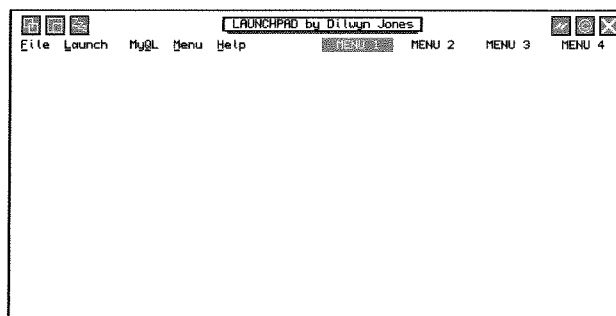


Fig.1 - the basic program layout

What you get is basically one large program (LAUNCHPAD_OBJ) which is the main program, a couple of small system files called LAUNCHPAD_DAT and LAUNCHPAD_PWL (which allegedly contain the settings, program icons, passwords and so on), plus a few smaller ancillary programs such as a couple of games, a graphics viewer, a text file viewer, a calculator (missing in the version I got), a file handling

program called Q-Trans which you may already have heard about and a few other programs which collectively go under the title of an Accessories menu. Some of these programs are missing (probably incomplete) as yet, some are fairly trivial and others rather good. Installation takes a little time - you have to copy the program onto your hard disk or a system floppy disk and configure Launchpad. There is no automatic installation, but the process is easy enough as long as you have used Config or MenuConfig (the standard pointer environment configuration programs) before, although the size of the files means it takes some time to copy everything.

But back to the basics. The program works on the basis of a desktop which contains all of the commands and icons. In fact, there are four desktops (which the author refers to as Menu 1, Menu 2, Menu 3 and Menu 4). If you are familiar with a Windows desktop, that is perhaps the best comparison. Indeed, if you are familiar with Windows, you will probably find it easier to use Launchpad as many of the principles will be familiar to you.

Go to the File menu at the top left and click on the Add New Program entry in the menu that appears. Unless all of the icons in the current desktop are already used, the first available is selected and an Item Definition Form appears. This is truly frightening at first, as it contains nearly 30 possible entries for each program you add to Launchpad!

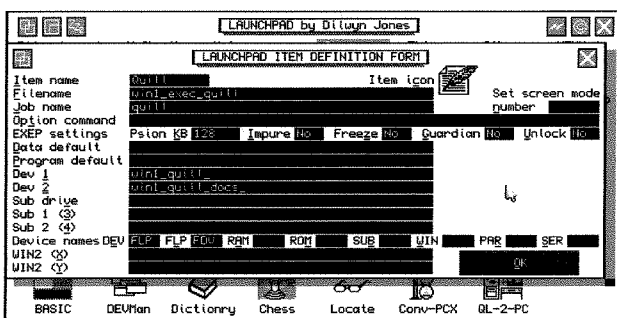


Fig. 2 Item Definition Form

All is not lost. It turns out that for virtually all programs, only 3 or 4 items need be entered - the filename of the program to execute, a name for it on the desktop, an icon to use and possibly a 'job' name, which is the name you see when you type a JOBS command in basic, this allows Launchpad to pick a program for you.

For awkward programs, you can set anything from DEV devices to memory settings, DATA_USE, PROG_USE and all sorts of other settings. See figure 2 for the myriad settings possible. This frightened me at first and nearly put me off, but once I realised that only the top 4

are needed for most of the programs I use, I breathed a sigh of relief. It was a bit like learning to ride my first bike. When I first got on the bike and promptly fell off, it nearly put me off trying to learn, but a bit of perseverance soon paid dividends and I quickly got several programs set up. When you set up a program, the settings are added to a system file in Launchpad's program directory. Depending on the speed of your system, this may not be noticeable. Given that it was an early program which I was a bit scared of given the warning about bugs, I ran it from a Zip disk to start with until I gained in confidence, because I was rather afraid of what it might do to my hard disk. The delay in writing to the system files was noticeable as a momentary freeze of the display (less than a second, but noticeable). Once I gained the confidence to move it all to my hard disk system, the delays were barely noticeable at all and had I not been warned that there was some hard disk writing in operation I might not have noticed it on the hard disk system at all. Once you have a few icons set up, it's time to learn the very complex procedure to execute the program. Just click on either the icon or the name underneath it. Yes, just one click and off the program goes! After the Item Definition Form this was a nice surprise even if my early multi clicks on some icons did manage to launch several copies of some programs.

Actually, if you HIT (left mouse button click or press SPACE with the pointer over the program icon), it tries to launch (or execute) the program. If you DO (right mouse button click or press ENTER while the pointer is over the program icon) you get what the author calls a 'context menu' - a menu called 'Action' appears with all sorts of options on it to do with that particular program (see figure 3)

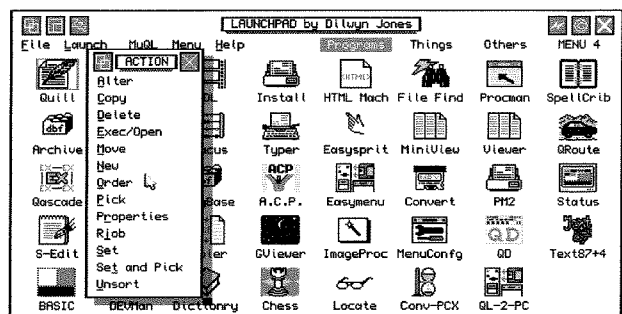


Fig. 3 - Action or Context menu

About a dozen options become available. You can start (or 'launch' a program - just to prove it's an early version, the program uses the term 'Exec' in some places, 'Launch' in others and even 'Open' in one place). You can pick a program, you can alter its settings, you can sort the menu, you

can even copy an icon if you need a similar entry for another program (e.g. having set up Quill, you might wish to copy it to setup Xchange with the same icon). Moving an icon is an experience and a half - click on Move, suddenly the icon starts floating, you can move it all over the display in drag and drop style. You can even click on the Menu Number icons top right to drop it into another menu. I've never really seen this on a QL program and it was a bit of a scary experience at first as I had no documentation on it. In fact it proved quite useful - the program usually puts new icons in the first available slot working from the top left corner of the desktop, so this was useful for putting the icon where you prefer it.

In fact, I later found that if I selected NEW from the action menu of an unused icon location, I could set up the icon where I wanted it without having to MOVE it. If anything, this was easier than the Add New Program command from the File menu.

This showed up a feature I wasn't too sure about. Icons have to be placed on a regular grid. Imagine some ruled graph paper, all icons have to be in a line vertically and horizontally, you can't have one halfway down another one in the same way as you would with the Windows desktop. And you can only have a maximum of 40 icons per desktop in an 8x5 grid irrespective of screen resolution. The gap between them just gets bigger on higher resolution screens, but the scaling does change automatically, so if you set them up on a QL sized screen then later changed to an SVGA screen, the icons don't end up clustered in the original QL-sized area in the top left of the screen or whatever. This is a bit of a 'swings and roundabouts' situation, you tend to want pixel fine positioning, but set up several icons and think about it and you'd end up with a complete mess, possibly with icons hidden behind each other which has happened to me with Windows. Launchpad seems to handle all this automatically, I've never ended up with hidden or overlapping icons so far. Another limitation is the fact that 40 icons per desktop and 4 desktops means that the maximum number of programs you could set up seems to be 160. There seems to be no equivalent to the Windows START menu for setting up programs in a menu without icons, unless this is something which doesn't yet exist in this early version.

[This is not something I had planned on adding to the program, but if users find "only" 160 icons too restrictive, I may consider adding such a facility, although you could always use the Jonathan Hudson Qascade program - Dilwyn]

If you don't use a program often enough to warrant assigning it an icon of its own, there is a command called Launch A Program in the Launch menu, which brings up a file selection menu somewhat akin to the Q-Trans file lists. In this list, filenames are preceded by an E if the file is an executable program - click on one of these filenames and another window opens which lets you either start the program as its is, enter a command string or even specify some memory to protect for Psion programs (Quill etc), guardian windows, unlock, freeze or impure - I think these are essentially like those available for the EXEP command in basic.

In fact, it seems possible to execute files other than the normal executable programs. It seems to work via File Info, but as I do not have any instructions for Launchpad at the moment, it's difficult to know exactly what is possible here, except to say that this could well be very useful - you could start a text file, and your text editor pops up to let you view and edit it, for example.

Also on the Launch menu is a sub-menu called Accessories. As the name implies, this contains a number of smaller programs like a file handler, calculator, a couple of games, a screen grabber, a screen saver program and so on - see figure 4 for details. The games are fairly trivial and unexciting, though serve to pass the time. The Q-Trans file handler you may already know about because it was released by itself and has been described in QL Today. The character map program is useful, it shows the complete QL character set and you can click on a character and send it to the hotkeys stuffer buffer to transfer to another program, really useful if you use accented or special characters and don't know where they are on the keyboard and don't have the manual to hand. I can't comment on some programs because they were missing, probably not complete yet. Fortunately, Launchpad seems to do no more than complain it can't find them then carries on without them.

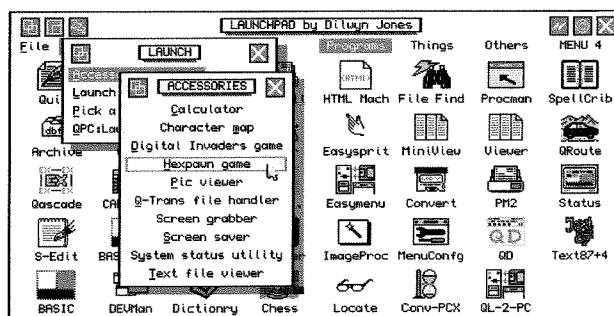


Figure 4 - Accessories menu

The Launch menu also includes a PICK menu.

The names of the icons on the desktop appear here and you can click on one of these. If the program is already running, its display pops up ready for use. If you are only using one or two programs at a time, it's easier to use CTRL C to get from program to program than to wade through this menu to find the program you want, although if you have several programs on the go at once, it might be easier to use this menu.

The final item on this menu is something which seems to be available only to QPC emulator users. It seems to be possible for Launchpad to launch a DOS or Windows program from within QDOS or SMSQ/E on a Windows machine. I was unable to test this.

[This facility is simply like the QPC_EXEC command in QPC2, this is not really a Launchpad facility, it simply uses an underlying QPC2 facility - Dilwyn]

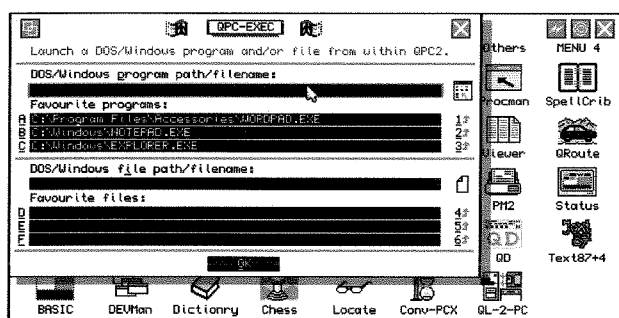


Figure 5 - QPC:Launch DOS/Windows file

Launchpad itself seems to sit quietly in the background until needed. In fact, it seems to be just another program which you can CTRL C in and out of, pick with a hotkey and so on. Normally it occupies the full screen, so if other programs overlap, you can also pick it simply by clicking on any part of its display. In this respect I think it's probably wrong to call it a GUI or front end on the operating system because it doesn't really change the behaviour of the QL at all in the sense that such a front end might be expected to make. On the other hand, I find it good that as far as I can tell, you continue to use the QL as normal and there is less risk of creating incompatibilities and changes to the way things work.

Users

This was an area of the program that I had great difficulty understanding, until I realised it works a bit like the corresponding facility in Windows. I had very little by way of instructions, so I'll cross my fingers and hope the following description is correct.

If several family members wish to use the QL, it can be handy to have separate setups for all of

them. My youngest likes to play games, my eldest doesn't really use the QL and my wife only really uses it to play the occasional game and type a few letters and maintain some lists for an organisation she's a member of. I'm the main user.

When you first use Launchpad, it's set up for just the one user and there are no passwords or anything to worry about. You start the program, the desktop and your icons all appear and that's all there is to it.

If you wish to make it have a different set of settings for anyone else using it, you have to use the Users command in the file menu. With this, you can add a list of users (I think the limit is 16 users). Users can have names to identify them and if required, a password. If you leave the password blank, it means no password.

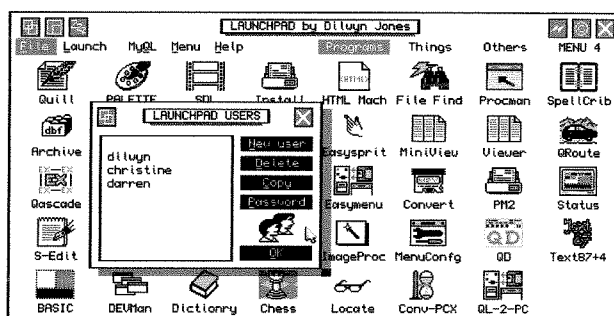


Figure 6 - Users menu

There always has to be at least one user, it doesn't seem possible to delete the first one. If the settings for a new user are similar to an existing one, you can even copy the settings for that user into a new user and take things from there.

Once you have set up a few users, the next time you start the program a Login screen appears, where you have to enter the name of the user, plus the password if one was specified. Unless you get this right, the program won't let you in, which might be a bit of a problem if ever you forgot the passwords. I asked Dilwyn about this and he did say that finished versions of the program will come with a small program to edit and reset passwords to cover this eventuality, though he did admit that there was no way of recovering forgotten passwords from within Launchpad itself (security reasons maybe, though I don't really see the QL as being 'secure' in that sense since you could simply CTRL C to BASIC and exec a program from there, Launchpad does nothing to prevent that).

[You could simply EXEC_W Launchpad if all you want to do is restrict access to BASIC - Dilwyn]

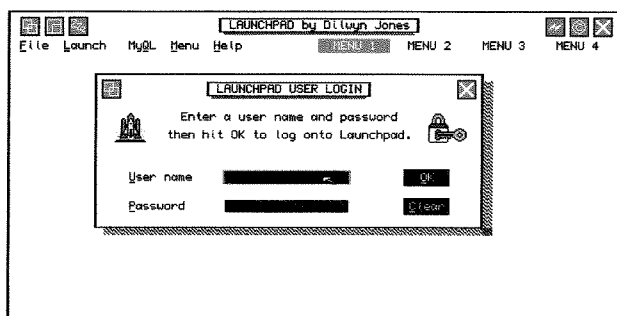


Figure 7 - Login screen

The File menu has a Logoff option in addition to the Exit command. Logoff simply clears the display and takes you back to the Login screen ready for another user to use the program - useful in an office environment I suppose.

MySQL

The next step for me was to explore the MySQL menu, which contains a real plethora of facilities. The name MySQL is in fact remarkably apt, since it's mostly about specifying system settings such as display resolution, mouse speed and so on. I'm not sure I fully understand all of it and it will certainly take time for me to get used to it all. The main thrust of it seems to be that the top 8 icons are for setting the clock, display, keyboard, Launchpad's own settings, mouse, network, system settings (DATA_USE, PROG_USE, DEV settings, various _USE commands and a facility to create new directories) and a Users icon which seems to be the same as the one in the File menu.

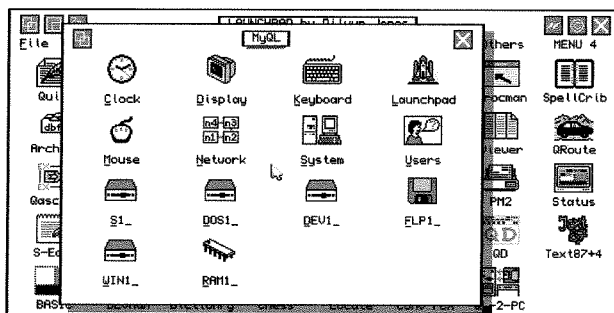


Figure 8 - The MySQL menu

The bottom eight icons seem to launch the Q-Trans file handler to list files on the device shown. In my case only 4 of the possible 8 items were shown, presumably it only shows icons for devices which actually existed - in my case, FLP1_, DEV1_, WIN1_ and RAM1_ (although I have two floppy disk drives and there could be up to 8 ramdisks, it only showed FLP1_ and RAM1_, I don't know if this is a bug or how it is intended to work).

[That's how it's meant to work, if you want the other drive (s) just press the number in Q-Trans when it starts, so to get FLP2_ click on the FLP1_ symbol then once Q-Trans is up and running, press '2' in that program - Dilwyn]

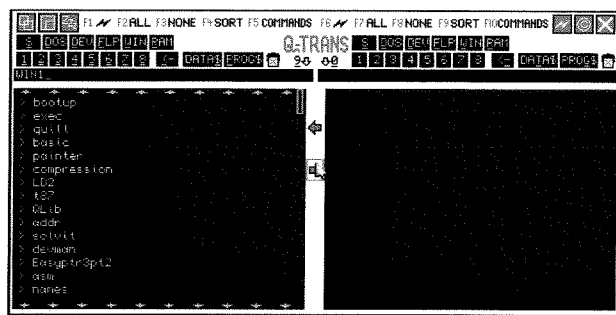


Figure 9 - The Q-Trans file handler

The menus themselves are quite easy to use. Take the Clock Set one for example. A box appears, in which a clock shows the current time at the top and you can then click in one of the six small boxes to set anything from the seconds to the year number. Think ahead slightly and set it a few seconds beyond when you enter the seconds, as the time is not changed until you hit the OK button at the bottom. If you make a mistake, this gives you a chance to correct it first, or you can hit the ESC button to abort setting the clock.

The Display part lets you set the preferred screen resolution, the colour depth on modern systems like Q40 which offer more than one level of colours, the screen saver type and delay before it cuts in (this is quite a good screen saver program which works with mouse or keyboard, a choice of screen saver types and you can even write your own screen saver module, though no information was provided on how to do this), plus background colour and image (presumably like Wallpaper etc in Windows, though I didn't have the time or information on how to use this before writing this).

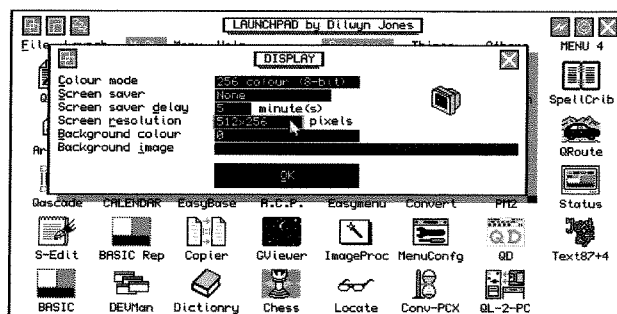


Figure 10 - The Display settings menu

The Keyboard menu lets you set the usual auto repeat delay and frequency settings, though

most people won't need to bother. It will even let you change CTRL C to some other keys if you wish, though why anyone would want to do this is beyond me. You can also set an SMSQ/E keyboard language table from here. Again, I didn't know how to approach using this.

The Launchpad settings window just lets you specify where Launchpad finds its system files, and what printer port it uses when it's printing.

The Mouse part lets you set the mouse acceleration and wake up speeds. Most people won't need to bother with this.

The interesting part of this (translate that as "hard to grasp at first") is that it not only sets something there and then, but next time Launchpad starts it tries to use these settings, so you have to be a bit careful. In fact, it seems to go a step further, all users seem to be able to have their own settings, so if I prefer a great big 800x600 display and my games playing son prefers to use 512x256 QL displays for all the old games which won't run on bigger displays, that's perfectly possible. I assume though that some care is needed in case this screws things up as I don't know things would work if you set some impossible settings, though I suppose QLers know their own machines and what should be possible.

Launchpad has a Help menu, but no help text was available, only the 'Copyright' screen was shown. Apparently it will show a Help file in finished versions.

Summary

I was initially wary of using Launchpad, as it was incomplete and described as being "full of bugs" and a bit unstable. It proved to be a little bit better than the warnings implied, indeed as long as I am careful to avoid the areas of problems I know about, it is remarkably stable given that it is the very first version released to a few testers. It is very like Windows in some respects, but always with a QL feel to it (Windows with a QL feel? What a horrible thought!) so QLers used to Windows will probably find it easier to master than those who have never used any sort of GUI before. Unfortunately, the Windows feel even extends to General Protection Fault, although its use is different in Launchpad. If Launchpad crashes it comes up with a General Protection Fault screen and a short description of what went wrong (I first copped it when entering passwords, there is definitely a problem there as it seems

unable to accept some names as passwords in this early version). I never thought I'd live to see the day we got General Protection Faults on the QL unless it's the author's idea of a sick joke!

I am happily able to use this early version with a bit of care as I get used to the bugs in it and avoid them. It happily sets up, launches and picks programs (one bug is that you can pick SuperBASIC from the Pick menu but not by right clicking and selecting Pick from the Action menu). It seems to happily change system settings and do most of its operations, the Accessories menu will prove quite useful when complete and all in all it's a pretty nicely thought out system, though I would like to see a Qascade-style text menu built in as it can be a bit awkward finding icons when you have loads of them set up on the desktop.

The multiple users facility is probably overkill for many people and most will avoid setting up passwords and so on. The facility, like many in Launchpad, is there for those that need to use it and hidden away when not used. I like the way the login screen never appears if there is only the one user with no password, and the whole login procedure itself is simple enough, although the procedure for setting up new users is difficult without instructions.

I also like how the most commonly used features are those easiest to access and the least used features are hidden so that they don't get in the way. Launching a program from an icon is simplicity itself - just left click on its icon and off it goes. The menus are clear and simple on the whole, the icons are pretty basic by modern standards but not bad by the standards of some QL screen graphics I've seen - it can't be easy to do something like this with basic 4 colour 512x256 pixel screens.

The colour scheme is very limited, basically white and that's it. Initially I thought that given the relationship of black and the QL, it might have been better to reverse the colour scheme and make Launchpad black like the QL, then it occurred to me that the white Launchpad backing stands out against the black backing of most programs like Quill.

Using Launchpad from floppy disk is a bit of a pain. You have to configure it to prompt for the System Disk when you change something, because it needs to save the new settings, although I think that pressing ESC will allow you to continue without saving the changes, and the program forgets the changed settings next time it starts.

One thing I did notice was that when you quit from Launchpad, it does not shut down any jobs it started which are still running (screen saver excepted, I noticed). I don't know if this is a bug, or an intentional feature.

[The latter - I thought it too restrictive and risky to close everything down, I noticed I kept forgetting to save files before quitting Launchpad and lost quite a few unsaved files while developing Launchpad, so I thought I'd save others from suffering this problem - Dilwyn]

I find Launchpad very promising as long as you can live with some shortcomings like lack of choice of colour schemes (the program is written with Easypr so this may be a reason) and a lack of an equivalent for a Windows Start button - I'd like to see this added to the Launch menu as an extra command, something like Launch Menu.

The icon names possible are quite short even when large display sizes are used - a maximum of 9 letters in the preview version. Icons have to be on a regular grid and can't be positioned with pixel-fine accuracy, though this does have the benefit of meaning you don't suffer from hidden or overlapping icons. You have to use the built in icons, it doesn't seem to be possible to load any additional sprites or anything else you could use as icons, and there is no control over the fixed icon size. That said, there is a good choice of icons built in (two pages of icons available to choose from when you add a new program

symbol). Launchpad makes quite a demand of your system, the program itself is some 300kilobytes in length, very large for a QL program and seems to demand quite a lot of free memory.

Overall, I am very pleased with this program, and despite the warnings issued with it regarding the early version bugs, I'm happily using it regularly on my system after only a few days of receiving it without too many problems. It really makes a difference to how I use my QL! I am really looking forward to the completed version! I've seen Launchpad described as a "less ambitious" system compared to QDT. If true, I'd really like to see QDT!

I notice that the author has set up a Launchpad page on his website - see

www.homepages.tesco.net/dilwyn.jones/launchpad/launchpad.html

for more information on this promising little utility!

Editor's note: I do not normally add as many comments of my own to such a review, but given that I am the author of this program and I asked John to preview an unfinished product at such short notice without instructions, I felt obliged to make the highlighted additions to the review to correct some errors (indeed as requested by the author of this review). I also added the screen dumps which show the program running in more ideal conditions on my system. Dilwyn Jones

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Compiling the SMSQ/E sources with GWASS

Wolfgang Lenerz

George Gwilt makes a compelling case for using his very fine GWASS compiler for compiling SMSQ/E (see last issue of QL Today, p.17).

I find the idea of using an actively supported assembler for the sources very appealing. This is even more so as I don't know at all what the current status (if there is any) of development of the QMAC compiler is. If my memory is correct, it is sold by Quanta, but I don't know whether there is anybody still supporting that program (on the other hand, it seems to have pretty little bugs). So, in principle, using Gwass for compiling the sources is something that I welcome.

Well, as they say, the devil is in the details. There are several things, that, for the time being, seem to preclude using Gwass on the SMSQ/E sources.

The first is that the sources themselves must be changed, notably in the way Macros are called. George points out that most macros will have to be extensively changed. That in itself isn't that much of a problem - there are "only" 18 macro files in the SMSQ/E "mac" subdirectory, and somebody really determined could go through them pretty quickly, I guess (there are also macros in some normal source files).

No, the problem as I see it, is that the macro calls themselves must be changed - and this will be a LOT of work. Each and every source file will have to be checked and, possibly, changed, because many of them use macros.

Moreover, you know how it is - change something in a source

file, and it, or something else, will break, even if it's only a macro call. So an extensive round of testing would have to follow - even more work. Yet, this could be overcome with enough work. I'm just not sure that the work should be poured into these changes, rather than developing new things for the system. But hey, it's a free country, and if people want to work on that, I'd take anything that I could get...

However, once the sources are changed, QMAC will no longer compile them, and that, as we shall see now, is more of a problem.

Indeed, the second reason stopping me from adopting GWASS for the sources is, to my mind, more serious: GWASS doesn't work on all machines. This is not some kind of a bug, but a deliberate design decision by George: GWASS needs at least a 68020 processor to function. However, several machines on which SMSQ/E can run, do not have a 68020. These are the Atari ST machines, the GoldCard machines and, most importantly, QPC.

Now, I've always stated that I wanted SMSQ/E to be coherent, as much as possible, on all machines across the range. This also implies that you can use all of these machines to (re-)compile the sources. Using GWASS would simply exclude the above mentioned machines from that. I cannot, at this stage, condone something like that.

Of course, it is probable that some of the machines that'd be left out in the cold would not need the facilities offered by

GWASS, but, if QMAC can then no longer be used to compile the entire sources, this wouldn't further us in any way.

And, finally, a pretty much selfish reason to exclude GWASS.

The whole purpose of using GWASS is to introduce into the sources advanced instructions that can be used by the more powerful processors found, e.g. in the Qx0 or Atari TT machines, with the aim of making the OS ever more faster and efficient - which, of course, is something we can all agree on (I think!). However, for the time being, this puts debugging at a severe disadvantage. Indeed, I, like most others, use the QMON/JMON combination to debug the OS. Unfortunately, QMON/JMON can't handle these advanced instructions. So they will generate an error each time they encounter these instructions, which can (and probably will) make debugging the OS a nightmare.

Now, it so happens that I seem to be the person at whom many "problems" with SMSQ/E seem to be directed. I don't really know why this should be, since that isn't part of the job description of the registrar - but it is a fact that this happens. So I do quite some debugging. And I can't see myself doing that without a tool that can handle the instructions and allow me to step through them. There are already some very few 68020+ instructions in the code (for the Qx0 machines) and using them is not easy.

The solution, of course, would be to amend QMON/JMON, but I don't think that this will happen anytime soon, probably for copyright reasons.

So that leaves me out in the rain - which is why, for the time being, I can't see myself using GWASS for the sources - unfortunately!

SourceEdit – A new SuperBasic development tool

Phoebus Dokos

About A few days ago, Jimmy Montesinos, asked me if I have a syntax highlighter for SuperBasic. Truth be told, I was trying for a long time to finish a project using the UniRed editor. However the coloriser script used by UniRed albeit powerful, was very difficult to use and required a lot of time. I was all but resigned to the idea (although the work had progressed to about 70%), when Jimmy showed me a couple of screenshots of his work with SourceEdit. I was intrigued and promptly downloaded SourceEdit (which is free). SourceEdit, apart from its syntax highlighting feature, also sports an Intellisense-like feature that completes your code (by pressing Ctrl-Space provided definitions for the keywords exist), an ability to use custom help files (a couple of words on this in a bit), plus user-defined tools.

Its language editor was extremely easy to use and although not as powerful as the features of UniRed, I decided I'd give it a try. Within minutes I had my first quasi-working script (basic stuff, REMark, FOR END FOR loops and the like) and I was very impressed. Accordingly I went on to compile a basic list of keywords. In the meantime Jimmy sent me his work thus far, and I started to enhance that. Jimmy had included all the operators and most of the Loop constructs but lacked extra keywords. Thanks to the EXTRAS facility of TK2 (and SMSQ/E) I was able to send such a list to a file, promptly processed it with SourceEdit to make it to a PC-style text file (CR/LF – By the way SourceEdit supports QL-style files ie. LF only), merged it with the list of keywords by Jimmy and after importing them into OpenOffice's Calc I removed all double references, added extra keywords that didn't make it into the list (EXTRAS doesn't list everything, for example AT and RETurn are omitted).

We weren't totally satisfied with the results as it would mean that a significant amount of QL programmers wouldn't have all the keywords that they usually have in their programs. Although extremely easy to use we didn't see a point of having everyone do their own changes as SourceEdit and the SuperBasic language definition wouldn't be much of help (would it really? :-)).

Jimmy and I, started gathering the major toolkits (Turbo Toolkit and the Q_Liberator extensions), the FPU FN extensions, the RomDISQ and Super-Hermes drivers/extensions, the cache mode extensions and a couple others we got our hands on and compiled a rather large recognised keyword list of (currently) 578 entries.

The result was recorded into a SourceEdit language file (which in the SourceEdit's author's honour, was put online minutes after being submitted by Jimmy!)

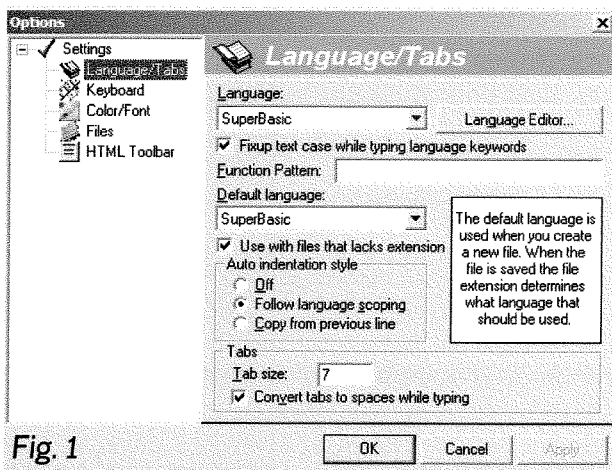
Why?

The answer is why not? The reasoning behind the use of Windows is not because I prefer Windows over SMSQ/E (The contrary happens actually!) but the fact is that we lack development tools under SMSQ/E. The only program that we have for really powerful editing on the QL is QD but for production use I find it very difficult to use. (I have to stretch that, that's a 100% personal peculiarity, nothing to do with the quality or the features of the program which I find outstanding. My main problem is with the way the QL treats the cursor and how it's tied to the mouse which I always found utterly silly :-)) I do prefer shift-cursor or PgUp/PgDown to mark large parts of text and so far, no text editor (that I know of) on the QL supports that. Another reason has to do with the ease SourceEdit can be tied to an integrated development environment. (QD can too, but such an integrated development environment doesn't exist on the QL yet.). As with many other platforms you need tools to create tools as it's one of the most complex parts of the programming life-cycle. In short, if something similar was available for Linux and was as easy to use I would opt for that. In any case cross-platform development is not a big deal for me. Even Amiga-Dos was originally developed on the QL!

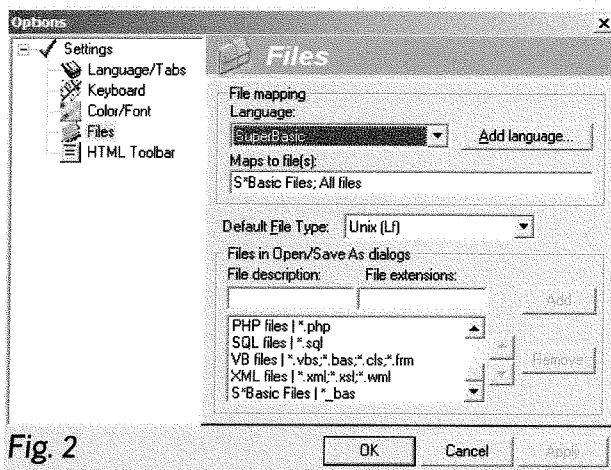
Installation and use

After installing SourceEdit the procedure for the SuperBasic language is straightforward. Decompress the superbasic.zip file directly into the LANG directory (usually c:\Program Files\SourceEdit\LANG) and you're in business! – Well not really... read on! –

In order to use the language file and assuming that you are going to be using SourceEdit for QL work only (don't you dare of thinking about anything else!), you should access the menu Tools and then the menu Options (Or go directly there by pressing ALT-ENTER). Select then "Language/Tabs" (See fig. 1) and then click on the "Language"



pull down and select SuperBasic. Next click on the "Fixup text case..." option, as this will make sure that your REMark appears correctly and not as "REMARK" or "remark". Selecting Default Language will make sure that all your new files will follow the Superbasic standard and Auto indentation style set to "Follow language scoping" will make sure that the contents of constructs (ie FOR...END FOR, DEFine PROCEDURE...END DEFine) will be indented for readability. Tabs should be put to your favourite style. The Color/Font option in the Options dialog, can be very helpful if you dislike the colouring style that SourceEdit's author favours, giving you



the ability to change it to your liking. The last thing you need to change is the Files options after you create a filter for Sbasic files (see figure 2).

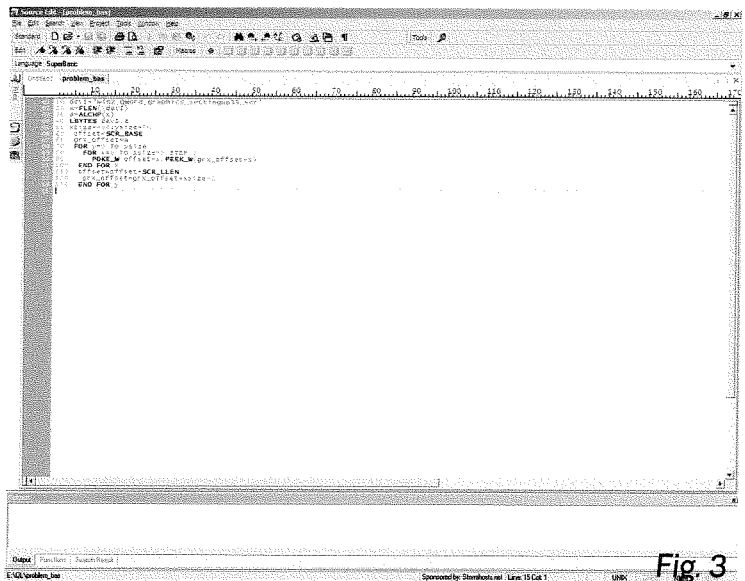
SourceEdit also gives you the option of changing your Language definition on the fly by clicking on the Language toolbar's drop-down (see figure 3).

While typing you'll see that you can call up keywords by pressing CTRL-SPACE (See fig.4). SourceEdit comes as well with other

language definitions that you will see immediately after downloading.

The future

Jimmy has been working on a line number stripper filter (that can be called from within SourceEdit, that simplifies editing) and that can later reintegrate numbers (not that they are required anyway as SBasic doesn't need them really and if no GOTOs or GOSUBs exist then you have no problems). Additional changes planned are a even more complete SuperBASIC keyword list catering for virtually all toolkits in existence



and a Custom SuperBasic Help file -That would give programmers a more complete solution for cross-platform development-. Who knows maybe we could even write a cross-platform SuperBasic language compiler....

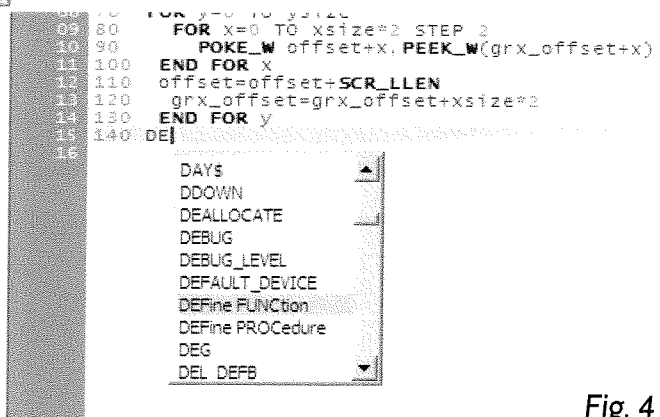
Links

Jimmy Montesinos' site (QL2k etc.):

<http://www.jadnam.org/QL/index.php>

SourceEdit site:

<http://www.sourceedit.com/>



We Lesser Mortals

Geoff Wicks

My ex-wife once bought a laptop for her work. "No big deal!", I hear you say, but this was in the pre-Windows days when laptops were called portable computers and cost an even bigger fortune than they do today. As sold the machine was almost unusable because it was configured for Dutch use, but had a UK keyboard. Most PC experts brushed off my complaints with a supercilious, "It's simple. Just change the KEYB command".

The experts were wrong. When something costs £2,000 good customer service means no tweaking should be needed to make it work. And changing KEYB was far from simple, because some of the keys used to access the command were the ones that did not work correctly. It took me over half an hour to study the UK and Dutch keyboard maps, and then type in an odd looking command line to get the computer working.

Stories like this bring out the smugness in QL-users as being typical of the impersonal, commercialised PC world with its complicated operating system, unlike our simple, user-friendly QL community.

I have news for you. When it comes to dealing with people who don't understand their QL, we can be just as offhand and unhelpful. I know this from some of the telephone calls and emails I get from users with a problem. One man, wanting help in recovering his deceased father's QL files, wrote in frustration after a bad experience with a QL expert, "I am a Windows user, not a

Linux/QL specialist". I comforted him by saying our skilled programmers mean well, but some have difficulty in understanding the problems "we lesser mortals" have.

This article was inspired by another recent telephone call. A user was unable to transfer his files using QL-2-PC Transfer, but from his description of the problem I could not understand what was going wrong. I asked him to phone back half an hour later so that I could set up my machine and follow what he was doing step by step. When he did this everything fitted into place. His problem was not QL-2-PC Transfer, but the menu_rext extensions.

The client had bought a second hand QL system plus additional software, which had included the menu_rext extensions and QL-2-PC Transfer. The trader had installed the software for the client, but the latter had not fully understood what had been installed and how the two programs worked together. The menu_rext extensions are user-friendly and intuitive to use if you know what their purpose is, but if you are not expecting them it is easy to become confused. I was able to give the client a quick tutorial over the telephone and could hear his gasps of pleasure as he realised the versatility of the extensions.

Not all QL users are computer experts. We traders still come across the occasional black box and Trump Card user. Other users, with more advanced systems, are more in-

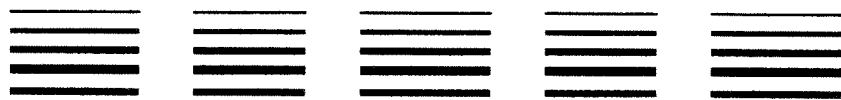
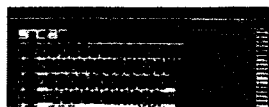
terested in using the QL for word processing or simple business use than in gaining a deep technical knowledge. Yet other users have bought QPC hoping to gain the best of both the QL and PC worlds, but have found the program difficult to use.

Those of us whose main "QL" is now QPC may find this hard to believe, but if you think about it is quite logical. Indeed as QPC has improved for us in its versatility and sophistication, it has become more difficult for some people. Try explaining in simple terms to a person who is not fully computer literate the difference between win1_ and dos1_. It is not as easy as you might think. Both use the PC's hard disk, so why do we need both?

Even the concept of an emulator can be difficult for some people to understand. You tell them that when QPC is running, the PC is no longer a PC, but a QL, but you can still switch between QL and PC programs and save and load from the PC's hard disk. You talk about QPC being a Windows program, but how can it then be a QL? And if it's a Windows program, why doesn't it work with every printer as other Windows programs do? Even some skilled QL users have difficulty in understanding and explaining that.

Disks are another big problem. Most of us in the QL world grew up with DD disks and then upgraded to HD and even ED. We are far more knowledgeable about disks than most PC users. Even so we can still get into some terrible muddles, and disks are one of the greatest areas of difficulty for QL-2-PC Transfer users.

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Sometimes it is difficult to determine just what the disk problems are.

First of all there is the difference between a PC formatted disk and a QL formatted disk. To complicate matters further some of the older QL programs for writing to PC formatted disks only handle DD disks. Then there is the formatting difference between a QL word processing file and a PC word processing file. And the really nasty snake in the grass is the pre-gold card QL system that formats HD disks as DD so that PC's are unable to read them.

If you think disk problems are only for the ignorant, there is one that has caught out several QL experts. Use QL-2-PC Transfer with QPC installed on a Windows98 PC and transfer a file to a PC formatted disk. Tap ALT + TAB to return to Windows and look at the contents of the disk. Now go back to QPC and transfer a second file. Use ALT + TAB to check the directory and this second file will not be in it. It is on the disk, but because of some form of disk caching, Windows98 does not see it.

Helping people with problems has taken on a new dimension in the last 18 months or so, as I have been increasingly asked about recovering information from the files of QL users who have died. (A Google search for "QL PC Transfers" quickly brings people in contact with me.) Sometimes these calls come from family and sometimes from a club or society who need to access their old records.

Some of these people have never used a QL and I cannot ask if it is a QDOS, Minerva or an SMSQ system. More often

than not I have to ask what the QL looks like to determine whether it is an original black box or a more up to date system. I then have to judge whether I can teach them to use the ver\$ command. I cannot ask about the pointer environment, but ask instead if they have found any of the former user's software. This gives me some idea of his level of QL use. It is only after I have answers to these questions and have formed an assessment of the caller's own computer skills that I can start to advise on the best method of recovering files. Some of the callers have never used a DD disk, and have always used Windows. MS-DOS commands, switches and parameters are a world they have never experienced. Hence the anger and frustration of the Windows user when he was told to use qltools. "I am not a Linux/QL specialist."

The Linux experts in our midst have made a great contribution to the QL, especially in porting programs from the PC. Hopefully they will also write the filters that will enable us to use practically any printer with QPC. But their weakness is the lack of user friendliness in their programs, with the result that much of their work has remained outside mainstream QL use. I have the impression some Linux experts believe that pure programming means programs must be started with complicated commands and switches. Computing has moved on since those days. It is an unpleasant message for QLers to hear, but there are many things we can learn from Bill Gates.

One of the reasons QPC has become such a popular program is because Marcel Kilgus

has made it user-friendly. He has listened patiently to many comments, serious and silly, professional and amateur, practical and impractical and used this information to continually improve the program. We should all try to follow this example to gain more understanding of users who are not as computer literate as we are. Indeed this is an urgent priority because I fear we are losing our ability to communicate with many people on the peripherals of the QL community.

I do not wish to criticise the editors of QL Today, who are dependent on the copy they receive, but I have the distinct impression the content of the magazine has become more technical in the last 18 months or so. This is inevitable given the developments in SMSQ/E especially now the colour drivers are no longer a new toy, but are beginning to be used in programs. But are we in danger of becoming a magazine for the few? What does the less skilled user have on the content of QL Today?

Or take a look at QL shows. Apart from North America, when was the last time there was a formal demonstration of a new product or a talk at a QL workshop? Where are all the people who used to bring their own QL's and ask for advice or give advice to others? Bluntly, what has the less skilled QL user to gain from attendance at our present style of workshop?

Unless we are careful the QL community will become a smaller and smaller group of more elite but more inward looking people. And one day we shall finally disappear up our own I/O ports.

The Guardian Newspaper's Online section often has little things of interest to me in it and every now and then one of them makes its way into this column. I noticed, the other day, that the Museum of Computing at the Oakfield Campus of the University of Bath in Swindon is hosting a History of Home Computing Exhibition. I do not know how long this will run for but you can check this out at www.digitalhistory.org.uk. Star of the show is, apparently, the '1978 Science of Cambridge Mark 14' which had a massive 256 bytes of RAM. It was designed by none other than Sir Clive himself and was, according to them, the thing which set him on the path to the Spectrum and to the QL. If you are in the area that may be a good place to visit.

And What Do You Use Yours For?

One other thing which interested me in the same edition of the paper was an article about active web use. This is a process where people do not actually go to websites and look for the information. They use another program to extract that information for them via an Application Programming Interface. Now, that Interface is not platform specific. It is, in fact, a series of defined ways to communicate with engines that exist on the web. This already exists in the form of 'Google Alerts' (www.googlealert.com) and in some other areas.

The reason for this long preamble here is that this would make the web accessible to

QDOS/SMSQ users without the use of an internet browser. If someone interpreted these APIs so they can be used from a QDOS/SMSQ system we would be able to extract data from the web. At the moment there are no real standards for these interfaces but the framework is being built and should be looked into.

ReQLaim the Future

There has been a lot of talk on the ql-users internet group about ways to revitalise the QL Community. Tarquin Mills started this off by suggesting that there should be a Workshop in Norwich and Geoff Wicks added comments about the way that shows today differed from those of a few years back. Many of Geoff's comments rang very true. When I was organising this year's Hove show, for instance, I spent a while trying to decide if I could have some talks and other sessions on the day but I honestly could not think of anyone who might have something to talk about. Back in the days when I arranged my first show we were pushed to fit in all the people who wanted to do something.

I suppose that this is a sign of the times. There are fewer new developments to put before the people these days and that is a bald fact. I feel that the coming year could see some change to that situation. Already we have the colours for the Window Manager and the release of the first versions of SMSQ/E with changes brought in by the users. QDT is very

much at the starting gate and the version that Jim sent me just before the US show looks like it will be a very interesting development. Nasta is still talking in a positive way about his future plans for hardware and, more importantly the readership of this magazine has stayed steady through the current bout of renewals.

There will be changes over the next 12 months and there is room for some optimism about the direction we are inching our way along. We do need to revitalise the community and get some more contribution and participation but we also need more products and development.

I have just heard that the Quanta AGM next year will be held in Manchester and that it will be a two day event celebrating the QL's 20th Birthday. This seems like an excellent start to the process so it would be very nice if we could get a large number of QL Users along to it. There may be some more details in this magazine but, if not, you will find them in the next issue of Quanta.

Quomunity Spirit

One thing that Geoff mentioned about the state of QL shows is the fact that these are now more social events than trade shows. That is very true. It is a place to meet old friends and chat. It is, therefore slightly saddening that many of the shows have lost that overnight section. The first shows I attended as a trader nearly always involved an overnight stay in a hotel somewhere. This also was often accompanied by a meal and session at the bar at which many QL stories, issues and ideas were discussed. In fact it was in some of these bars that many QL legends

grew too, (including the memorable time in Ireland when Stuart Honeyball had spent most of the afternoon drinking. We met him coming out of the bar as we were all walking to it after packing the show up. He went back in and carried on drinking until closing time. He then went out, got onto his bike, and fell into a ditch!) This kind of shared experience is something we are now missing and something which I would like to see revived.

We are a diverse community with a single point of contact but a lot in common so we should exploit that sense of community and use it to make us stronger.

True Colours.....

Over the past few columns I have waxed lyrical about the new colours available to users of SMSQ/E and the new Window manager. It is no surprise, then, that most of you have been very interested in getting to grips with the new system. There have been a few hold ups and glitches in getting them out to the public so, for most of this time, there have been few people who could actually try them out. I hope that this situation is now coming to an end.

Part of the problem in getting these releases out to the users has been with the problem of what to do for those people who do not have a system that is capable of displaying the colours. Jochen was determined that these people would not lose out when the programs get updated. If we had just released programs like QD, QSpread etc. for use on the new system anyone with a standard QL would not have been able to use them because their system would not

be able to handle the sprites and colour definitions. This may not be too much of a problem in itself because they could go on using the older version but it would mean that these users would have been shut out of any new features that were added to programs converted to use the new colour schemes. It would also mean that any new customers would be limited to those who had the latest versions of SMSQ/E. Maintaining two versions of programs was not an option that would be easy to handle and, as the changes grew, the two programs would become harder and harder to keep in line.

It is this that has prompted Wolfgang Lernerz and Marcel Kilgus to get the new PTR_GEN and WMAN together for use on non SMSQ/E systems. This does not mean that these systems will now be able to display the colour palette that SMSQ/E does but it does mean that they will be able to read and use the programs designed for the new system. I do not know who did the most work on this (but I can make a good guess) so I cannot offer any personal accolades but well done anyway.

While I am on the subject of colour displays there is one subject that may be misleading some people. The colour displays will only work if the hardware support is there. This means that you can run the new version of SMSQ/E for the Gold Card with Marcel's Colour Drivers on a standard QL with a Gold Card but you will not see the colours. In order to do this you will have to use an Aurora. Six years after its release the Aurora will finally be able to display the colours it was designed to use.

I had to go to the shelf to check out when the Aurora was released (It was mentioned in Vol 1 iss 6 of this magazine that it was due for release.) I noticed that, in the same advert, Quibbesoft were announcing the Super-Duper Gold Card. This is another project which has been under wraps for far too long now. It is pertinent to mention this at this point because one of the big drawbacks in the use of extended colours on the standard Aurora based system is the amount of memory they need to run at large resolutions. This is really where QPC 2 and the Q40/Q60 comes into its own. Again the Q40 was a project that was essentially linked with these colour drivers and gave Tony the final nudge to start their creation.

In order to draw the screen with a larger colour palette the system does need to have a lot more RAM under its belt. Maybe we could find some way for Quanta to support Nasta in the development of the Super Gold Card replacement. Not a bad idea for a 20th birthday year.

.... Hidden Depths....

It was while I was playing with these new additions to SMSQ/E that I noticed a couple of things that need to be brought to the attention of the QPC 2 using public. I have mentioned before that the settings for QPC2 can be configured and saved/restored by using Menuconfig. It was only when I was looking at these configurable items that I saw some of the changes – and these are changes you will not be able to get to any other way.

OK so here is a quick tutorial. First you must have a version of QPC2 that has access to the

DOS device. If you are upgrading from an earlier version that has no DOS device support you will have to run QPC2 unmodified to be able to configure it this way. Basic configuration can be done from the window that appears when you start QPC2 (If you have suppressed this don't forget you can see it by holding down the shift key when starting the program). You can set the drives, memory, printer and colours from there. I wrote a thorough article on this in the last volume of QL Today (vol 7 iss 3 in fact). Once you have QPC2 running start Menuconfig and navigate to the DOS hard drive partition where you have installed QPC2. Now the fun begins. When you have located the QPC2 folder you should click on 'SMSQE.BIN' and choose 'configure'. There are eight separate configurable items here.

0. Generic Settings – This holds many of the items you can set in the startup window such as memory etc. It also holds the setting for the Sound Device which is not configurable anywhere else.

1. Display Settings – this is the window size, display colours etc. Most of this is best set up with the startup window.

2. WIN/FLP Settings – This is the location and name of the various QXLWIN files which will become the WIN1_ to WIN8_ drives when the emulator is running. Just as easy to set this up from the startup window.

3. DOS device Settings – This is the list of locations and partitions which will become the DOS1_ to DOS8_ devices when the emulator is running. This is also just as easy to set up from the startup window.

4. SER Settings – list of the serial devices and their equivalents on the PC side.

5. PAR Settings – list of the printer or parallel ports – best set with the startup window.

6. WMAN – now we get to the interesting bit! This has only one setting which is 'Move Window Operation' and three choices 'Outline', 'Window' and 'Sprite'

SPRITE The current default setting for all QL programs is 'Sprite' and that is the one you are familiar with. When you click on the 'Move' icon a 'double-box' sprite appears and you can move the program around the screen. A second click will reposition and redraw the program's window.

OUTLINE This is a new setting and clicking on the Move Icon will draw an Outline of the program's window and move that around the screen. A second click will again reposition it and redraw it.

WINDOW This is another new setting and the method here is different. If you click on the Move Icon and hold the left mouse button down you can move the whole window around the screen.

These three WMAN options are available in all flavours of SMSQ/E v 3.01 for all platforms and are not confined to QPC2.

7. WMAN System Colours – As the name suggests this is a list of the colour settings for SMSQ/E not an easy file to edit unless you know the values of the colours you want. (More on this later)

8. HOTkey System II – This has the settings for the stuffer buffer etc. These settings

are not available anywhere else.

Once you have set up your system you can save it back with the new settings in the normal way. When you exit Menuconfig it will invite you to update the 'menuconfig_inf' file. If you do this, the next time you get an upgrade to a new version of QPC2 all you need to do is to run Menuconfig again and tell it to Update the settings from the 'menuconfig_inf' file. The new version should then be set to the same setting as the previous one.

Menuconfig does have the option to learn the current settings and save them to the 'menuconfig_inf' file so maybe that is something you should do with your current version before installing your upgrade.

... and Deeper Meanings

One of the other things that I have mentioned in this column before is the way that you cannot tell which of the DOS devices you have started from in QPC2. This has been a problem, especially when I forgot to go through the procedure I have just describe when upgrading to a new copy of QPC2 (I usually get a few beta test versions from Marcel so it gets changed a lot here). Therefore when I wanted to go to the DOS device which is a folder I set up to hold QL files downloaded or emailed to me I was sometimes not in the right folder and found it hard to work out where I was.

We discussed all of this while on the long journey to the rollercoaster park on the recent US trip and QPC2 and QPAC 2 now work together to give the directory that you started from in the top, right hand, area of QPAC 2's display. You will need

QPC2 v 3.11 and QPAC2 v 1.42 to get this feature but it is very useful so thank you Marcel. Another great improvement in the latest version of QPAC2 is the change in the way it displays the size of the drive. No longer is it displayed in sectors. The current version correctly converts the display to read Kilobytes, Megabytes or Gigabytes depending on the size of the drive involved. Much easier to understand. I wonder when we will see the first Terrabyte QXL.Win file?

More On Colours and Upgrades.

It seems that most of the column this month is taken over by the recent changes to SMSQ/E and QPC 2 but that should please Per Witte at least because he was complaining on the QL users list that very little mention was made on these great advances. I think that part of the reason for this is that there are very few people out there who had managed to get their hands on them, and this is why...

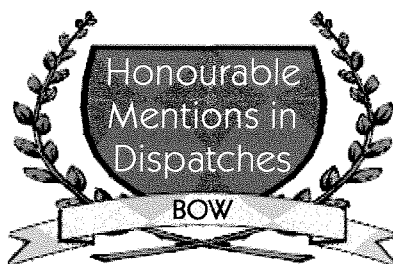
The problem was that, when the new versions of SMSQ/E were ready to hit the street it suddenly occurred to people that they had put no real work into the way that the colours could be edited or set. As I said in the section of configuration, the colour setting are all there in the configuration block but making any meaningful changes to the system is difficult and frustrating.

The colours are set up in the config block with a value beside each component. That number signifies what colour each of those components will be displayed as. the trouble here is that I cannot figure out what the palette is that the numbers use. All attempts to

change these numbers randomly seemed to end up with stipples which was not what I wanted at all. Marcel did provide a 'dirty' way to change the colours and this was to poke the values into the system with a set of small BASIC file. He sent me four different colour schemes each set up in one of these BASIC files and the colour changes take effect when each one is run. I did manage to write a small menu driven program to activate the colour schemes and, because it is written using the menu extensions the new colours are displayed in the menu itself when it is redrawn after executing the BASIC file.

The other reason that we have not, so far released the files to the public is because we have not, so far, produced a good way for the general user to edit his colour schemes. There were a lot of discussions about how to do this and, in the end, I nominated Wolfgang Uhlig to be asked to try to write a program to do this. He has gamefully accepted the challenge and I look forward to seeing the end result. His work with the colour selection tool for BASIC was very good but he does have a serious learning curve to get to grips with a different palette. I look forward to awarding the next Honourable mention to him

And talking of that.....



Finally, a brief word on the other versions of SMSQ/E available

and the distribution of the award for this issue.

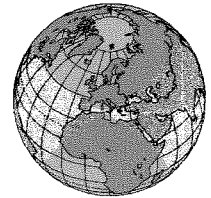
I no longer have a QXL card available here to test v3.01 on (nor do I have a PC with the requisite slot to plug it into - the ISA bus has vanished into the land of the fossils). I must also confess that I have, so far, not had time to get the MinisQL up and running but I do have Joachim's Q40 and I ran it on that.

I must give the people who made the changes to SMSQ/E for this platform full marks. The current version fixes many of the niggling little problems I had with Q40 over the pre v3 versions. DD disks now format and read properly, ProWesS runs correctly and does not lock up, and the soft reset works again. I had been stuck on version 2.97 of SMSQ/E for the Q 40 for some time because it was the last consistent version I was able to use and even that one would not format or write to DD disks with any consistency. I can say that, so far, v3.01 has proved to be very good. All of the hard words and heart rending about how SMSQ/E should be handled when Tony Tebby handed over the reins have been worthwhile if the code that gets into the hands of the public is of this quality.

It may take a little longer than it used to, to get the releases on the streets but if the result is trouble free running for the user it is worth the wait

I handed out the award to the authors of the colour drivers in the last issue but this award must go to Wolfgang Lenerz and the team of Beta testers and contributors who have made this system work. Wolfgang has upheld the standards we asked of him when he took on the task of registrar and we have all benefited from his diligence.

The QL Show Details



Isn't it amazing? Lots of shows coming up this autumn this year all around Europe!?

As I can't squeeze all the show-related information on the next page, here are some more details:

Especially for Berchtesgaden, I suggest you go back one and two volumes of QL Today, where Friedemann Oertel (the show organizer) made the effort to give very detailed ideas about what else to do while in the great area of Berchtesgaden!

More details on the Irish Show weekend

The venue: The Wicklow Web Centre, Main Street, Roundwood, Co.Wicklow, Ireland.

The "show" will take place on the Saturday 30th August 2003 - from 1pm to 4pm. However, it is never really a show as such, more a casual get together of QL users with the traders attending. so If you do intend to come, and are looking for something specific from any of the traders, do contact them directly and order it, as many of the traders coming will be travelling light - very light!! If you don't pre-order, they may not have what you need on the day. Roy Wood of Qbranch, Tony Firshman of TF Services, and Darren Branagh of Q-Celt Computing will be there. Steve Reyal will hopefully be on hand to demo the QL2002 DVD - and a full screening will take place for anyone interested, free of charge. There may even be a demo of the new QL software product, LAUNCHPAD, by Dilwyn Jones!!

Roundwood is a beautiful small village high in the Wicklow Mountains, about 35 miles south of Dublin City. It is about an hour and 15 minutes drive or so from the Dublin airport, and 40 minutes drive from the Dun Laoghaire ferry terminal (where the HSS ferry docks from Holyhead) Rosslare europort is about a 2 hour car journey. Roundwood is the highest village in Ireland, and contains several high quality pubs and restaurants - just ask anyone who was here last year!! Glendalough (the 2nd biggest tourist attraction in Ireland) is only a few miles away. There are scenic drives, championship golf courses, fun parks, and nature reserves all nearby. The "Show" venue is the Wicklow Web Centre, a business located half way up the Roundwood main Street, on the right, if approaching from the Dublin direction - it is a bright yellow painted building, and has ample car parking at the rear. Full internet and Email access is available free of charge inside on the day of the "show". Tea and Coffee facilities are also available.

Anyone with any further queries, or for directions or accomodation, should contact Darren Branagh on 00-353-404-45319 or mobile 00-353-86-8100090, or email darren.branagh@boimail.com (office hours only).

More details regarding Berchtesgaden for this year's event:

The show will take place in "Hotel Schwabenwirt" (same venue as 2001, opposite to the main station in the centre of Berchtesgaden. Last year's venue was "Tauernhof").

Address info: Hotel Schwabenwirt, Königsseer Str. 1, 83471 Berchtesgaden, GERMANY
Tel. +49-8652-2022, Fax +49-8652-1706

A room has been reserved from Friday evening until Sunday morning, so computers can be brought, built up and locked at night in this room (again, like two years ago).

Davide Santachiara, who is organising the Italian QL Show again, informed us:

This week I asked the permission for the meeting room at the usual place and, even if I will have the official OK only next month, it's fundamentally 99% confirmed.

The place is:

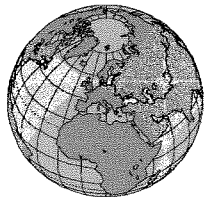
Sala Congressi Circonscrizione, 2 Via Fratelli Cervi, 70 Pieve Modolena, Reggio Emilia, ITALY

You can find the map at

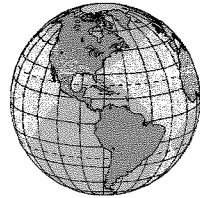
<http://www.geocities.com/dsantachiara/mappameetingeng.htm>

some roundabouts have been added instead of cross-roads but the way is the same.

I really hope to see you again next October.



The QL Show Agenda



3rd Irish QL Show Weekend - (Ireland)
Weekend, 29th of August to 31st of August
All details on reverse side!

QL Meeting - (D) Berchtesgaden
Saturday, 4th of October, 10:00 to 17:00
Hotel Schwabenwirt, Königsseer Str. 1
Same venue as in 2001!
Details on the reverse side!

QL Meeting - (NL) Eindhoven
Saturday, 11th of October, 10:00 to 16:00
Pleincollege St. Joris, Roostenlaan 296

QL Meeting - (I) Reggio Emilia
Sunday, 26th of October, 10:00 to 16:00
Sala Congressi Circoscrizione 2 – Via Fratelli Cervi 97
Same venue as the years before!
Details on the reverse side!

QL Meeting - (GB) Byfleet
Sunday, 9th of November, 10:00 to 16:00
Byfleet Village Hall
Same venue as all the years before!
Details in previous and next issue!