

**FORUM**

The magazine for members of

*The* **ARM**  
*Club*

**SHOW SPECIAL**

**SE Show**

**ARM Club Midlands Show**

**USB on RISC OS**



**Issue 52 — Winter 2005**

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# What's in a name?

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RISC OS or Risc OS? Does it matter. After all it's just a name, isn't it? This sort of dialogue usually crops up once a year on comp.sys.acorn.misc. user group after some poor devil has typed it incorrectly and the wrath of Druck and others falls upon them causing them to quake in their boots and promise never to transgress again. This generally then sets off argument on whether it matters or not, which is normally good for a few hundred posts and a few laughs. It comes round fairly frequently, just like top posting, so you would have thought most people would have got it right by now.

So which one is correct? Do you know? Answers on a post card, I'm afraid no prizes except for a mention in dispatches. A good clue is that the name of our favourite operating system is an acronym - Reduced Instruction Set Computer Operating System. OK, got the

answer now? Not to be confused with Risc OS which is a name of another operating system!

Using the correct name and definition for things is very important, just like using correct English - grammar and spelling - otherwise misunderstandings can occur. A good example was an argument on AOL (you have to be careful here, it's not what you think, in this case it stands for Archive On Line) about what the term 'optical zoom' really meant. This kept me amused over several weeks. Just as well it was on email, if the two main protagonists had actually met face to face the RISC OS community would have lost half it's members!

So please take the trouble to get it right, galactic wars have been known to have started over lesser things than this!

*All opinions expressed in Eureka are those of the authors and not necessarily those of the Club or it's committee members and officers.*

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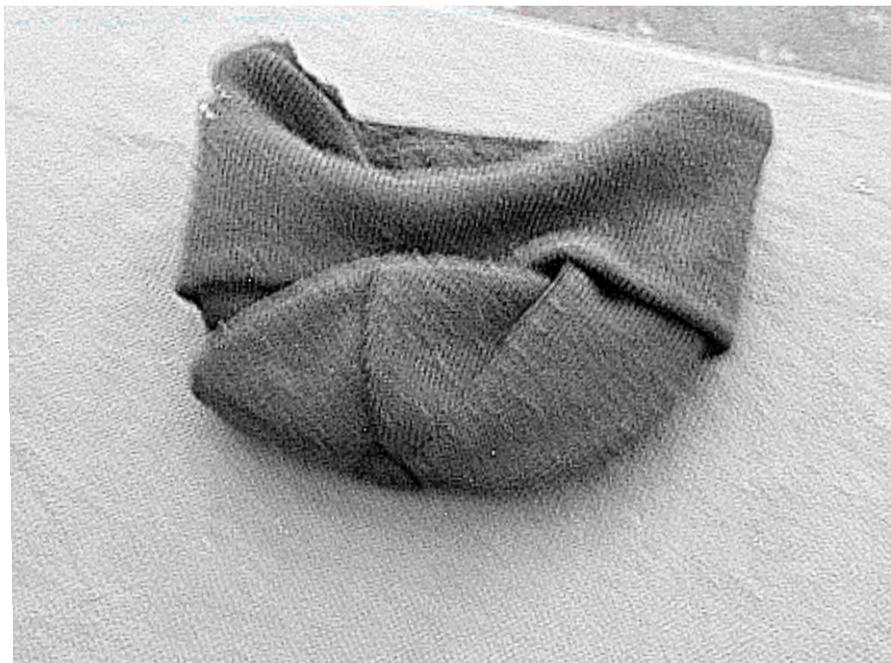
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Who you need and where to send



*The latest RISC OS fashion headgear - lost at show*

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# RISC Bytes

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## RISC OS FOR THE MiMAGIC 5

Castle has announced RISC OS support for the NeoMagic MiMagic 5 Applications Processor (SOC). The MiMagic 5 is ARM 9 based and suitable for a wide range of handheld information appliances.

Neomagic is enabling outstanding technology for a new range of handheld devices. The MiMagic Applications Processor offers one of the lowest power and smallest form-factor packages.

The addition of the MiMagic 5 to the ever growing list of processors that RISC OS supports, is a considerable benefit for the wider RISC OS community. Support for the MiMagic 5 is the result of work being done by Tematic for large OEM customers in the embedded market. Briefly, the MiMagic 5 Applications Processor provides the following: - 220 MHz 32-bit ARM V4T compliant RISC processor (ARM922T) - dual independent 32-bit DMA bus configuration -

dynamically assignable DMA controller - very low system power consumption - frequently used codes can be stored in the SRAM - multiple power down modes - multimedia enhancement hardware-assist for video streaming and decoding - digital camera interface - low system cost - supports low cost NAND Flash. - Rich set of peripherals: SD Card, SDIO, MultiMediaCard, USB, serial, audio. - Multiple Boot Options: Linear Flash, NAND Flash, UARTs, SD, MMC, or Serial EPROM - Video support up to 800 x 600. Further information is available at: <http://www.neomagic.com/product/mimagic5.asp>

For up to the minute

RISC OS news

visit

**DROBE**

***www.drobe.co.uk***

# Advantage 6 announces the A9 series computers

Building on the A75 range, the A9 series offers increased functionality and speed, at reduced power consumption, whilst retaining the diminutive dimensions of our other industrial controllers.

The A9 series features a range of ARM9 processors, with a choice of OEM options available. The A9 is the first machine to demonstrate the latest version of RISC OS (Embedded Adjust-32) from RISCOS Ltd. Embedded Adjust-32 enables custom applications to run in a RISC OS environment on ARM processors which have a 32-bit program counter (eg ARM9, ARM10). When available, the full retail Select-32 operating system will be compatible with the A9. A9 variants suitable for running Linux applications are also available.

The A9 may be supplied to OEM customers in a number of configurations for example:

A9RM - Half-width 1U rack mountable ruggedised case (1.75" x 8.5" x 10").

A9LOC - Wall/Bulkhead-mountable unit with integral 8.4" TFT touchscreen, GPS and GSM/GPRS.

Pricing is dependant on configuration, options and quantity. The A9 is available to qualified OEM customers direct from Advantage Six. Contact [thea9@advantagesix.com](mailto:thea9@advantagesix.com) for further information.

A retail version of the A9 will be available in due course and an announcement will be made when the third party distributor has them in stock.

Paul Middleton, Managing Director of RISCOS Ltd, commented that the development of a 32-bit version of RISC OS 4.39 (RISC OS Adjust) opens up many new possibilities for 32-bit only computer users to enjoy the RISC OS Select environment. Embedded versions of RISC OS 4 have exactly the same potential features as the full desktop versions but leave the choice of which features are to be included to the manufacturer, dependant on the end application and target cost.

The A9 has a dedicated website at <http://www.thea9.info>

## Agreement on RISC OS

**RISCOS Ltd and Castle Technology Ltd announce new co-operative Agreement on future RISC OS Development.**

**Castle Technology Ltd and RISCOS Ltd are delighted to announce that late on Friday 15th October they concluded negotiations on a new Licence Agreement that ensures a bright future for all areas of RISC OS development.**

**The new licence ensures that both RISC OS 4 and RISC OS 5 will be merged together, as soon as practically possible and that clear areas of responsibility have been established ensuring that duplication of effort is minimised.**

## New version of Data Power 2 released

The big change is a totally new version of the manual and documentation, now expanded to cover the scripting language in more detail, be more RISC OS specific and provide much clearer information on all aspects of DP2. Being HTML-based, the new manual is can also be useful for Windows DP2 owners. A new database drawn from the DP2 email mailing list, containing over 1000 postings and articles about DP2 is included. This is fully searchable will provide a helpful resource to users.

The installation software has now also been enhanced based on experiences with VirtualRPC. The default locations for installation should now work sensibly on all RISC OS machines.

## RISCOS Ltd renames

RISCOS Ltd. is renaming itself to 'RISC OS Developments', following the agreement with Castle.

ROL boss Paul Middleton commented that as RISC OS Ltd. is now the chief developer of desktop RISC OS the new name sums up the company more appropriately. While companies such as Advantage Six remain as sub-licencees of RISCOS Ltd., Castle will focus more on non-desktop, embedded product areas. Paul confirmed that Select for Iyonix is on-going but will be made available eventually.

## Compo 1.23b

Version 1.23b is now available from:

**[www.compo.iconbar.com/compo/update.htm](http://www.compo.iconbar.com/compo/update.htm)**

Please note that you will need a full, recent version of the program to apply the patch (1.20 or later). Changes in this version include:

Number of rendering modes increased from 15 to 48.

New features include: XFadeSoftLight, Dodge, Burn, Soft dodge, Soft burn, Reflect, Glow, Freeze, Heat, Interpol, Stamp, Red, Green, Blue, Hue, Saturation, Lightness, Hue & Saturation, Hue & Lightness, Saturation & Lightness, SatDark & LightLight, SatLight & DarkDark, Lightness of Saturation, Saturation of Lightness, Lightness by Saturation, Saturation by Lightness, Crystal, Crystal2, Crystal3...

Rough examples of a few of these may be viewed at: **[www.pbase.com/mapleglen/computergraphics](http://www.pbase.com/mapleglen/computergraphics)**

In addition to the above Compo has three new image effects, Hue shift, Saturation shift and Lightness shift.

There are also a number of minor bugfixes and enhancements.

## Sepulate announced

Sepulate is an application that allows CMYK Sprites and TIFFs to be created from any app that can print colour separations, such as Impression Publisher, Ovation Pro, Artworks.

Separations are combined together to form a CMYK image – with the interface allowing control over which sep is used for which channel. You can also automate some of the creation process by setting the output of !Printers to print directly to Sepulate.

As well as CMYK images it can also produce multi-channel TIFFs so that extra Spot colour channels can be included. Spot colour channels can be set with the name and the colour of the ink which is included in the TIFF using extended tags as used by Photoshop. This allows the TIFF to be given to a commercial print shop and a full colour composite print to be made from Photoshop for proofing purposes, but still retaining all process and spot colours in their respective channels that will be used to create the individual colour plates.

It will be a commercial application with the release price set at £20. There is some information about it at **<http://www.dc-soft.co.uk/sepulate/>**

# ***SIMON shown at Guildford Show***

*A demo of fast drawfile rendering was shown by Paul Middleton of ROL at the Guildford show using software from SIMON.*

*SIMON is a third party development team, working closely with Advantage Six and RISC OS Ltd to enhance the Adjust-32 experience.*

*The software demonstrated that, on average, a RISC PC utilising SIMON's developments can render drawfiles significantly faster than any other RISC OS machine currently available on the market, including Iyonix. Benchmarks will be released at a future point in time to demonstrate this. As an approximation, a machine utilising SIMON for drawfile acceleration can plot drawfiles at up to 30 times the speed of a StrongARM RISC PC equipped with a ViewFinder. Similar speed improvements are found elsewhere across the desktop.*

## **Sourcery (0.50)**

Sourcery is a development tool from The Really Small Software Company that manages all of the source code and resources that make up a project. Use whatever tools you want to build the project, Sourcery tries to make life easier without restricting what you want to use to build your software.

Assorted fixes including: Generated makefiles improved - Output window scrolls to end of output automatically - Start up progress bar displayed - All project types can now have resources if required - Fixed display problem with filer style windows - Tool sequence menus tidied - Fixed problem editing source code

**<http://www.really.demon.co.uk>**

## **GRAPEVINE 2.01**

Version 2.01 of Grapevine instant messaging and communication/conversation software (for MSN, ICQ and IRC) is now available. The latest version represents R-Comp's continuing support for this important RISC OS internet application, which benefits from near full-time development.

GV2.01 includes a number of new features including two-way font mapping between RISC OS and Windows font names, and the ability to change where GV takes you for mail checking etc. (useful for non-hotmail users).

## MusicMan CD audio/MP3 software

Version 1.40 from R-Comp is a major update of the software, allowing users to create compressed audio (eg. MP3 or OGG music files) from sources other than CD. This has been driven by the arrival of the !AudioIn application on the Iyonix, but is relevant to any method of capturing audio out your computer. Additionally, MusicMan allows you to save raw CD tracks to disc, which can then be edited and dropped back in for conversion.

The software intelligently calculates track name, album, and artist information, and allows you to queue up long lists of tracks to be converted in one batch - allowing you to set the software going, and leave it run. Although it is expected most users will make use of the automatic calculation of album/artist information, you can also enter it for each track, before the batch begins.

Although this may sound a little complex, it has been implemented into MusicMan in the same easy-to-use approach that typifies the whole product - it feels easy and natural.

## GEMINUS

Shown for the first time at the Guildford Show **Geminus** is software that enables Iyonix computers to utilise multiple monitors on the same desktop. The application is aimed primarily at desktop publishing users who generally need as much screen area as possible though more frivolous uses enable one to watch a DVD or TV on one monitor while working in the other. **Geminus** allows screens to be arranged horizontally or vertically and rotated. Up to eight screens can be supported. Iyonix users should soon be able to benefit from graphics cards having digital DVI outputs plus hardware acceleration of desktop graphics operations.

*(See the SE Show report for further information. Ed.)*

# Thumbcat V3.9

Thumbcat is an image catalogue application. It will handle a variety of formats without additional applications. “Native” formats currently handled are : Sprites, Drawfiles, JPEG’s, EXIF’s and Digital Camera AVI’s (if they have an embedded thumbnail). In addition it recognises ImageFS and ChangeFSI (if running/booted) and all formats handled by those applications.

It will handle files and directories dragged to the iconbar for immediate views. These can be printed or converted to other filetypes i.e. batch processing.

It also includes an editable image details database based on the EXIF tag standard.

Catalogues can be pre-built from a directory full of images or appended to, by dragging from a filer window. Images can also be dragged from a Digiflash window and image related applications.

It will create an HTML version of a catalogue.

The major change is the ability to print images. Up to 8 images per page can be printed in either a standard size (e.g. 5 X 7inch) with clipping or a best fit of the full original image.

NB printing also works with immediate views. This means that you can use Thumbcat for printing images without having to build a catalogue.

### **Improvements since v3.7 are:**

- Images can now be printed with options to allow standard size and/or multiple images per page.
  - Improved interpretation of EXIF date tags.
  - Help added to the iconbar menu
  - Castles recommended help extension implemented. Dragging to an application changed slightly so that by default no external link is created. Pressing Alt-drag creates a link. Various bug fixes. Read-Only sources can be catalogued.
- <http://web.ukonline.co.uk/mripley>**

## ***Schema2 for Iyonix***

Schema2, a spreadsheet related to Acorn’s Advance package, is now 32bit compatible and available from APDL.

Described as “the long established and acclaimed comprehensive RISC OS spreadsheet”, Schema2 these days is available on CD with a printed manual and macro guide.

# REPTON *PLUS*

Alligator have announced the release of the game Desktop Repton PLUS; for all RISC OS computers running RISC OS 3.5 or above. Specific details of additions in this release are the inclusion of the new hi-resolution PC graphics; plus all of the levels from the new PC release of Repton 1 and; depending upon uptake; a possibility of further upgrades. Price remains £19.95; with upgrades at £6.00 - both cases plus £1.00 postage. There are some special extras along the way which will only be made available to purchasers of Desktop Repton PLUS - so get your order in early to see what new goodies will be made available!

## **NEW EMAIL TRANSFER SOFTWARE - HERMES**

R-Comp have announced the release of DialUp 3 and NetFetch 2. The two upgrades are being announced together, because the products are developed in parallel - DialUp for modem users, NetFetch for broadband/network/VRPC users.

Among a number of smaller enhancements, the big new feature is the presence of Hermes, the new email transfer software. Hermes has been designed to support the latest security and technological requirements of email (eg. all the different flavours of authorised SMTP, secure POP mail fetches and more). Many internet providers (eg. BT internet) are now requiring the use of such features, and it is imperative that RISC OS continues to excel in the email field.

Multiple mailboxes can now be fetched in parallel, meaning that there's no need to wait for empty mailboxes to finish checking before your other mail comes down. Similarly emails can be downloaded at the same time as messages are being sent. This makes email far more efficient, and reduces time spent waiting. Messages can now be left on the server, skipping over the ones you have already fetched. This means that you can easily download emails onto your home machine, without making them unavailable elsewhere.

Hermes is cosmetically appealing too, of course, featuring percentage completed bars, and dynamically sized windows to make efficient use of screen space. If you are fetching a number of mailboxes you can give

each a sensible name, for speedier identification. Each mailbox can be enabled/disabled as needed, and you can view logs of each.

Hermes integrates transparently into NetFetch2 and DialUp3, but can also be used standalone if required - it will detect how you are using it, and behave accordingly. Existing setups will be imported into Hermes allowing simple, hassle-free migration.

Of course, this is only the beginning - Hermes has been designed with future expansion in mind...

DialUp3 and NetFetch2 are designed to be 26/32 bit compatible, so users can purchase a single update to cover whatever RISC OS machine they may purchase in future.

**<http://www.rcomp.co.uk/>**

## Updated !Graphite available

Graphite is an editor for flowchart-like diagrams.

More technically explained: Graphite is an application for creating and editing of graphs. The term graph means here a set of nodes and edges, whereby each edge is connected to two nodes. This definition might be not very clear for someone, who is not familiar with the term graph. So here is second definition: Graphically (no pun intended) a graph consists of some boxes with text in it (the nodes) and some arrows (the edges), that go from one box to another. This gives a widely used type of diagram, that you normally would produce with an application like Draw or Artworks. Indeed Graphite is in some way similar to Draw. But while in Draw you operate on plain graphical objects, in Graphite you operate on nodes and edges. This is a different level of abstraction and it has the consequence, that you don't have to care about certain things, you would need to do manually in Draw: – If you move a node around, the connected edges follow the box automatically. – If you create a new edge, it is guided automatically around existing nodes (so it doesn't cross any node). – If you move a node to a position, that is already occupied by an edge, the edge moves away automatically. – If you want to change some edge-effects (width, colour or something like that) for the whole document you can do this easily, because Graphite knows the difference between a line that forms the edge and a line that forms the border of a node. In Draw both would be simply a line, so you would need to select the edges manually. – Likewise you can change some node-effects without affecting the edges.

**<http://www.zpages.de/>**

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# SE Show at Guildford

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It was a dull wet day as we (my wife Sheila was with me to take some photographs of the Show) set off in the early morning to get to the SE Show in time for the opening. Luckily the traffic on the M25 wasn't too bad and we arrived in

entrance ready to be let in, no doubt to be the first to snap up any bargains to be had. By the time we had managed to get into the hall the show was looking very busy. Before you reached the main hall, where all the stands were, you had

## *The Editor describes a day out at the SE Show*

Guildford with a few minutes to spare. A queue had formed at the

to go through the theatre presentation area where all the



*The main hall*

talks were being held. Unfortunately it also had to act as the refreshment area which meant that during the talks the area was quite noisy which sometimes made hearing the speakers difficult. I hope in future years a better arrangement could be found.

Having reached the main hall it was nice to see it fairly full of people. In fact the main hall stayed busy all day which was very encouraging. My first port of call was the ARM Club stand to say hello to my fellow committee

members who were manning it. Having done that I set off to explore the hall further. Almost the first stand I came across had some new software on display. This was Neil Spellings who looks after the Aemulator software that enables older software which is not 32 bit compliant to run on the Iyonix and is currently developing Cino the RISC OS DVD playing software. Cino is still being worked on with the sound now improved and an increased frame rate but is not quite stable enough for release yet. However what really interested me

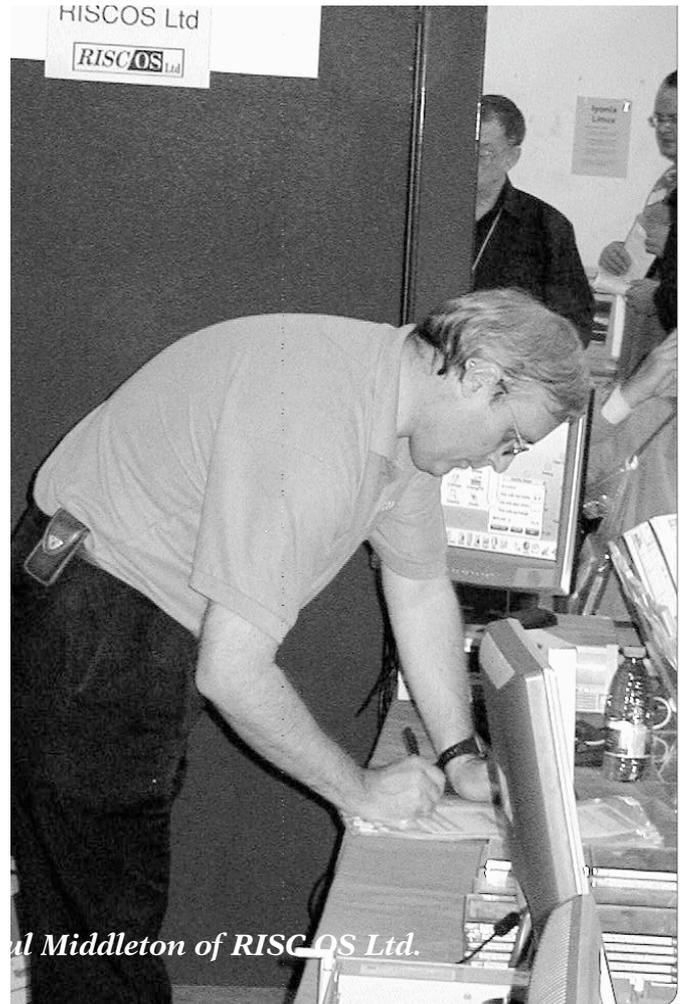


*Geminus showing rotated screens*

was a new piece of software called Geminus. This provides screen modes which span multiple graphics cards, allowing the desktop to be used across two or more screens.

The software can support up to 8 screens and screens can be arranged in any configuration (left to right horizontally, right to left horizontally, vertically etc. (See photograph opposite) Each screen image can be rotated 90 degrees clockwise or anti-clockwise, allowing rotatable LCD panels to be used in portrait mode. The API allows applications to create their own display surfaces (the desktop is just one display surface) and can thus claim screens for their own, exclusive use, either drawing to them directly or via the OS VDU drivers.

For example, Cino will be able to take over the second screen for DVD playback, whilst the desktop is displayed in the first screen. Geminus also makes full use of the hardware acceleration already available in RISC OS 5 on all screens, plus a hardware DMA channel to improve scrolling and copying between screens.



A graphical Configuration plug-in allows you to define your own large screen modes, specifying the screen positions and, optionally, rotations for each mode.

After spending some considerable time admiring the screen displays it was time for the first talk - Castle on 'How to build your own Iyonix'. Jack Lillingston and helpers demonstrated how to assemble an Iyonix from a kit which they (Castle) would supply. The kit cost



*The build in progress*

about £700. (Unfortunately the offer was for a limited period only). So that the whole of the audience could see what was happening the Iyonix had a transparent case and the process was filmed using a video camera so that we could

watch it on screen (see above). It took about 10 minutes to put together though in Blue Peter fashion some bits had been assembled earlier. It was emphasised that although Castle would give some support only

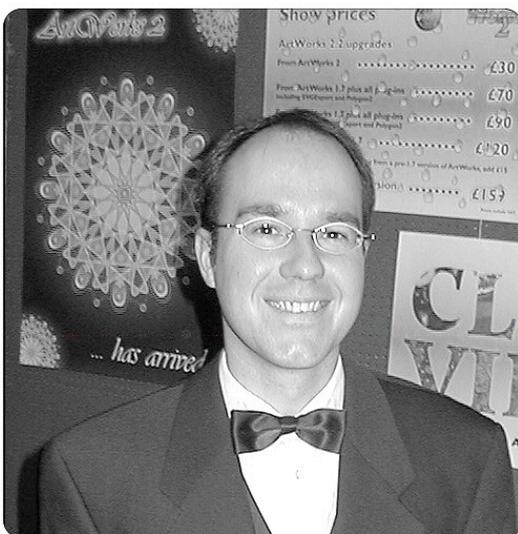


*Can RISC OS Ltd. see into the future?*

people experienced in building computers should buy the kits. If an inexperienced person bought one and got into problems Castle would have to charge for technical support.

When the Iyonix was assembled it was switched on, we all held our breath. No worries - it booted up first time straight into the RISC OS desktop.

Back in the hall I started to look around the other stalls while Sheilia went around taking photos. (still using old technology - non digital - I'm afraid, but as she's doing a black and white photography course at college at the moment perhaps she can be forgiven).



*Martin Wuerthner of Artworks*

ROL was there as usual this time displaying a crystal ball display being run from a Risc PC. Perhaps they were using it to see into the

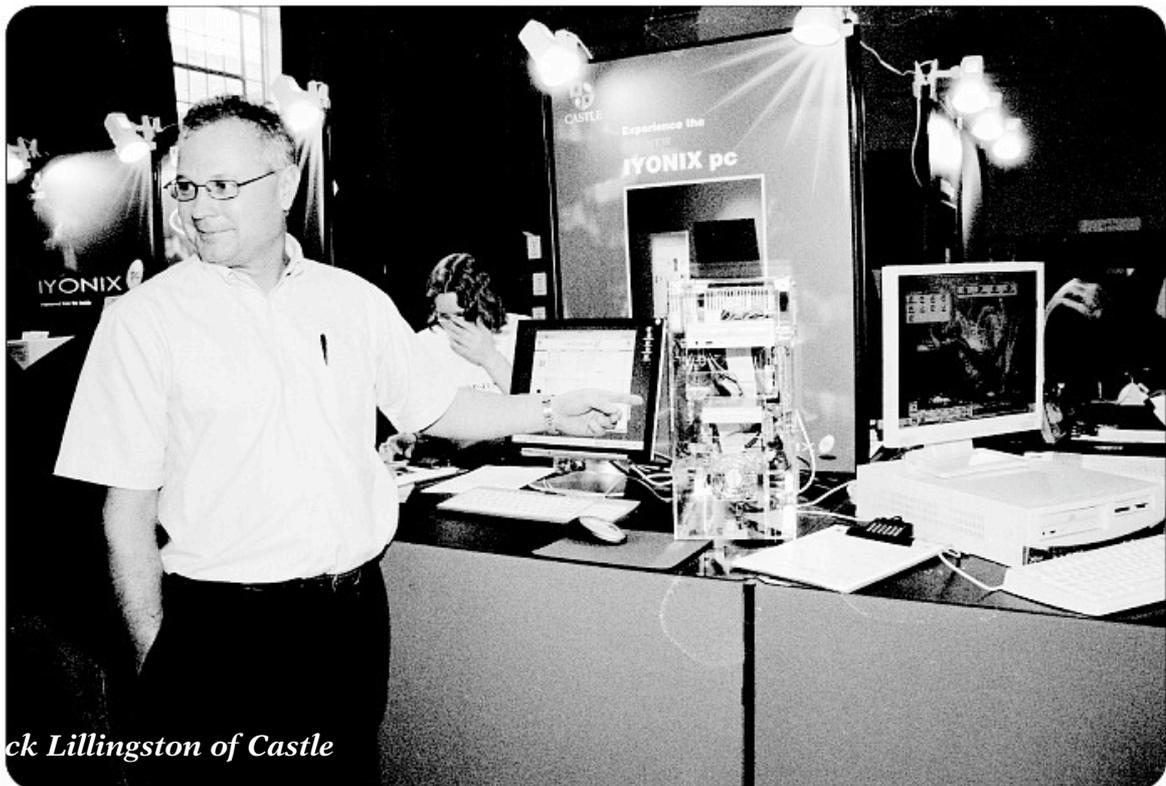


*Paul Beverley editor of Archive magazine*

future. Paul Middleton was smiling so perhaps the futures rosy.

CJE micros was doing brisk business along with R-Comp showing a new piece of software called Hermes - a new mail fetcher.

It was soon time for the next talk, Peter Naulls on the Unix Porting Project. Peter started with explaining what the project was all about, saying that the Unix Porting



*Nick Lillingston of Castle*

project is a way for RISC OS users to actively contribute to RISC OS software development by having a say in what software they would like to see ported over from Unix, while enjoying support, active development and automated upgrades.

The basic idea was that you pay an all inclusive subscription fee, and with that you get support for all the programs available from the project. You also get to make suggestions and comments on what programs you would like to see converted (or ported) to RISC OS. This project is not specifically aimed at programmers, nor

advanced RISC OS users, but rather anyone who would like to see new software.

Some of the software that has been developed or will be developed.

DosBox A pc emulator for mainly games. Runs DOS in a window under RISC OS

Soundtracker - editor and player for Soundtracker files

Dillo web browser

Firefox web browser for the future.

Some games have been ported for



*Finnybank Games*

example - Heroes. Games are generally easy to port.

The soundtracker program was a requested program.

A simple drawing program was demonstrated to prove the concept. This was interesting as the program demonstrated non RISC OS behaviour eg. drop down menus used. This is because the programs can generally easily be compiled under Linux to a working state but programming in the RISC OS features takes much more work.

All the programs are GPL licensed. At the moment there are about

three people working on the project. People can contribute money Unix Porting Project. There is a CD of ported programs available (see the info box at the end of the article).

Exploring more of the hall after Peter's talk I did a quick tour of APDL's stand, Virtual Acorn - who were showing a version that runs on Linux (not ready yet), Martin Wuerthner on Artworks demonstrating version 2.3 and Castles stand with transparent Iyonix before staggering back into the lecture theatre to hear John Cartmell's talk on the RISC OS magazine Qercus.

This new magazine combines what was Acorn Publisher and Acorn

encourage people to start programming and using the command line.

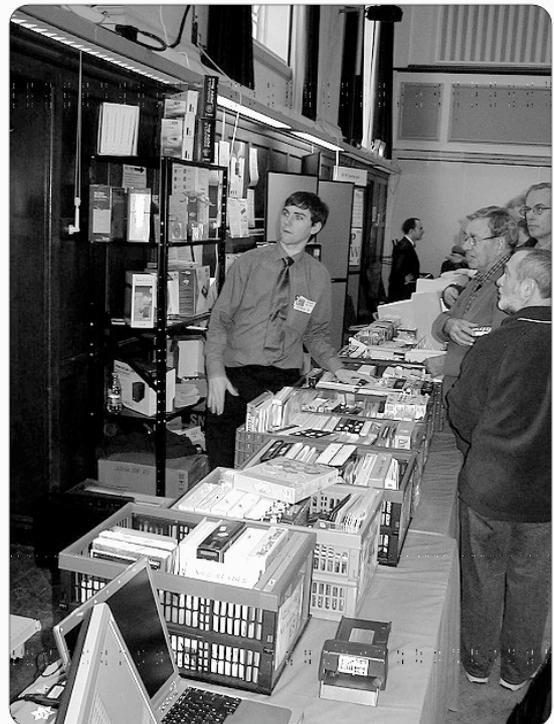


*R-comp's stand*

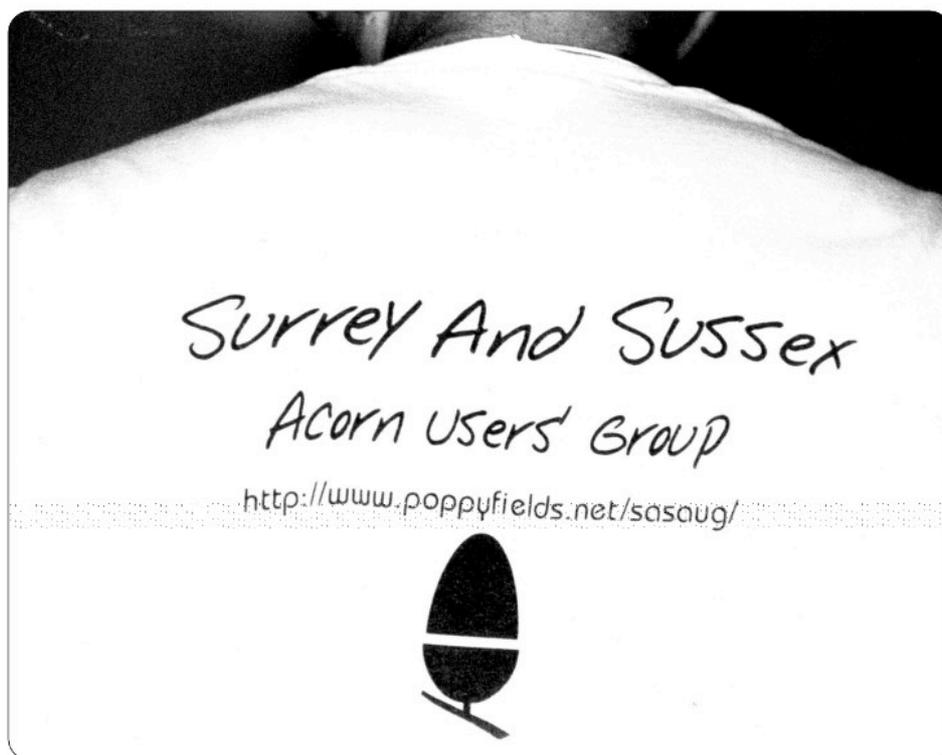
Back in the hall Icon Technology had run out of Easy Writer upgrades and were having to print them off on the spot. Fortran friends were showing off their bell ringing program. Serious Statistical Software their new 32 bit software and Oregano demonstrating their web browser.

User. It aims to cover all products in RISC OS software and hardware with numerous tutorials, and reviews and to report in general on events and news in the RISC OS world. There are 12 issues a year plus one bonus issue and all the adverts are relevant to the RISC OS world.

John talked about previous articles and about what's coming up Pluto, web design digital cameras and a new series on how to produce a childrens' opera using the Sibelius7 music scoring program. He also plans to reintroduce the yellow pages type in programs to



*CJE Micros stand*



*Spotted at show*

I returned to the lecture theatre for the final talk of the day, Paul Middleton of RISC OS Ltd on the Select Scheme and Select 32.

Paul first demonstrated the rendering of a large drawfile (Apple), firstly using Draw and then using a mystery piece of software/hardware? which redrew the file about 5 times faster. He wouldn't say how this was achieved. He then went on to tell us about the different versions of Select and Adjust (the ROM version). Future development included making Artworks a core supported feature using the

Artworks renderer to draw icons etc. using vector graphics. Also they are working on indexing for file searching and improving the desktop look with translucent buttons and windows. He concluded that the future of RISC OS lay with trying to keep up with other platforms in some areas of software development but not with PC processors.

Paul was then joined by Jack Lillingston for a question and answer session in which Paul confirmed that there would be a version of Select for the Iyonix. Jack welcomed the arrival of the A9

computer from Advantage Six Ltd. saying that it would widen the choice of machines that people could buy. After all the arguments between them in recent months they had now clarified that RISC OS Ltd. would look after the desktop market while Castle would be more involved in the embedded market. Both hoped that the two branches of RISC S would be merged in about twelve months time. There would be no 32 bit OS for RISC PCs. Support would only last for Risc PCs for perhaps only

18 months to two years.

Returning to the hall for one last time I completed my purchasing and Sheila her pictures. The hall was busy right up to going home time. It was pouring down as we left Guildford but we would soon be home to unwrap the goodies we had bought.

***Photos by  
Sheilia and Andrew Wyver***



*The ARM Club stand with helpers (spot Druck)*

# The Unix Porting Project

is a way for you to actively contribute to RISC OS by having a say in what software you want to see, while enjoying support, active development and automated upgrades.

The basic idea is this: you pay an all inclusive subscription fee, and with that you get support for all the programs available from this project. You also get to make suggestions and comments on what programs you would like to see converted (or ported) to RISC OS. This project is not specifically aimed at programmers, nor advanced RISC OS users, but rather anyone who would like to see new software.

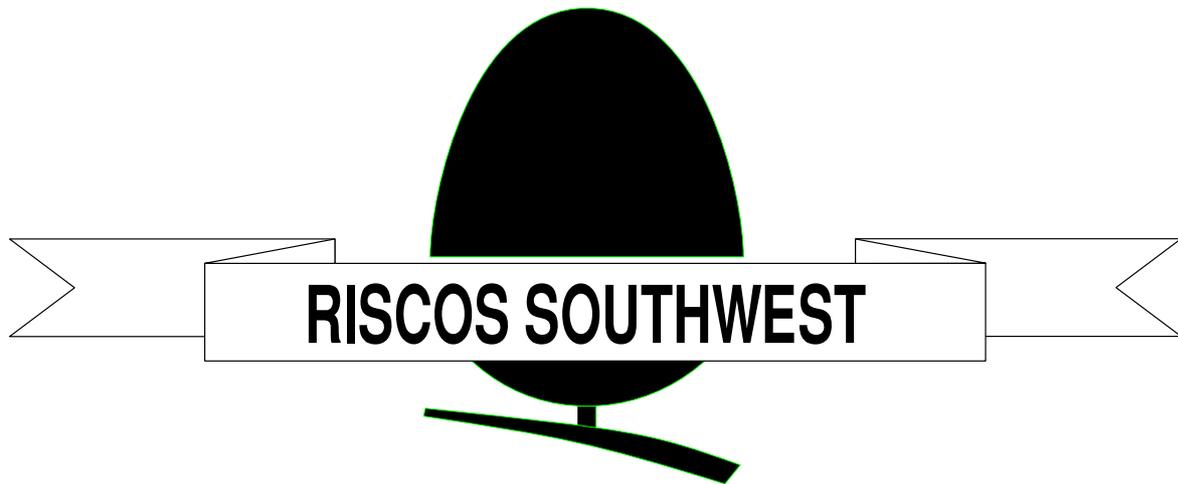
CD-ROM of current UPP software	UKP/1 5.50 EUR
Regular subscription for 6 months	25 UKP/39 EUR
Regular subscription for 12 months	50 UKP/78 EUR
Regular subscription plus browser, support for 6 months (includes CD)	50 UKP/78 EUR

Include mailing address if ordering a CD-ROM.

All software is 32-bit compatible, and supports RISC OS 3.5 to 5.

Credit card payments can be made through PayPal.  
See website for more details. [www.chocky.org/unix/](http://www.chocky.org/unix/)

Make cheques payable to "Peter Naulls" and send to:  
Unix Ports,  
45 Water Street,  
Cambridge,  
CB4 1NZ.



*Supporting users in SW England & Wales*

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**SATURDAY 26th February 2005**

**The Webbington Hotel  
Loxton, Nr Axbridge  
N Somerset**

**Doors open from 10am until 4.30pm**

**Adults £3.50 / ARM Club or Foundation £2.50  
Children under 16 FREE (accompanied by an adult)  
[Pay on door]**

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# The Perils of Computer Printing

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Some of you might have noticed some small typesetting problems with the last copy of *Eureka*. This highlights the hazards that are still inherent when the printing method of the magazine is changed. In the past *Eureka* has been printed by

magazine printed from this. The advantage of this is that if the hard copy is correct then the printed copies are going to be correct. The disadvantage of it is that it is expensive.

## *The Editor describes his trials and tribulations in getting issue 51 of Eureka printed*

producing hard copy, the printer transferring this to film and the

Having taken over the editorship of *Eureka* one of my first decisions



*The editorial set up  
(the PC is mercifully out of sight)*

was to go completely digital to produce the magazine. This has the advantage of making the magazine much cheaper to produce but introduces other perils for the unsuspecting Editor to watch out for.

For the last six years or so I have edited another small society magazine very similar to ***Eureka***. This magazine is produced using Impression Publisher. It is originated in A4 pamphlet form. The file is then sent along with hard copy (the hard copy is printed out using a Kyocera A3 postscript printer so that if all is well on this machine all should be well at the printers!) showing what the magazine should look like, to a firm that specialises in dealing with RISC OS files. They reduce it to A5 and convert it to PDF (Portable Document Format - an industry standard file that most printers nowadays accept) and proof check it again just to make sure that it is the same as the hard copy I have sent them. Fonts can be the main problem as I have to make sure that all the fonts used in the magazine are sent with the Impression Publisher file. When the PDF is produced these fonts are embedded in the file so that the printers do not have to worry about having the correct fonts on the printing machine.

In the past this has worked well but

this time round was somewhat disastrous!

***Eureka*** is produced using Ovation Pro, so the first thing I had to do was to familiarise myself with the program as I have never used it before. Luckily it is not too dissimilar to Impression Publisher so that after a few hours of practice using it I felt confident enough to start producing the next issue of ***Eureka*** No. 51. After not too much hair tearing out and several proof reads I sent the file off to be printed.

Now as I mentioned before I also produce another magazine called ***wood-notes*** (a magazine for teachers of woodwind instruments). The next edition of this was ready so I sent this along as well as the ***Eureka*** file with the usual instructions on how many copies were to be printed and where they were to be sent to. ***wood-notes*** is sent to me and ***Eureka*** is sent to a member of the ARM club near Birmingham.

After about 10 days two boxes of magazines turn up on the doorstep. The delivery note says 200 copies of ***wood-notes***. I open the first box. The familiar ***Eureka*** logo leaps out at me. Oh no! they've sent me the wrong lot! It goes rapidly down hill

from here. I open up Eureka to look at it. Every thing looks OK. The photographs have reproduced well. (always a worry as what you see on screen is not always what you get out of the printer.) Oh No! what's this? The wrong font has been used in the ARM Club's CD advert. The original main font has been replaced by a fixed spaced font similar to Corpus. This has caused the text to flow outside the frame boundaries and make a mess of the layout. Luckily it is still understandable. Further close inspection reveals several more font replacements but nothing disastrous. Theoretically this is impossible as all the fonts have been embedded in the original PDF. I decide to check the number of magazines printed. Next disaster - 40 short!

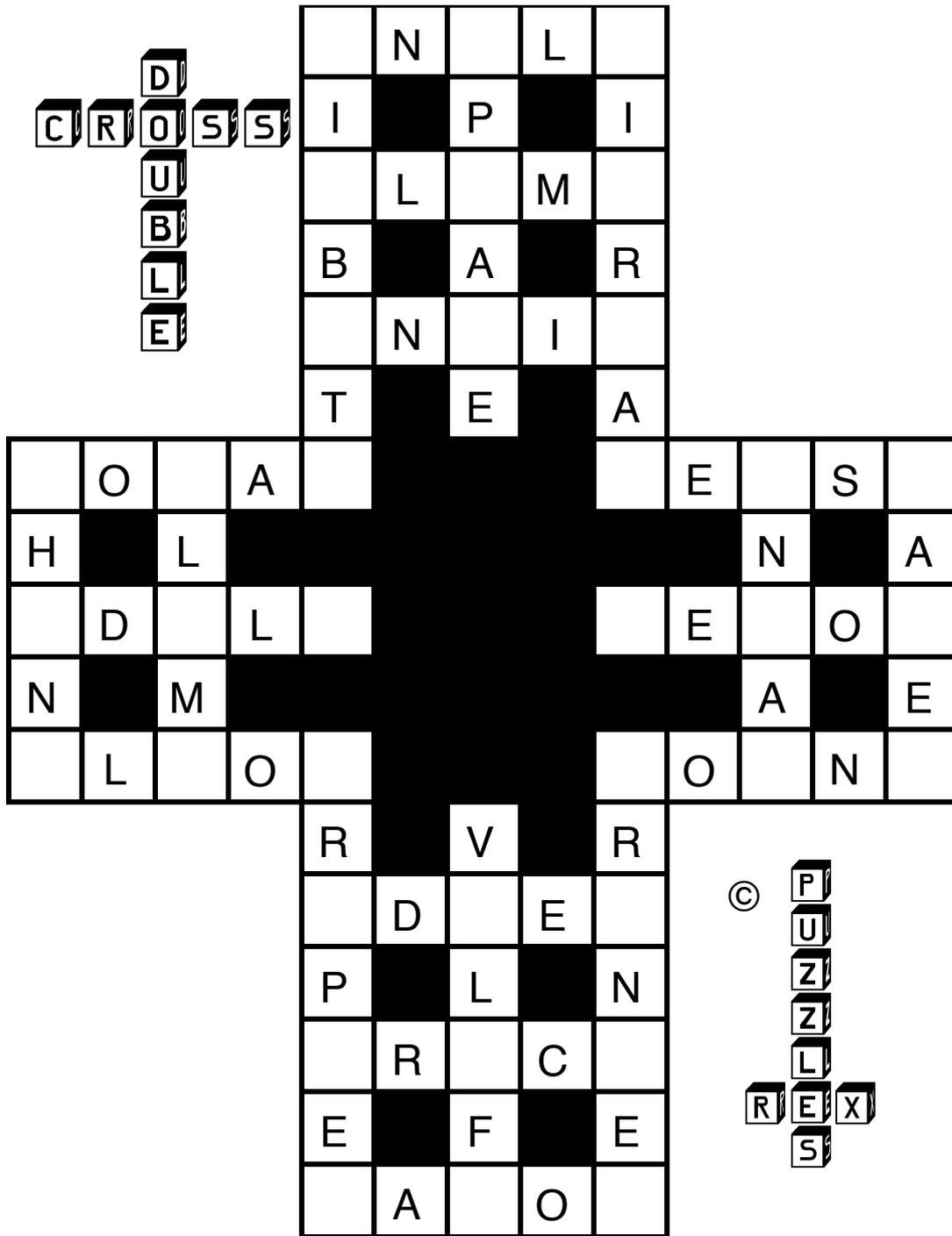
I ring up my RISC OS firm. Explain the problem. He looks at the proof the printing company has sent him. Perfect! How can the printers have managed it? The file they print the magazines from should be exactly the same as the final proof! After a short discussion we agree not to bin this run and to get another run of 40 printed, hopefully with the problems sorted out. (The beauty of digital printing is that it is just as easy to produce one copy as 1000 so small runs can easily be done.)

A further phone call confirms that **wood-notes** has ended up in the Midlands. By a coincidence I have to be in the area that week-end so I can do a swop.

Two days later the Acorn firm ring again. More disaster!. The proof of **wood-notes** has just arrived having been sent to the wrong address. (How the printers managed this is another mystery as the **Eureka** proof got sent to the correct one.) The cover is the wrong stock and has been stapled on back to front - the whole print run will have to be binned!

At the weekend I swap over the magazines and find that I have 200 misprinted copies of **wood-notes** which shortly afterwards end up down the tip.

A week later the printers have reprinted **wood-notes** and the second batch of **Eureka** correctly and sent them to the correct addresses. One of you may be lucky and have a perfectly printed copy of **Eureka** - look after this, it has rarity value!



CROSS  
D  
SUB  
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© PUZZLES  
L  
REXS  
S

Place the 36 letters shown below into the grid to make valid words

A	I	N	T
A	I	N	T
B	I	O	U
B	K	P	U
D	K	P	U
D	L	P	W
E	L	R	W
E	M	S	Y
I	M	T	Z

Solution on page 59

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# The ARM Club Midlands Show

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Aaron was keeping very tight lipped about the next new features in Virtual Acorn. Not one

same on the Risc OS Ltd. stand though he did give me a good demo of the latest version of

***Lewis Andrews reports on the ARM Club's show  
and throws in a few photographs  
for good measure***

morsel would pass his lips except to say that they were doing very well thank you.

Select which looked very pretty with it's translucent blue scroll bars and menus.

Paul Middleton was much the

On the Castle stand a



*A view from the ARM Club stand - rather quiet but the new ceiling looks good*

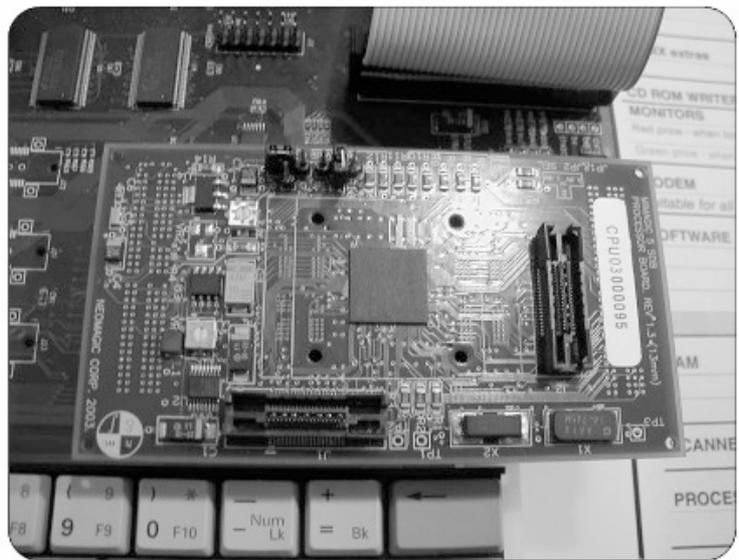
demonstration board with a MiMagic chip running RISC OS on it was shown linked up to a

small touch screen. Jack Lillingston was just as informative as every one else so far by refusing to reveal any details as to what and who this development was for. I wandered around the room looking eagerly for someone who would be who might be willing to part with some tit-bits of information.



*The MiMagic development board*

*The MiMagic chip*



*The small touch screen showing RISC OS*



were ready for Christmas and had their tree on display as well as a plethora of cardboard crystal shapes some being used as mobiles (not the phone sort). Also sporting an arty display was The Mathematical Software Company who had by far the most

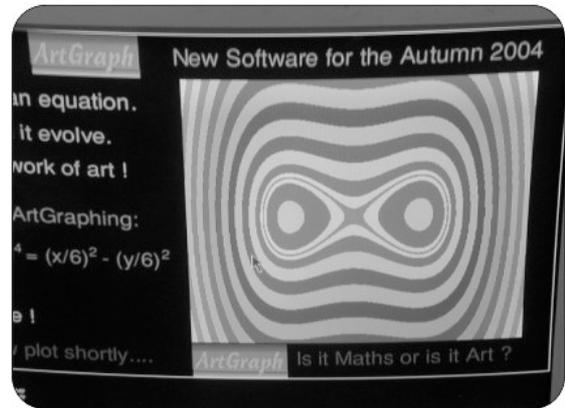


*Christmas has arrived*



*Fortrans Friends' mobiles*

colourful stand. You have to imagine the colours in the photographs. Two programs were being demonstrated, Turtle Chalk a



*ArtGraph screen shot*

Turtle Graphics program with graph plotter, palindromic sums, mathematics tuition and programming all for £15 and ArtGraph a program that plots algebraic curves as modern art for £25 or both for £30.

Next stop the RISC OS Packaging Project stand.

The RISC OS Packaging Project([www.riscpkg.org](http://www.riscpkg.org)) is a package manager for RISC OS. Its three main functions are:

- to download and install new software packages on request;
- to update installed software packages when new versions are released; and



*The most colourful stand in the show - just use your imagination.*

- to remove software packages when they are no longer needed.

It can also handle dependencies: if one package requires another in order to run, then a request to install the first will automatically install the second.

Software has to be distributed using a specific package format for this to be possible. The RISC OS Packaging Project is an attempt to assemble a collection of non-commercial software

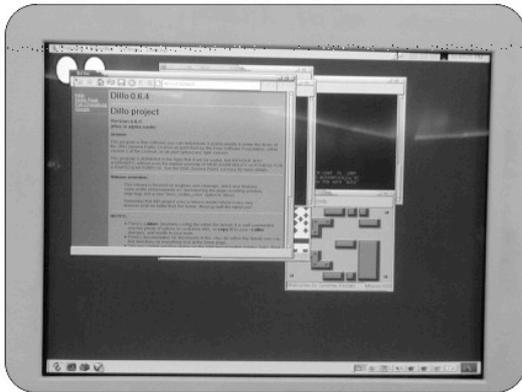
packages for use with RiscPkg.

The package manager is in a primitive but working state and a small number of packages have been created.

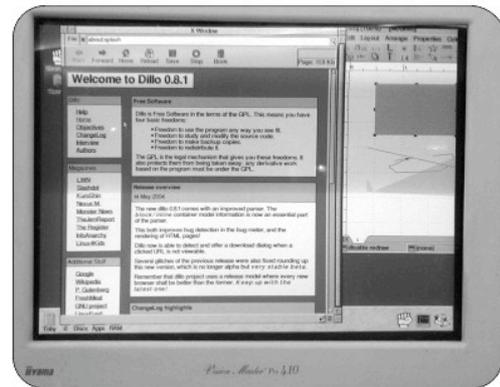
Future work: user interface enhancements for managing large number of packages; managing conflicts between command names, filetype bindings and other settings; building a large package collection.

Also on show was a new version of the RISC OS Toolkit. This is a free C++ class library for writing desktop application programs. My next port of call was the Unix Porting Project where I was given a demo of a Linux browser called Dillo running under RISC OS. See if you can spot which is which in the screen shots below.

allowing them to release more stable software to end users. DeskDebug includes features such as single step through ARM instructions, source code and WIMP redraw and message handlers, ARM and FPU register display, breakpoints, context, stack and variable display for C procedures and error trapping.



*Dillo RISC OS?*



*Dillo Linux?*

Serious Statistical Software were at the show as usual and I had a good ten minute talk on the uses of the software packages that were available.

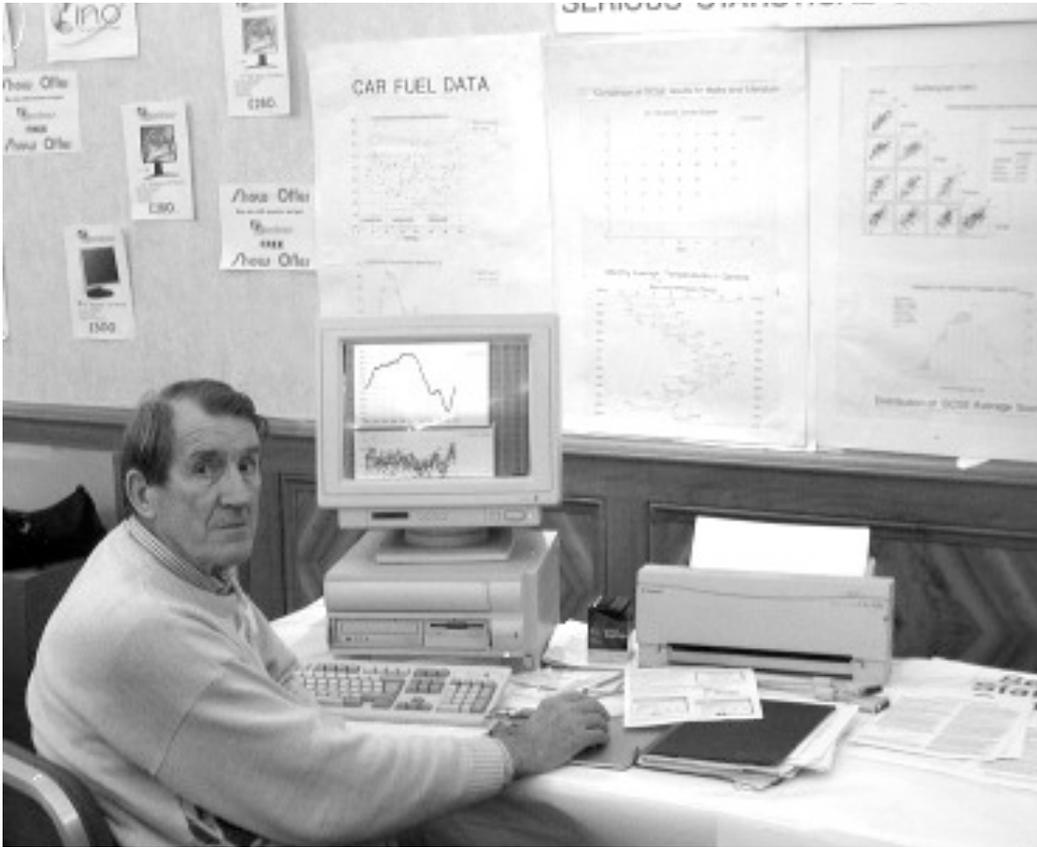
Neil Spellings demonstrated Cino and Geminus as they had at the Guildford show but also had for a new program called Desk DeBug.

DeskDebug enables programmers to hunt down bugs and crashes in their software more easily,

The program will be available sometime in the first quarter of 2005 for £50 + VAT.

Generally it was a rather quiet day but the dealer stands - Castle, APDL, CJE's, ITC and R-comp all seemed to be doing good business and the ARM Club charity stall managed to raise about £200 mainly on software, spare parts and manuals.

Will there be another Midlands Show? - maybe!



*Serious Statistical Software looking serious*

## **Articles required for Eureka**

Remember that everyone who contributes an article to the magazine will have their membership extended, free of charge, for every issue in which their work appears.

If you feel like writing an article or even a series then get in touch with the editor at:

***[music@wyvers.freeseve.co.uk](mailto:music@wyvers.freeseve.co.uk)***

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# ARM Arena

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The time elapsed since the last column has seen a large set of RISC OS games-related software released. Much of this software and other developments is of

simulation but advanced RISC OS games have had fantasy or cartoon elements. The RCI game Abuse springs to mind with its detailed graphics and animation

## **Andrew Weston looks at games developments especially for retro – gamers on the RISC OS scene**

interest to retro-gamers which makes one wonder whether older platforms are being used or emulated for games as a result of modern releases becoming just too close to the real-world and too formulaic. Many of the older platform games were not even aiming for reality because this was plainly not achievable and those that did aim to have elements of realism were sufficiently detached from the real-world to allow more involving yet still escapist fun.

Perhaps these releases represented a more natural form of computer games and some of the most enjoyable non-

but remains in 2D giving a sense of distinction between the gaming world and reality much like the highly popular platform-game format did on the BBC Micro.

Therefore it's arguably welcome to see such a revival in the retro-gaming field particularly as RISC OS is quite well catered for here as this column's news should show. First off though is the RISC OS-specific news...

### **More UPP conversions and updates**

The latest major game to come out of the Unix Porting Project is a first-person 3D 'shooter' called

Aleph1. The game download itself is around 2MB but level files must then be obtained which are far larger (the first I looked at was 39MB) and unless you have a broadband internet connection then it would probably be more worthwhile buying the compilation CD available from the UPP and asking if it is possible for a level file to be included. However, as usual the software is free but official support is only available to subscribers (£25/year) to the scheme.

Also a Rick Dangerous style game has been ported which owners of the Archimedes conversion of the original may find familiar and the RISC OS conversion of the role-playing PC classic Ultima IV has received an update. Readers of this column may remember that there were a few bugs in the original release but the Linux programmers promised that these were being worked upon so the UPP scheme is obviously working and dedicated to supporting its subscribers.

### **ProAction**

David Bradforth's company which has released numerous games, re-released much

software and books has become part of APDL which will now sell ProAction's titles as well as the entire 4th Dimension back catalogue. This is not to be confused with the company 4D which CJE Micros (the former owners of the 4th Dimension) have started to use as a trading name for other items.

The range of ProAction items is quite large and includes certain books which might prove useful to games programmers such as the Archimedes Game Makers Manual re-print. It is not known whether the Play it Again Sam 1 and 2 compilations, Technodream and the individual Repton versions released by ProAction in association with Superior Software will be available from APDL as they were formerly available from RComp. However, Desktop Repton (enhanced graphics, desktop play, 32bit compatible and including 'expansion packs') will be available from APDL and is set to include new levels that have accompanied the game on the PC version recently released by Superior Interactive.

For anything else games-related released by ProAction in the past such as RISC OS Frak!, Ravenskull and 8-bit Superior

Software titles it would be advisable to contact David Bradforth directly at the email address below to see if he still has a copy. It is interesting to note that ProAction attended the Classic Games Expo held at Wembley in August (see <http://www.beebgames.com/cgexpo2004.htm> for a report) and were selling the extremely rare 'Q-Master' which to my knowledge was never advertised in the Acorn magazines at the time (1991) although released on the Acorn Computing December 1993 coverdisc.

For the 4th Dimension and other titles, APDL should be contacted. At the time of writing the 4th Dimension section of the APDL website is still undergoing preparation.

ProAction managed to bring a range of old favourites to RISC OS as well as re-release other games software from the past. The 4th Dimension's catalogue was huge and there was also a burst of new releases in the late 1990's not forgetting unreleased titles such as Spitfire Fury. Let's hope APDL isn't the graveyard for this high quality and often fondly-remembered software and that this isn't the last we hear of

ProAction and 4th Dimension developments.

### Tom Cooper releases

More Tom 'Berty' Cooper games have been received by Acorn Arcade and released for RISC OS 4. The copyright status was recently modified by the legacy holders Freedom 2 (formerly Argonet) to allow distribution of the games as freeware. As a result the shoot-'em-up Wavelength and the manic game Hamsters were uploaded to Acorn Arcade. As it transpired however, the copyright for the former had passed to another company and so was subsequently removed. More news on that if it emerges as, judging by the quality of Tom's other releases (e.g. Lemmings, Darkwood), it would be a shame to miss out on this game.

Hamsters is a crushingly simple game that involves — wait for it — crushing innocent cartoon-rabbits in a time-limit on ever more difficult levels. The game is frantic and can be addictive if a bit nauseating with the added screen quake coinciding with the player's mallet hits!

## 8-bit releases

Issue 3 of Retrogamer magazine reported last time included a feature on the new one-man company publishing games for 8-bit machines or emulators. The company is Cronosoft and has an impressive range of titles so far including one for the BBC Micro and two further titles in development. The first BBC Micro release is Weenies and is compatible with Beebit, the RISC OS BBC B/B+/Master/Emulator. One of the few categories of games which wasn't commercially catered for on the BBC Micro during the era of 16-bit conversions was the player-plays-God - over-his-creatures game of the Lemmings variety. Obviously there were plenty of battle or world simulations but this type of game was becoming more popular as the BBC Micro games market was petering out.

Although a Beeb cover-disc game was released in the latter stages of Acorn Computing magazine of this variety (called Colony) Weenies is the first commercial Lemmings-type game to be released. It differs from Colony and indeed Lemmings in that the range of control options are more limited but the individual levels provide the variety. The

player must build bridges, ladders or ropes to prevent the weenies from falling into the abyss. One downside to this type of game on 8-bit machines however is the lack of mouse support so the player has to use the more laborious method of cursor-keys. However plenty of levels of provided with the game and at £2.99 is surely a bargain by any platform's standards past or present.

Weenies is provided on tape currently as the online payment system for obtaining disc images by email is broken but this is to be remedied hopefully in time for future releases. In the meantime please email Cronosoft if you would like to obtain a disc image.

Anybody who has read the Retrogamer interview with Cronosoft's Simon Ullyat will know why the games are supplied on tape or disc. It is Cronosoft's intention to provide the game as a package as the game would have been bought if it had been released at any time in the past for an 8-bit computer. Thus the tape or disc comes with a colour inlay with printed instructions as you might expect. Part of this is designed to

encourage the player to spend more time with the game rather than, say, move on to the next of a hundred games on a compilation CD or internet archive without sparing a moment to appreciate the software at hand.

The revival of 8-bit games can only be a good thing if it reminds people of why many earlier computer games were so enjoyable, as we are now in an era when more and more emphasis is frequently placed on making the game as realistic as possible and gameplay is forgotten. Aside from that it would be good to see the existing back catalogue of BBC Micro games complemented in this way and hopefully see people bringing forward ideas in games that were never implemented in the 8-bit heyday.

Next to be released is a conversion of a ZX Spectrum Cronosoft game, a platformer called Egghead in Space, converted by Christopher Dewhurst, the author of Weenies. If anybody ever had an urge to release any kind of game for their BBC Micro, to try to do something original, or to better an existing game then this is the time to do it!

## **Beebit and 6502em**

In view of the new 8 bit software available it is good to hear of the continuing development of Beebit by Michael Foot. This is now at version 0.56 and is compatible with the Iyonix enabling classic BBC Micro titles to be played indefinitely on the BBC Micro's most recent descendant. Other improvements and bug-fixes have been made such as key-mapping and interactive help and the emulator is available from Michael's website given below.

There is also news that the other major BBC Micro emulator, 6502em, available from Warm Silence Software has been significantly updated and is awaiting a re-release. This is a significant development as although commercial rather than freeware (as Beebit is) 6502em is a much more comprehensive package for emulation yet has suffered from several bugs. In addition to such bug-fixes, the emulator will be able to be run on the desktop which is a feature many users have requested for a long time and will also be Iyonix-compatible. However, the final publishing company is unlikely to be Warm Silence Software

again so until a deal is finalized, it is best to wait for further announcements which I will also report here as soon as I am able. One drawback of the publisher shift might be that the tape-reading software and hardware fails to migrate from Warm Silence Software and ceases to be available. Hopefully this can be avoided as in the absence of 5.25" disc interfaces for modern RISC OS machines, there is little available for transferring old software from the BBC Micro — let alone recording onto old media — for those without much technical knowledge. Some development of the !Tapes application might also incorporate recording-to-tape capability that was omitted in the initial release. This would presumably be of interest to BBC Micro enthusiasts who also own a RISC OS machine and also of course would be a means of transferring software both ways between the two systems.

### **Retrogamer magazine: Beeb news**

Recent issues of this retrogaming magazine have included features on the widely-praised adventure company, Level 9, that cut its teeth and made a living

writing enjoyable and often pioneering text adventures for the BBC Micro and other platforms. The company was run by Pete Austin and became a true family business. Their reputation was such that the company has been described as being, "one of the foremost British adventure game companies," and their games included titles such as *The Price of Magik*, *Snowball*, *Gnome Ranger* and *Lancelot*. *Retrogamer* magazine carries a feature on the company, split across issues 6 and 7, and should be of interest to anybody who remembers the days of 8-bit text adventures. Issues 6 and 7 are available from the magazine's website or from the publisher whose details are provided below.

### **More emulator news**

A new version (1.15) of the C64 emulator VICE has been released for RISC OS by Andreas Dehmel. This is a UNIX port and as such is not tailored to RISC OS hardware meaning that (although considered to be the most accurate emulation) it is not the most efficient software in terms of speed and memory usage. The minimum specifications are 16MB RAM and

StrongARM processor. Amongst the improvements and bug-fixes over previous versions are better cartridge support and disc drive support for the Commodore Vic20. VICE can be downloaded from Andreas Dehmel's website.

## **Computer gaming history book**

Those interested in the history of computer games and who may have bought the Edge magazine retro-gaming special last year will be interested in *High Score!: The Illustrated History of Electronic Games, Second Edition* (ISBN: 0072231726) available through Amazon (see below). This includes a section devoted to games originating in the UK including the all-time classics *Elite* and *Revs*. Also the section includes interviews and profiles of key companies. Probably an essential part of any retro-gamers collection!

## **TEK cheat**

An interesting 'cheat' was brought to the attention of readers of `comp.sys.acorn.games` recently for the real-time battle strategy game *TEK* by the much-missed Artex Software.

This can make the game far too easy so if you really want to do the game by strategy then I suggest avoiding the next paragraph!

When the player removes a unit from the factory list the player is reimbursed with the first item on that list. Presumably the authors envisaged that players of the game would want to correct errors immediately. However, this means that if a low-cost item is specified to be made after an expensive item then deleted the player's money will increase by the more expensive item's value. Be warned however a huge array of units is likely to crash the game.



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# Castle USB

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## Competing USB Standards

Before we look at Castle's USB offering specifically, it is worth noting that USB cards are also available from Stuart Tyrell Developments. Because the software interfaces differ between the Castle and STD products,

## Castle Iyonix PC

One of the big steps forward with the release of the Castle Iyonix PC at the end of 2002, was the inclusion of USB ports as standard on a RISC OS machine for the first time. The software provided by Castle allows many 'storage

### *Mark Smith delves into the mysterious world of USB*

some drivers are only available for one or the other whilst some (such as the David Pilling scanner drivers) will work with both. The situation is unfortunate and stems from the lack of a single organisation setting standards for RISC OS in the post-Acorn era. Hopefully Castle's ownership of RISC OS, and the new-found spirit of co-operation between Castle and RISC OS Ltd will help to avoid similar situations from occurring in future.

class' devices to be used out of the box. These devices are accessed as though they were disc drives and include most keyring flash storage devices, flash card readers, some cameras and a few other devices such as certain MP3 players. RISC OS 5.08 now includes a new version of DOSFS which supports the FAT32 format commonly used on higher capacity devices, though it's worth noting that it is still only possible to access devices up to 2GB in size. This is because of limitations in the way that the RISC OS Image Filing System interface works.

The fact that the Iyonix does not

have conventional PS/2 mouse and keyboard ports, or a parallel printer port, means that every Iyonix owner must be using some USB devices, if only a mouse and keyboard. For those who have invested in PS/2 KVM (keyboard, video and mouse) switching units, it is possible to connect and PS/2 mouse and keyboard via a converter box. However, not all work so it is best to get advice from a RISC OS dealer.

A list of USB devices that have been found to work with the Iyonix is available on the Iyonix website at **[www.ionix.com](http://www.ionix.com)**

### **Risc PC USB Podule**

The podule card fits any A7000(+) (without a CD drive fitted) or Risc PC and comes complete with four connectors. All of these are on the back of the card – there is no option for front USB ports, although more accessible connection points can be made available with the use of a USB hub.

The card itself looks very empty - there are a very small number of chips surface mounted on it, one of which contains the card's firmware in flash ROM and hence can easily be reprogrammed as

and when updates are made available on the website.

Fitting the card is very easy - much the same as any other podule. On booting up the machine, however, I discovered the first problem. The system no longer recognised any of the IDE devices connected to the Yellowstone RapIDE card in the machine, though they were all fine if connected to the internal IDE interface. Removing the USB podule resolved the problem, but they were not recognised again when the podule was put back in the machine.

Subsequent tests revealed that whilst any old A5000 podules, such as an old Morley SCSI card, worked fine with the USB podule, any other cards using the enhanced Risc PC specification such as the RapIDE card and ViewFinder would not function correctly with it. There was clearly a fault on the card which, after it had gone back to Castle, was quickly identified and put right by John Ballance.

Fitting the returned card in the machine, all the cards worked perfectly happily together. One further disappointment was that the Olympus Camedia 3020 Zoom



*photo 1*

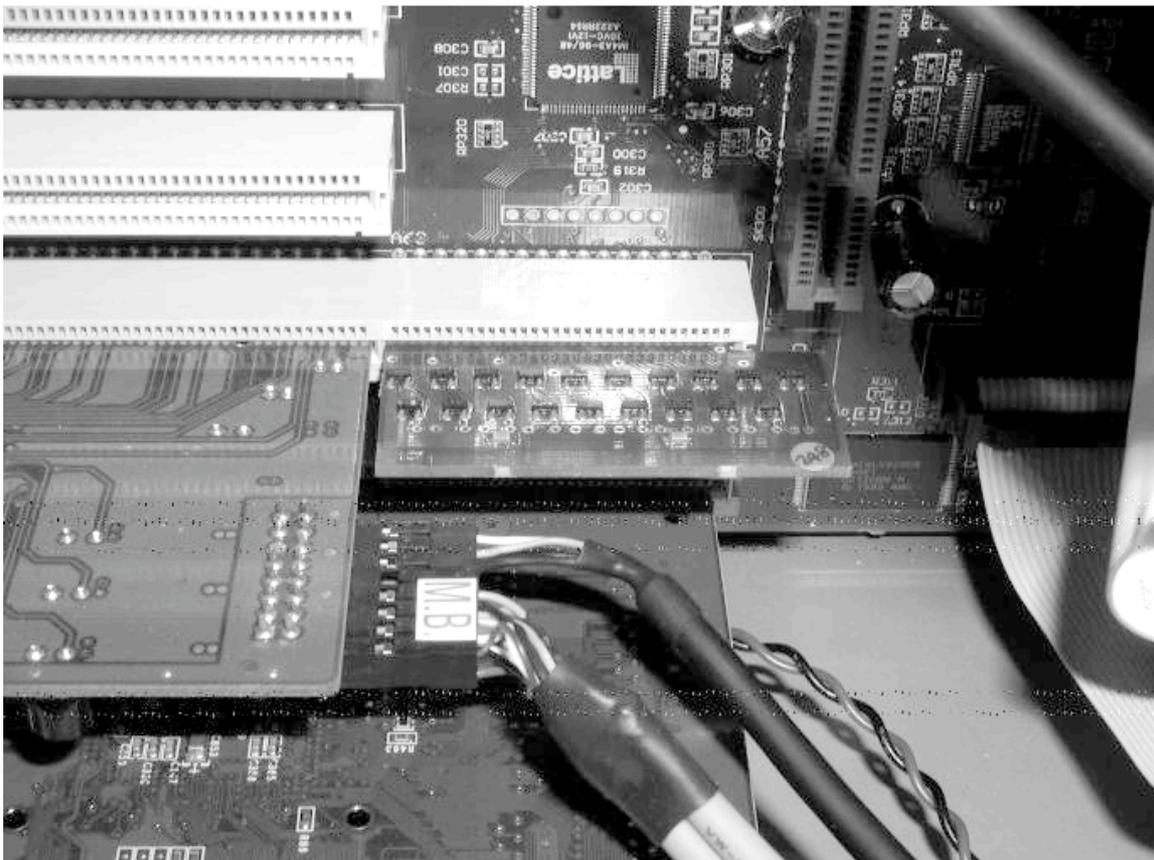
which had worked perfectly well when tested on an Iyonix, failed to work with the podule on the Risc PC. This was solved by John kindly providing a small flash card reader, but it's worth noting that devices that have been found to work on the Iyonix, are not guaranteed to work with the Risc PC podule (or, presumably, vice-versa).

## **USB Devices**

The best way to buy USB devices in the knowledge that they will work with your RISC OS system, is to go to a RISC OS dealer. Otherwise there are no guarantees. For example, the Epson Perfection 1660 (as shown in *photo 1*) and 2400 scanners will work fine when purchased with David Pilling's scanner software, but new Epson scanners such as the 1670 are not compatible. The



*photo 2*



*photo 3*

older scanners are, however, still very good units if you can get hold of them.

One of the smartest USB devices that I've come across are the Mitsumi combined floppy drive and card reader (*photo 2*), designed to fit in a normal 3.5 inch floppy drive slot. Unfortunately these are Iyonix only, but Castle will sell you machines with these already fitted in place of a standard drive, or you can buy one from them to fit yourself. Note that the Castle supplied units come with a special cable to fit a header on the Iyonix USB card (*photo 3*).

One of the more popular uses for USB these days is for the connection of printers. As the Iyonix has no parallel printer port, printing has to be via USB, although USB to parallel converters are available for the connection of older printers which do not support USB. Being able to print via a USB connection is one thing, however support for specific printers is another. One of the promising development's in this area is Martin Wurthner's port of GIMP Print to the RISC OS platform which opens up a range of modern printers that may be used.

**Send your queries, whether technical or elementary, to our Technical Help Service, by email to [support@armclub.org.uk](mailto:support@armclub.org.uk) or write to the club's Merton Court address (which you can find on the last page) or fax 07020 954018.**

**If it's urgent you can phone 07010 708098. (Phone and fax are at higher rates.)**

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# Ron's Rubbish Corner

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Yes it's me again and the blame for being afflicted with my usual drivel lies entirely at your own doors. If you lot had written almost anything then our esteemed editor would not have asked me to write yet another article.

furniture stores looming.) "Why do you need one of those?" I run down a list including, "It's bigger than my 17 inch monitor, better, more ecologically friendly and my present monitor may fail at any moment. If it does that then I would have to pay much more for

## ***Ron Briscoe on how to fool (or not) her indoors***

I am busy typing this whilst staring at my new 19 inch LCD monitor thanks to yet another cunning plan coming up trumps, or so I thought at first. Now I am not so sure that I, master of cunning plans, have not been out manoeuvred.

A short while ago I was perusing the Newsgroups when my eye alights on a not to be missed offer from R-Comp. A 19 inch monitor for only £360? I must have one. I approach the financial adviser, Christine purses her lips. (The new chair is not a great success and I can see many more visits to

a replacement." Christine is not swayed by my fine arguments so I decide that I will have to resort to skulduggery to achieve my desire.

Now Christine likes to type out an e-mail or two to our daughter who lives in Edinburgh and this is normally done when I pay a visit to the local brown pop shop as otherwise I will not relinquish control of **my** computer.

While Christine is making herself a cup of tea and whatnot prior to writing to our daughter I seize the moment. After opening up a write window in !Pluto I reduce the

screen saver time to one minute, I then dip into my Diversions/Sillies directory and locating one of my favourites !Australia by Keith Gaughan click on it.

Now what !Australia does is turn the screen upside down and so leaving it running I exit to the brown pop shop saying cheerily "I've left Pluto set up for you to use."

When I get back from the brown pop shop Christine says, "There is something wrong with your computer the screen is upside down." I feel a twinge of guilt, it must be old age, I suppress it for I must have that monitor. "I think that the monitor is starting to go," says I, finger hovering over the escape key. Surprisingly Christine agrees that I can have the new monitor. I suspect nothing for even as she speaks I am dashing off an e-mail to R-Comp placing an order. A few days later the monitor arrives, is unpacked and the old one is consigned to the box room as a standby. Even Christine is impressed with the new toy and I gloat at the success of yet another cunning plan. Fool that I am.

A couple of weeks later I arrive home from work to find Christine perusing glossy leaflets. What are

those? I ask. "We are having a new front door," says my beloved, with a steely glint in her eye and gives me the leaflets. I am aghast, these are for 'Composite' doors and one of those including fitting costs nearly as much as an Iyonix. "Why do we need one of those things." "Because I am fed up with asking you to paint the front door, this one won't need painting and there is a ten year guarantee included. Besides which I never said anything when you bought your new monitor, even though your old one wasn't really broken." Hoist by my own petard I succumb to my fate and spend the next four hours passing door leaflets to and fro until Christine has decided on the one that she wants. The deed is done, 960 quidlets and fitted by Christmas. Still as Christine says I won't have to paint the dratted thing.

After the dust had settled down I asked Christine how she had knew that there was nothing wrong with my old monitor. "Easy peasy, I remembered you playing with that !Australia thing when you had it on your old computer and so I thought that I would exchange a new front door for a monitor." Drat and blast either I am losing my touch or Christine is catching me up in the cunning stakes.

To get over the stress of being outflanked I buy myself a USB fan. This plugs into a USB port and makes a satisfying whir, just the thing to cool down a fevered brow working away on its next cunning plan. I also buy a wireless scroll wheel mouse for next to nothing from Lidl and have great fun altering the keys. (Five recognized and one just behind the wheel that seems to have a mind of its own as to what it does.)

The fun of playing with the settings is so much that I neglect when changing the scroll wheel switch from menu to select to reassign another button to do menu and then press 'Save'. The result? No menu button! I can't get a menu on !HID so I cannot change the settings on the mouse. I ctrl-shift-F12 to close down the computer and restart. When the Desktop reappears the mouse is working normally, that is until I start !HID, thence I lose the menu function again. Thank my lucky stars that I manually start !HID and then go through the closedown procedure again. When up and running again I dash off an e-mail to Paul Reuvers at XAT and very shortly he sends me a command line instruction that restores my

middle mouse button menu functionality and enables me to reset !HID. What the good people residing in the RISC OS world do for me is beyond the call of duty.

I have bought Christine a dolls house for Christmas and have spent hours surfing the web collecting and printing out wallpaper samples for it. So many that I will have to refill my ink cartridges and use my Epson chip resetter. Standby for inky calls for help. The ease and speed of printing samples on all sorts of coloured papers putting !GimpPrint and !PrintSpool to the test, which they both pass with flying colours.

By the time you lot have consigned this to the rubbish bin I will have been to the Birmingham Show and be busy playing with goodies purchased there and I conclude by reminding you all of the old saying. "Where there's a will there's a way and if not there's a cunning plan."

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# Winning Games with Logic Part 8

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You may think doing the right thing at the right time is easy, when hungry eat, when thirsty drink, end of problem! Well not quite! In fact that is what we have a mind for! One common way to select what to do is assume the

if this was the action selection policy of a real creature it would be long since extinct! You may have also spotted that *all animals are not extinct*.

We thus conclude that animals

## **Barry Aulton continues ...**

CCC (computer controlled character) can be in one of several states e.g. :-

if in state "afraid" -> **FLEE FROM ENEMY**

if in state "hungry" -> **EAT**

Here the only way the character can change its state is by performing an action in response to an input signal. We thus have a type of look up table called a Finite State Machine (FSM). Things however can go wrong. If the CCC chooses to flee it may also move away from the food source. If it chooses to find food it may decide to go too close to an enemy. You may have spotted that

have some degree of intelligence.

Let's take the case of the humble pigeon, not regarded as the Einsteins of the animal kingdom, but compared to your average cleaning bot pretty smart! Pigeons are good at forming concepts, such as 'water', 'tree' and 'human being'. A pigeon can recognize water in the form of droplets, a turbulent river or a placid river. It can recognize humans clothed or not, in groups or alone. Is this a sign of intelligence? In 1983, pigeons were trained to indicate which of two comparison symbols most resembled a sample symbol. Usually one of the comparison

symbols was identical to the sample symbol apart from being rotated. It was found that their reaction times remained unaffected by angular rotation. However human reaction times increase with angular separation. They concluded that the pigeons solve such problems without using mental representation, using some form of parallel processing. But does that mean that they cannot think? Plato and Thomas Aquinas thought just that!

Plato stated "*Human behaviour results from voluntary & rational processes, man's will being free to choose whatever course of action his reason dictates*". ("If I suck my sides in, look winsome and purr, maybe those fool humans will give me a second breakfast").

Thomas Aquinas (1224-1274) stated "Man is free because :-

- 1) "*He is rational*" (women and other animals being regarded as irrational)
- 2) "*He is not driven into action by an external cause without his consent*" ( If someone chucks you into water, you can decide to swim!)
- 3) "*He can choose means of realising the good or purpose which his reason conceives*".

Many researchers have abandoned the quest for general intelligence and focused on ways of imitating some aspects of intelligent animal behaviour. We will start with simple reactive (instinctive) behaviour. *As always I will introduce some definitions (a bit boring but it will help later on!).*

**ACTION** - An entity at the lowest level such as moving in a certain direction, sleeping or remaining motionless to avoid predators.

**ACTION SELECTION** means choosing at each moment, the most appropriate action with regard to all types of stimuli. For animals 'most appropriate' can be measured by their reproductive success, but not for robots or computer controlled character's (CCC's).

**UTILITY** is a 'measure' of (psychological) 'value'. In spending time and money say buying china, or time reading books, we tend to choose in a way that maximises our satisfaction or 'utility' that we obtain in return, (even if we are not aware we are).

A 'RATIONAL' agent :-

- 1) is capable of performing a number of actions
- 2) knows the consequences

- of each and
- 3) has a complete and consistent order of preferences among them.
  - 4) acts rationally if there is no other feasible action the consequences of which are preferable.
  - 5) consistently makes the same choice when in the same state and when given the same set of incompatible options.

Thus the 'rational' decision-maker is a maximiser of 'utility'. If an animal cannot simultaneously perform two activities it must choose between them on the basis of some index of their potential for performance. If the potential for cleaning floors is measured in chalk and the potential for washing up is measured in cheese, then in choosing between chalk and cheese there must be a known exchange rate - i.e. a '*common currency*' in terms of which the merits of chalk and cheese can be measured. In a simple competition the animal simply performs the activity with the greatest potential.

We usually discount the 'utility' of an outcome by the likelihood of achieving it. Suppose I am choosing between buying an ice

cream or a lottery ticket. I could first convert the money I would obtain if I won the lottery into 'ice creams' - say 100000 ice creams, but hang on a bit, what if I don't win? My 'expected utility' is thus  $100000 \times \text{probability of winning the lottery}$ , (which is less than the probability of being struck by lightning). I therefore, being rational, choose to buy the ice cream! A 'rational' agent is a maximiser of expected utility.

In 1980 the ethologist Thomas Ludlow's combined these ideas into a model. He proposed that an activity such as feeding or drinking, has a value, namely its 'utility' value. This value we can think of as a 'motivation' to perform that activity. However competing activities can be mutually inhibiting, e.g. an animal can not walk in two directions at once. (Skiers who have attempted to ski round both sides of a tree will testify to this). Motivation to perform one activity thus 'inhibits' the motivation to perform other competing activities.

The basic model gives an estimate of the amount of 'motivation' for each activity. This is:-

Motivation for activity (I) = sum of any internal factors + sum of any

external factors - inhibition from all other competing activities.

#### Internal Factors:-

A CCC's 'motivation' to fight may depend on 'internal factors' such as its state of health, its aggression its armour and the effectiveness of its' weapons etc. An animal's relevant internal factors may be its health and how much food and water it has recently consumed.

#### External Factors:-

An animal's 'motivation' to eat may depend on how far away and what value (to the animal) the nearest food source is.

A CCC's motivation to fight may depend on

- 1) how far away the enemy is
- 2) the relative weapons and armour of that enemy etc.

We now have to convert these sensory signals into motivational utility. To do this Ludlow came up with the idea of 'Releasing Mechanisms' to 'filter' external and internal stimuli. They identify significant objects or events from sensory input and output values representing their 'importance' to the animal (see **Fig. 1** page 54).

Releasing mechanisms output a continuous value that depends on things such as :-

The presence of and distance to the stimulus object or event (e.g. a person is nearby) and more specific feature eg the person is an enemy carrying a weapon.

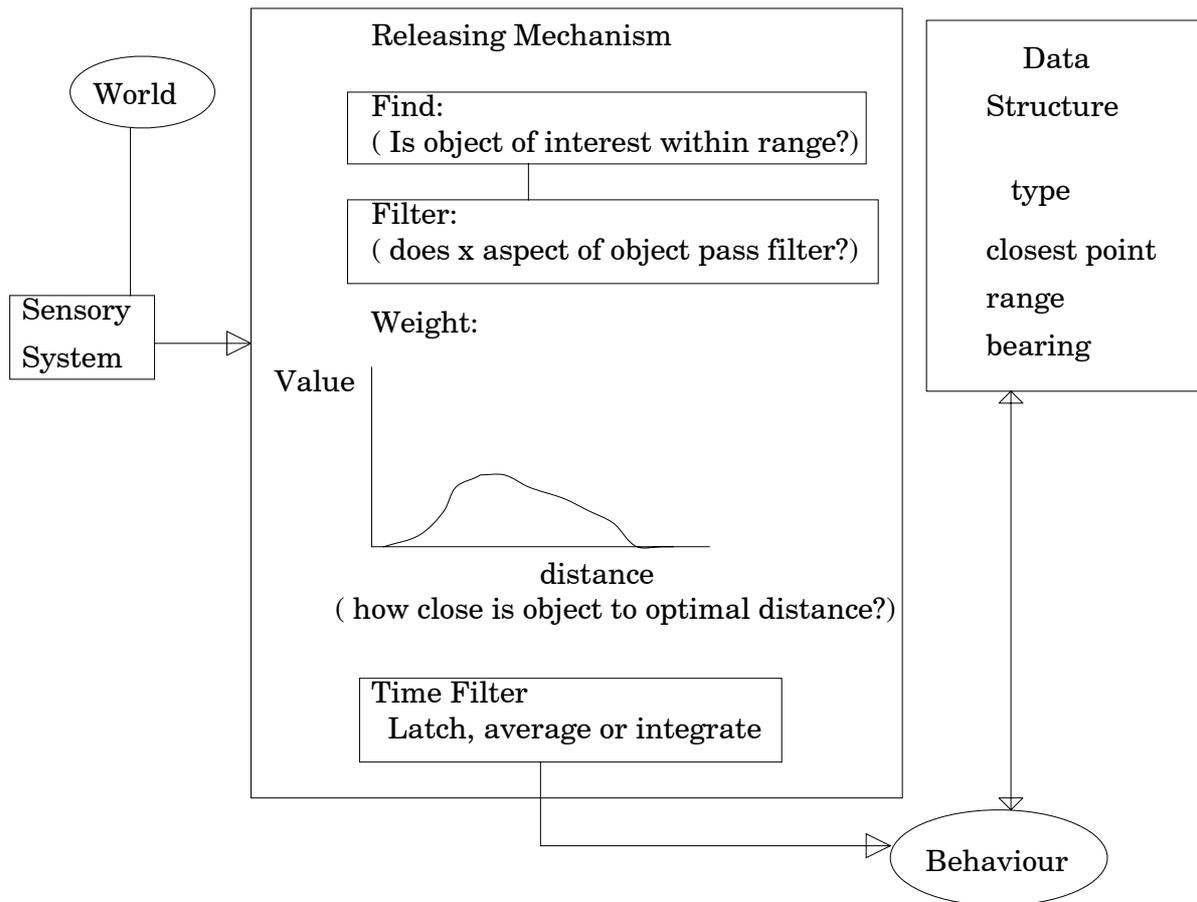
This permits a kind of trade off behaviour e.g. for a human the Pizza is a week old, but he is very hungry. We now need to consider how the animals' external and internal factors (e.g. health, hunger and thirst) combine. Next time I will show how it all fits together, but **Fig. 2** (page 55) will help.

#### ref 1

AI Game Programming Wisdom 2  
Ed Steve Rabin,  
Charles River Media

#### ref 2

Action Selection In Hamsterdam:  
Lessons from Ethology B  
Blumberg 1994 From Animals to  
Animats proc. 3rd annual  
conference on the Simulation of  
Adaptive Behaviour.

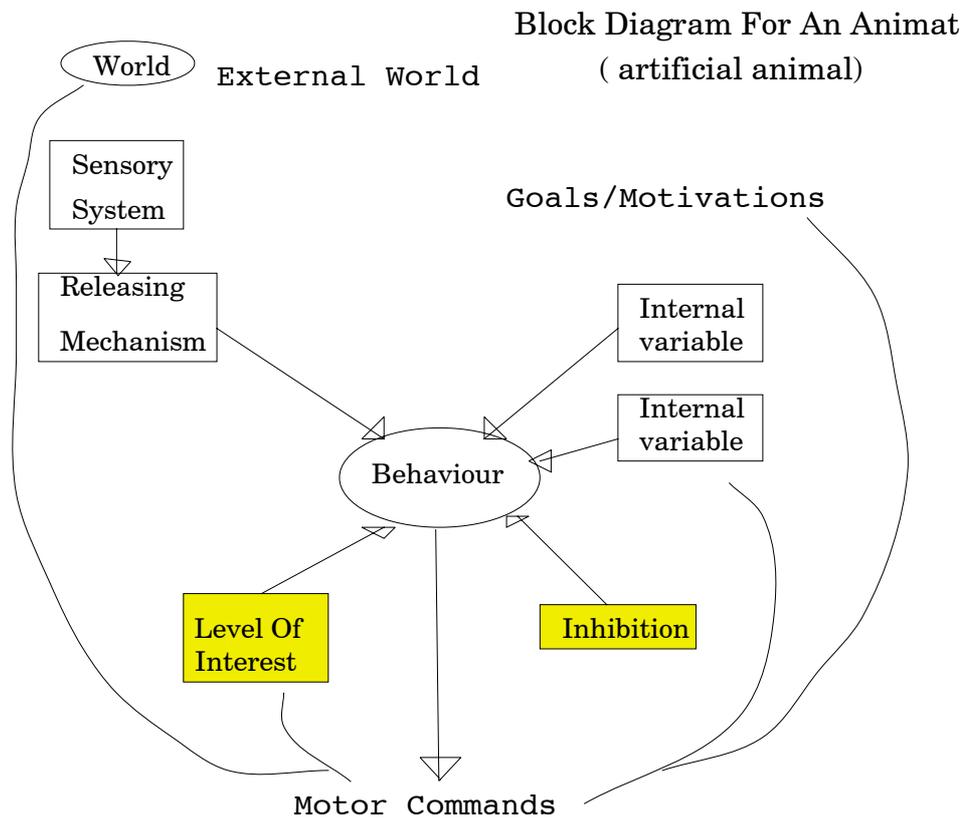


Releasing Mechanisms identify significant objects or events from sensory input and o/ps a value which represents its strength. A behaviour can be made more or less sensitive to a sensory input by varying the allowed maximum.

The maximum value reflects how usefull the object of interest is. For example for a food sensitive releasing mechanism the maximum would be the food value taking into account the energy the animal may expend in eating the food.

A mechanism that will output a motivation to avoid a predator may include a distance factor such that when the predator is within a critical distance (e.g. two meters for a moth to take evasive action against a bat), the mechanism outputs a high value.

*Fig. 1*



We need to know which ‘behaviour’ (e.g. eating, drinking, fighting) is the most relevant at any particular time, because that’s the one we will want the animat to perform. To help it to reach that decision we have some internal variables such as level of hunger, thirst, aggressiveness etc. that may be relevant to some behaviours. We also have inhibition because if it’s a good idea to perform one behaviour, it’s probably a bad one to simultaneously perform another. Level of Interest models boredom or behaviour specific fatigue, (if you don’t understand this try eating 9 Mars bars and then face a 10th).

We think of the animat as having senses e.g. sight and hearing even if it’s just a baddy in a computer game. Each sense in its sensory system has a filter here called a ‘releasing mechanism’. We then combine the o/p’s of all the senses with relevant internal variables to decide how much of a good idea it releasing mechanisms act as filters which identify significant objects or events is to carry out each behaviour. In more complex systems, releasing mechanisms act as filters which identify significant objects or events.

*Fig. 2*

# RISC OS Rhymes

*Another poetic masterpiece from Alan Wickham's amazing  
mechanical RISC OS wizard*

## The Ballade of Miniloggy

T'was Nornand and the clasty tralve didst osse and sockel in the farb.  
All ajoisy were the pottytacts and the rork naths instrarb.  
Beware the Minilog my son, the wires that prick. the volts that shock.  
Beware the tut-tut bird and shun the flutterous windysock.  
He took his threedee tape in hand and long the chuggsome foe he taught.  
So rested he by a contact tree and stood a while in thought.  
And as in guffish thought he stood, the Minilog with wires askewed,  
Came digering through the logy, and lamped as it slewed.  
One-O, one-O, and so and so the threedee tape went whipper-whap.  
He graunched it's base and with it's case he went calumphing back.  
And hast thou graunched the Minilog, come to my arms O progish boy,  
O Flapjous day, calloo, callay, he chortled in his joy.  
'Twas Nornand and the clasty tralve didst osse and sockel in the farb.  
All ajoisy were the pottytacts and the rork naths instrarb.

## Notes

Nornand	Nor + Nand
Clasty	Classified & Nasty
tralve	Transistor + Valve
osse	Oscillate
socket	Make a noise like a socket
farb	The sea surrounding a Range Ship - goes far before it, far behind it far beneath it etc.
ajoisly	Adjustable & Noisy
pottytacts	Potentiometer contacts
rork naths	(forgotten)
instrarb	Strobed in
Minilig	Logic Gate element made by Elliots from discrete transistors etc. before integrated circuits appeared.
flutterous Windysock	Elliots works was next to an airfield.
threedee	3 Dimensional ranging system.
tape	Punched paper tape.
chuggsome foe	The computer (they made “chugging” noises when running).
contact tree	Arrangement of relay contacts
guffish	(forgotten)
digering	Moving in the manner of a Digit
logy	Logical
lamped	Glowed like a lamp
calumphing	Calculating Triumphantly
progish	Like a programmer
flapjous	(forgotten)

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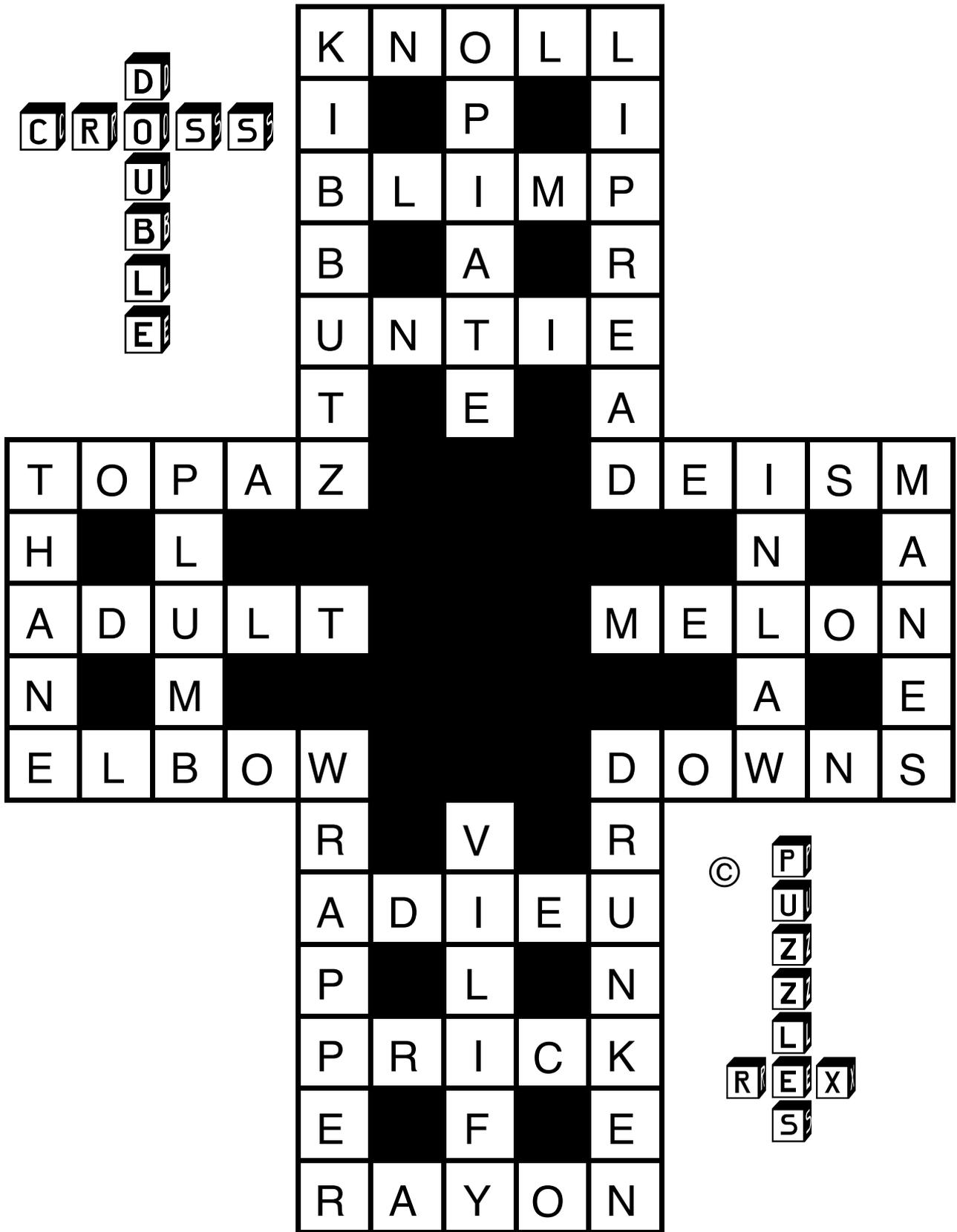
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