

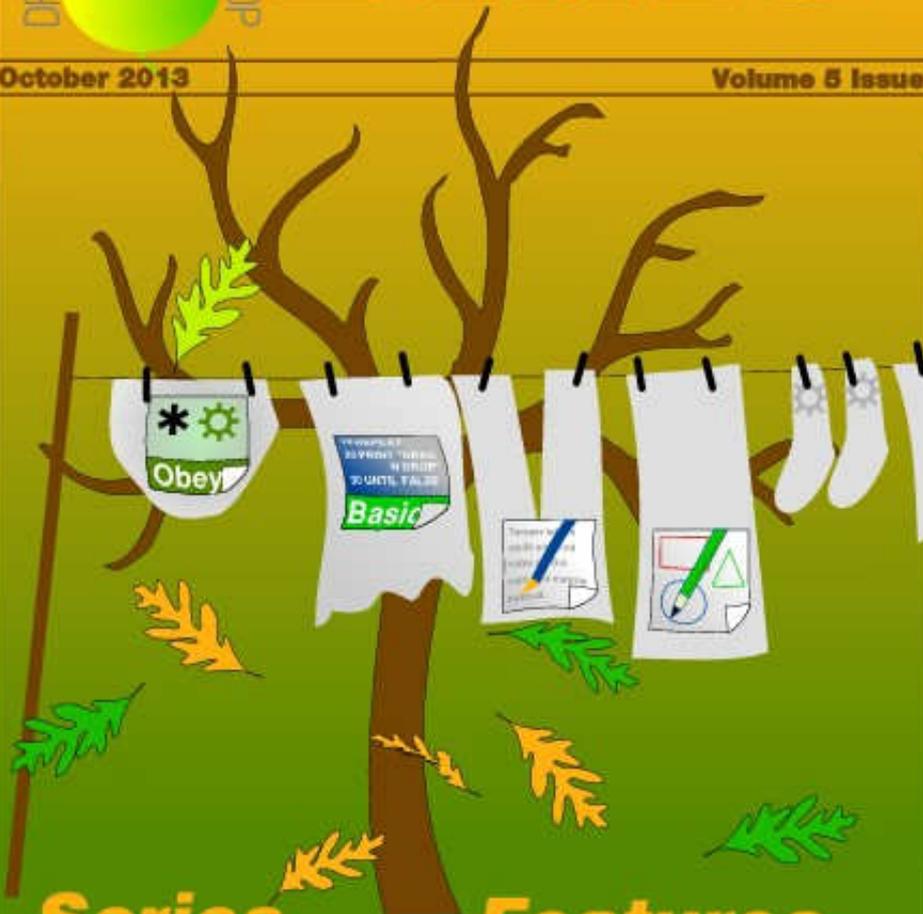


DRAG 'N' DROP

October 2013

Volume 5 Issue 1

£3.00

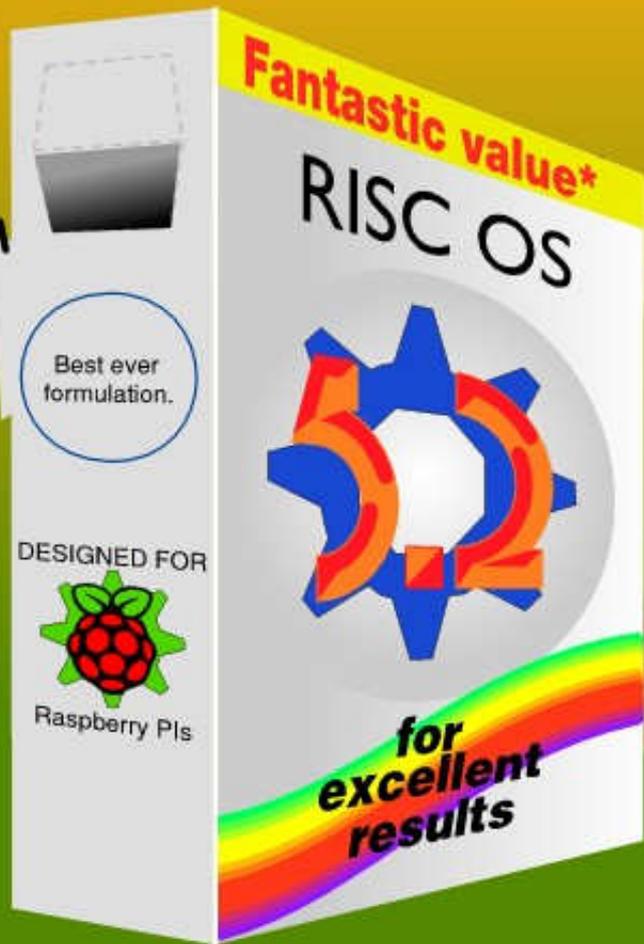


Series

Cineworks, PMS
Fireworkz
PiBall Arcade action

Features

Unicode
Using the GPIO



RISC OS 5.2

London RISC OS Show Saturday 26th October 2013

RISC OS

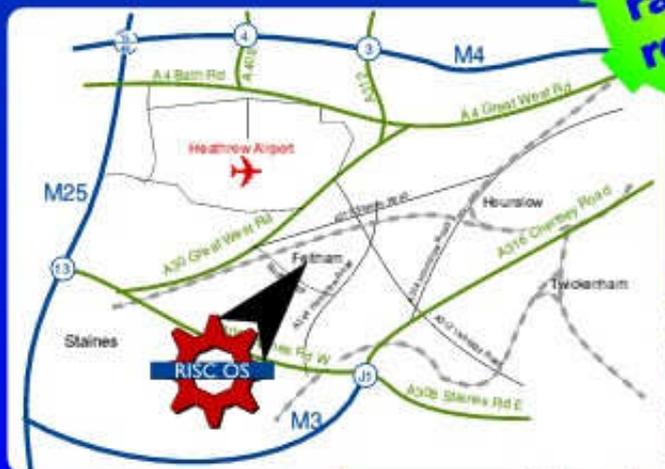
11am–5pm

Sat Nav
TW14 9AD

St Giles Hotel Feltham

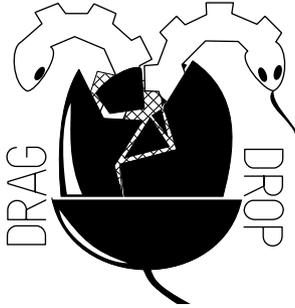
Excellent
rail bus
road air
links

tickets
on the door
£5



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www.riscoslondonshow.co.uk



EDITORIAL

Welcome to the first issue of volume 5 of *Drag 'N Drop*. With the advent of RISC OS 5.2 on physical Rom chips we welcome A7000 and RiscPC users.

Of course many RiscPC owners have chosen the RISC OS 4 and 6 route. As there didn't seem to be a lot happening at RISC OS Ltd for a few years I decided *Drag 'N Drop* should focus on the active front, i.e. RISC OS 5. There's no reason why that should be exclusively the case so come on RISC OS Ltd, you don't want to put all your eggs in one basket do you?

In this issue we have the usual eclectic mix of features, games and programming, plus the start of what I hope will be a long series on using the Raspberry Pi's user port (the GPIO). If you have made any electronic gadgets for your Pi and/or have written accompanying BBC Basic programs please let us know!

Chris.

Christopher Dewhurst

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Produced on RISC OS computers

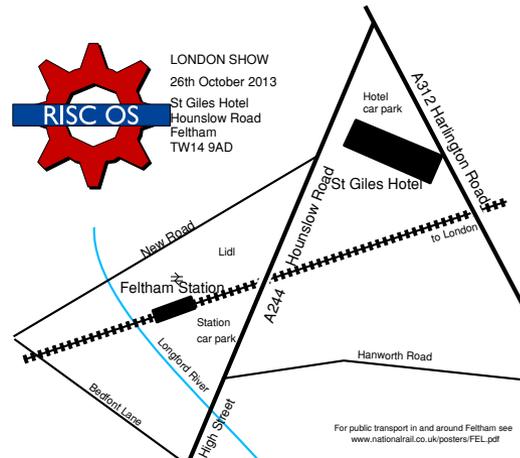
This issue has been blessed with contributions from the following people:
Jon Robinson (Cineworks)
Christopher Dewhurst (everything else)

The views expressed in this magazine are not necessarily those of the editor. Alternative views are always welcome and can be expressed by either writing an article or a short editorial.

All articles and advertisements are published in good faith. No materials in this publication are meant to be offensive or misleading. If you come across something you believe is either of the above please contact the editor using the details below.

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At a glance...

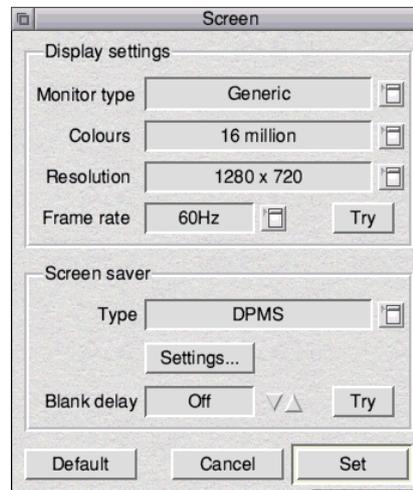
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Beginner's Tips: Single Tasking



Many applications run on the desktop which is what we call "multi tasking". Some programs, type-in ones like games featured in *Drag 'N Drop*, take over the whole screen. The prompt "Press space or click mouse to continue" returns you to the multi-tasking desktop. This is known as **single tasking**.

You may need to temporarily change your Screen settings for single tasking programs to run properly otherwise you will get strange screen displays. Double click on your !Boot file and choose **Screen** from the **Configuration** window:



Make a note of the current Display settings so you can revert to them later. (In the screenshot on the left it's **Generic** Monitor type, **16 million** colours, **1280x720** resolution.) Then change the Monitor type to one of the Acorn AKFs in the pop-up menu, e.g. **Acorn AKF50**. which will default to 16 million colours 800 x 600.

Do you have a question? Don't be afraid to ask! Write to editor@dragdrop.co.uk

News

RISC OS 5.20



July 2013 heralded the arrival of version 5.20 of the operating system, billed as having over 1,500 changes including new BBC Basic keywords, software to network with our colleagues in the Microsoft world, and a theme manager (featured in this issue) though we still have found that holding onto the slider bars for too long in Paint and Draw crashes the applications.

A convention has been established where even numbered releases are stable, so 5.21 is in development and the next official release will be 5.22 and so on.

RISC OS 5.20 can be downloaded for free for the Beagleboard, Armini and Raspberry Pi computers, purchased on SD Card for the Pi for £10 + £2 P&P and also for the first time ever as a physical pair of Roms for the older IOMD (Input/Output Memory Device) computers like the RiscPC and A7000.

A Collectors dual CD-Rom/video is included with the Roms. Put it in your DVD recorder to watch a short instructional video (complete with late 80's synthesiser music) about how to upgrade the Roms then put the CD in your computer to do the necessary to updates to the hard disc.

The Rom plus Collectors CD pack costs £30 + £2.50 P&P. The Collectors CD can also be bought on its own for £6 plus £1.00 P&P.

The ROOL Shop can be found at <https://www.riscosopen.org/content/sales>



RISC OS Portsmouth

September 2013 marked a new date in the RISC OS calendar with the first show ever in Portsmouth UK. The show was held at the Innovation Building on Saturday 28th September was a fairly quiet affair but saw some new faces showing their interest in the RISC OS world.



RISC OS Awards 2013

Vince Hudd has undertaken the task of running an awards poll for RISC OS this year, after a couple of years hiatus (it used to be run by Drobe then Iconbar). Categories are to be announced in November 2013 with voting taking place in December. Please keep your eye on www.riscosawards.co.uk for further news.

RISC OS London Show

Finally, don't forget the London Show taking place on 26th October. *Drag 'N Drop* will be there among RISC OS developers with special offers not to be missed. Tickets just £5 on the door. See the advert elsewhere in this issue and get along to www.riscoslondonshow.co.uk.

Application Updates

Easi/TechWriter 9.12

Version 9.12 of the RISC OS document processor features two significant enhancements: improved DOCX (MS Word) import and HTML 4 export with CSS (Cascading Style Sheets).

On the DOCX side, headers and footers, automatic fields and tables are imported correctly to name but three improvements.

CSS is a modern web standard making it easier to keep the content of a document separate from the details of how to display it. EasiWriter will export the HTML as before, in either HTML 3 or 4, but also construct a CSS with HTML 4 which can be later tweaked in a text editor if required.

Upgrades start at £30 (full package for new users £99), free if you are upgrading from version 9.1 (you will need your username and password).

<http://www.mw-software.com/software/ewtw/ewtw.html>

PlingStore

Just turn the "i" of iStore upside down and you get what !Store is to RISC OS what iStore is to Apple. A lite version of the !Store has been around

for a while but R-Comp has been developing it into a fully fledged, one-stop shop for all RISC OS apps, both freeware and paid-for. You can purchase commercial software in the !Store using your Debit or Credit card using the friendly interface. See www.plingstore.org.uk but if you are on the R-Pi support scheme you will have a copy of the !Store in its current guise already installed.



Name	Version	Supplier	Price
as31	2.0b3	Thomas Milius	Free
Cabin font		Michael Kerpan	Free
Calendar	1.04	David Pilling	Free
Calibre	3.23	Chris Johnson	Free
CashBook	1.30	Steve Fryatt	Free
Cat	0.20	CKH	Free
ChartDraw	3.13	Chris Johnson	Free
Complete Animator	1.06	R-Comp	£30.00
ConvText	3.12	Paul Sprangers	Free
CountDown	0.11	CKH	Free
DataPower 3	3.15	R-Comp	£99.99
DataPower Home	1.70	R-Comp	£40.00
DejaVu fonts		Unknown	Free
Dict	1.29	Paul Sprangers	Free
DigitalCD	3.06	André Timmermans	Free
Docktor	0.13	TRSSC	Free
DrawPrint	1.41	Sine Nomine	Free
Exo font		Michael Kerpan	Free
Fade	0.93	TRSSC	Free
Fanwood fonts		Michael Kerpan	Free

NewsUK RSS Reader

RSS (Rich Site Summary) is a web standard for delivering changing web content and !NewsUK is a free app using RSS to produce summaries of the BBC News in a desktop window. Click on any stories that interest you to go the relevant page on the BBC's website Download NewsUK from <http://www.paymentlabs.com/riscos/newsuk>.

KevSoft web address

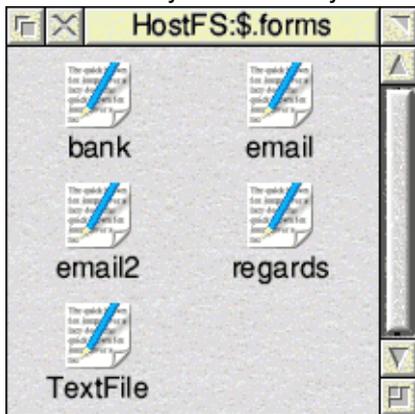
Kevin Well's page is now at www.kevsoft.co.uk and not <http://riscos.kevsoft.co.uk> as shown by some internet search engines and RISC OS pages. No new application updates but all your favourite desktop, lottery, politics and games apps including Form Filler wich is featured in this issue's Desktop Heroes.

MTP 0.21

Media Transfer Protocol (MTP) is a standard used

Desktop Heroes: Form Filler

Whenever I need to type repetitive information onto online forms or programs I used to keep several little text files handy in a directory.



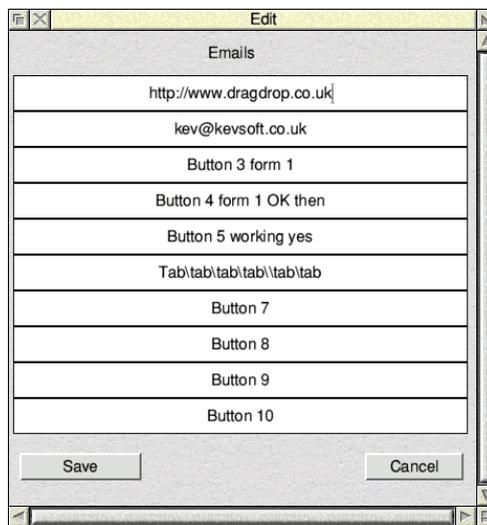
The RISC OS graphical user interface (GUI) makes it easy to drag-drop phrases into emails, HTML tags, email addresses, usernames etc.

That was before I discovered Kevin Wells' Ffiler (The double F is deliberate, short for Form Filler). It's free and can be downloaded from <http://kevsoft.co.uk>. It does much the same job except all the snippets of the information are kept in one place.

Once you have de-archived Ffiler.zip double click !Ffiler to install it on the iconbar. To be honest Ffiler's icon looks very boring and I

would jazz it up a bit but that is personal taste.

Select-clicking on the icon brings up the main window. Ten 'banks' of buttons each are available and to insert the text at the caret you just select click the appropriate button and the text will appear, just as if you had typed it in at the keyboard.



To change the settings of the buttons in the current bank click the edit button, modify the fields and click save. Anywhere I want the Drag 'N

Drop website address I can now just click on its button and insert it into the text.

To access the other nine banks click menu over the "Main" window and select the appropriate option. To give the banks names select "Edit form names", the last menu option.

Special buttons are shown further down the "Main" window, you can have a miniature or slimline versions of the window. Useful if you have lots of documents open on the desktop. Plus there are buttons to insert return, tab or delete codes, and do the equivalent of Control C to copy the highlightet text which I found to be of limited use.





PiBall is a program written entirely in BBC Basic 5, The game is a "breakout" clone and includes capsules, impenetrable bricks and a screen designer.

The program makes use of the system sprites on RISC OS. Before entering the program you have to use Paint to set up a sprite file called "PiBallSpr" which should consist of the designs shown in Figure 1.

If you get the error "No memory is reserved for the system sprite area" then adjust-click on the Raspberry icon and drag the System sprites slider as shown in figure 2. You may also need to temporarily adjust your

monitor definition file (figure 3).

PiBall features:

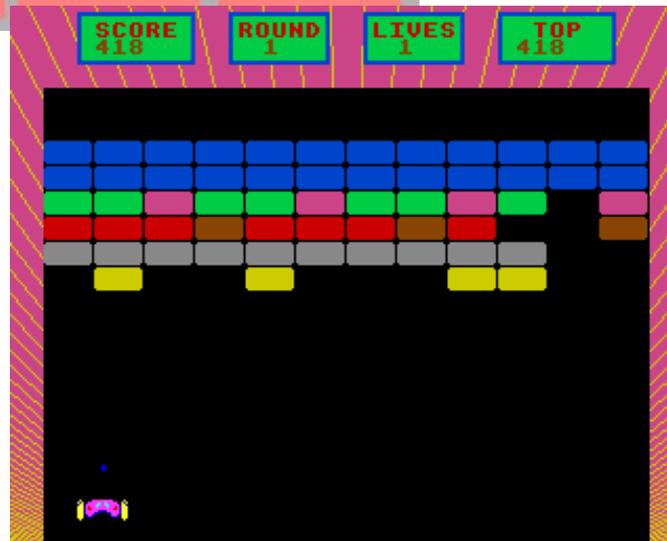
- Screen designer - the PiBall construction set
- Multiple bats and balls
- Fast ball, slow ball
- Catch ball
- Break out of screen

Your bat movements are controlled by the mouse with any button firing the ball at the start or when it is caught. Details of the brick and capsule types are included with the program instructions.

The screen designer is easy to use. Click the mouse over the brick type you want then place it on the

screen by clicking the mouse over the place you want the brick.

Happy bouncing!



● *Originally published as Archieball in A&B Computing, February 1988. Updated for modern RISC OS machines by Drag 'N Drop, October 2013.*

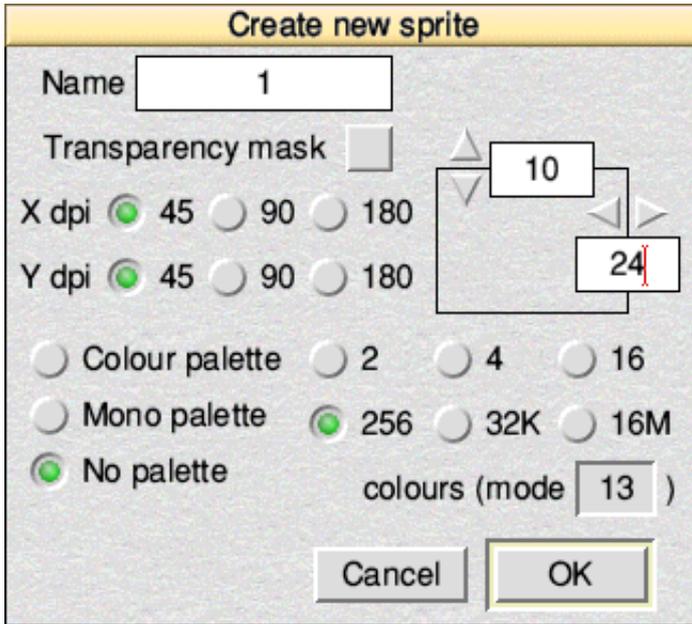
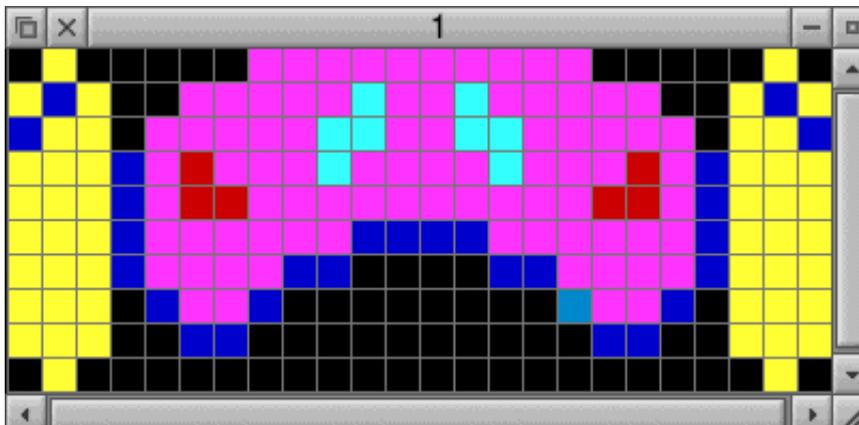
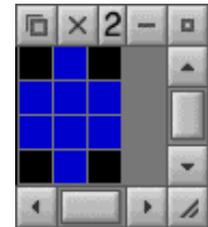
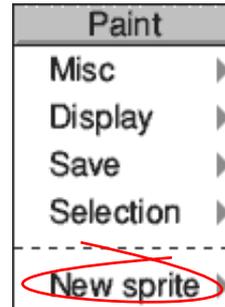


Figure 1.

Select click on Paint's iconbar icon
 For the first sprite, Name="1"
 No Transparency mask, X dpi=45 Ydpi=45
 Height=10 Width=24
 256 colours (mode 13)

For second and subsequent sprite ("2" to "7")
 Click menu > new sprite > (details as before)



Mode 13 colours:
 (There are 256 to choose from,
 below is a guide)

Black=0

Red=20

Green=99

Yellow=119

Dark Blue=136

Pink=159

Light Blue=235

Introduction to Unicode

Traditionally in computing we have used Ascii codes to display letters and symbols: one byte or eight bits holds the data for letters and punctuation marks we use to type our emails, issue *commands to the computer and write our Basic programs.

The trouble is that one byte can only cater for 256 different symbols. And strictly speaking Ascii characters aren't the full 256 symbols at all, just the 95 printable ones between CHR\$32 and CHR\$126.

This is sufficient for the English language but with the advent of the internet more of the world's languages had to be displayed on web pages.

Consider the Chinese language: according to the BBC an educated China person knows over 8,000 symbols (or "logograms" as they are called). So Ascii characters are clearly not up to the job. An international standard was needed. The Unicode Consortium was set up, a non profit making organisation, to specify how text should be represented in modern computing.

Instead of one byte per symbol, two – or even three bytes – are used, i.e. up to 24 bits per symbol. This gives about 17 million permutations.

Now, even that astronomical number doesn't mean that every single letter in every single language on the globe can be represented. But it's a vast improvement on the original 95 characters.

What does this mean for us? Well, the thing is we don't (as yet) have a standardised method of dealing with Unicode on RISC OS. Some modern applications like Netsurf are capable of showing Unicode characters. Visit a Unicode test page with Netsurf:

<http://www.ltg.ed.ac.uk/~richard/unicode-sample.html>

But try viewing the web page in !Edit, by pressing F8 or Menu > Page > View source... For the unconventional symbols on the web page Edit shows gobbledygook. In fact what Edit is doing is to represent each Unicode symbol with two or three top-bit-set Ascii characters.

So Edit is not capable of displaying Unicode. Or is it?

There is a *command on RISC OS to set the type of Ascii characters it displays. Open a task window (Ctrl+F12) and type

```
*alphabets
```

and press return. You will see something like:

```
Latin1 Latin2 Latin3 Latin4  
Cyrillic Greek Hebrew Latin5  
Welsh UTF8 Latin9 Latin6  
Latin7 Latin8 Latin10
```

This is a list of international alphabets which RISC OS understands. The command

```
*alphabet
```

(without the S) tells you which of the above 15 options the machine is currently set to. The computer should reply:

```
Latin1
```

The first step in getting Unicode is to select UTF-8 with:

```
*alphabet utf8
```

Close down the previous Edit window on the source code of the web page and press F8 again to open another one. The second step is to change Edit's font to a Unicode one. Fortunately a couple are installed on your Raspberry Pi, called DejaVu. Click menu > Display > Font > DejaVuSans > Mono.

Using CineWorks Part 2

The purpose of this second tutorial is to show how to join an opening title and two segments of video into a single movie, apply transition effects between the segments, and also fade the audio track up and down.

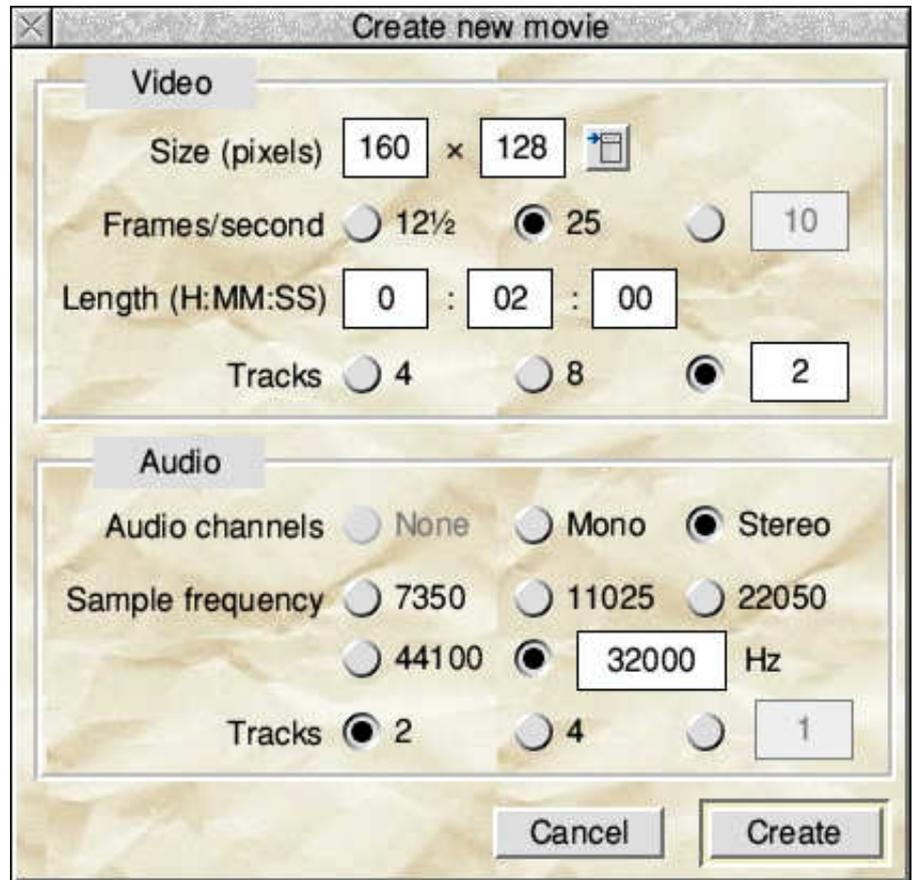
The two movie segments we are going to join together are the trimmed Goldfinches segment from Part One of this tutorial, and the Blue Tit segment, which can be downloaded from <http://www.timil.com/riscos/>.

If you play either of these movies in ARPlayer, and click on the Info icon on the toolbar, you will see that the film size is 160 by 128 pixels, 16 bits per pixel, RGB at 25 frames per second. The audio has been sampled at 32 khz, stereo and saved at 16 bits per sample.

The first thing we want to do, therefore, is to create an opening **Title** in Paint with width 160 and height 128, and a suitable caption, such as 'Watch the Birdies.'

Now load CineWorks, Select-click on its icon, and fill in the Create new movie dialogue box with the values shown.

The first thing to do, is to drag the **Title** sprite onto the beginning of one of the video tracks, and drag the black clip handles at either end of the



clip, along the timeline, so that it will last for three seconds.

Now open the Libraries window, load the Blue Tit clip in, and drag its video icon onto the second video

track in CineWorks. Load its audio content onto an audio track, and drag them both along the timeline, so that they are lined up with the end of the Title graphic.

GPIO for Beginners

One of the exciting features of the Raspberry Pi is the GPIO (General Purpose Input Output) port, enabling you to connect your RISC OS machine to the outside world with gadgets you can make yourself.

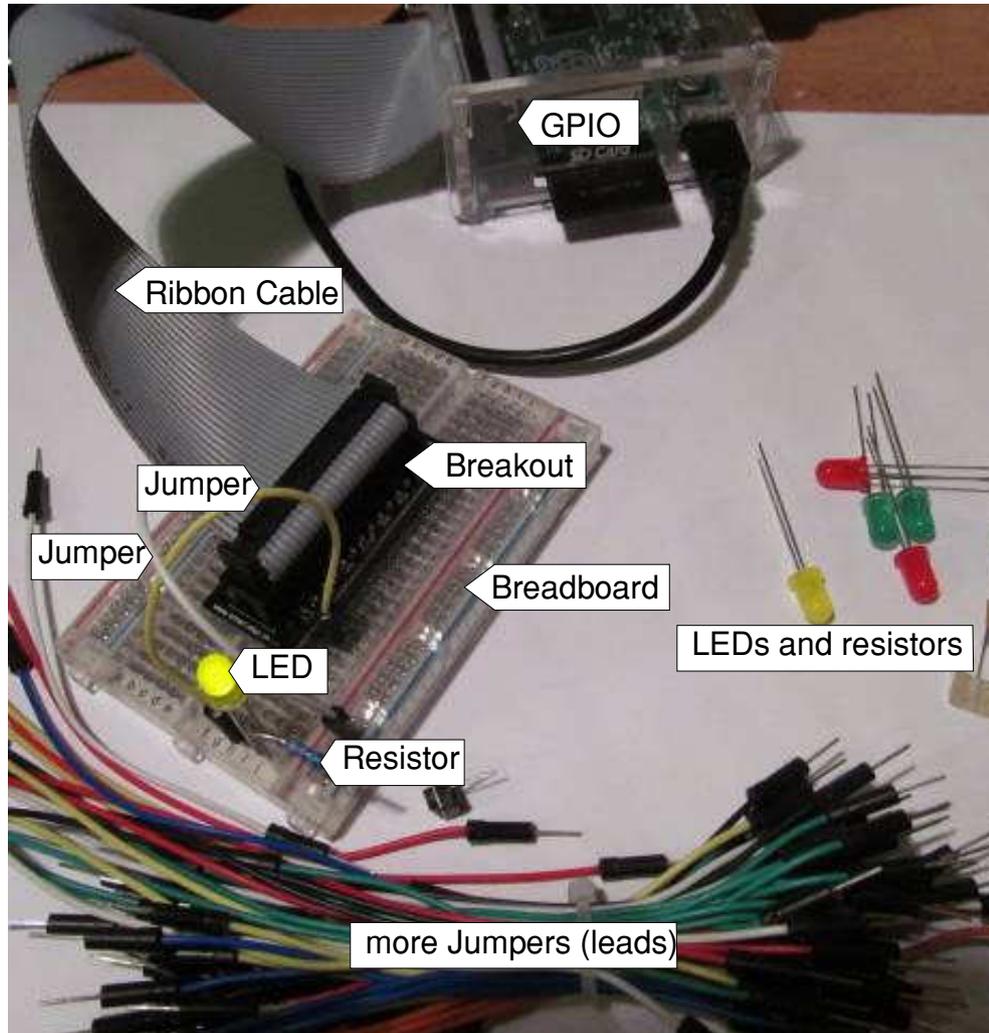
If the very thought of micro electronics makes you cringe then don't worry. For a start you don't even need a soldering iron. Most electronics projects can be built using a **breadboard** (sometimes called a cobbler).

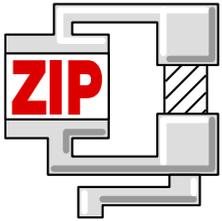
It's a rectangular slab of plastic which can be connected to the Pi's GPIO and has lots of holes in, into which you plug components like switches, LEDs and so forth.

Here I'll explain how to light up a single LED from your Pi. You don't even need to do any programming – we'll come to that next time!

A good starting point is the purchase of an inexpensive (under £10) starter kit, for example the GPIO Electronic Starter Kit from www.smart-elex.co.uk, illustrated in the photo on the right.

The kit consists of a breadboard, a **breakout**, ribbon cable, and components. The **breakout** is like an extension to the Pi's GPIO which saves wear and tear on your computer since you don't have to





Get Archiving with ZipFE

Here we explain how you can build your own archiving/dearchiving app on RISC OS, ZipFE, which is a free alternative to the commercial SparkFS.

Download the necessary components. They are rather inconveniently spread across several different websites:

ZipFE (the front end) from <http://www.thomas-milius.privat.t-online.de/English/Computer/>

InfoZip (the business end) <http://www.sbellon.de/archives/infozip.zip>

and finally Frontender (the magic which makes it all work) <http://homepage.ntlworld.com/the.watsons/frontender/>

Put them all in a temporary location such as your Ram disc:



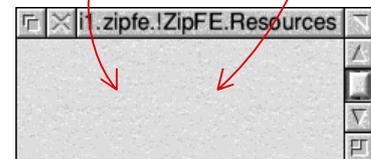
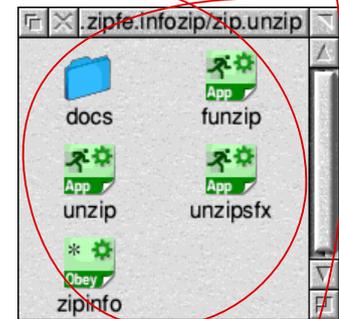
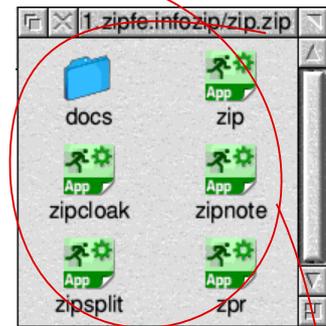
They are all in archive formats but all copies of RISC OS in the Raspberry Pi come with a read only copy of SparkFS so you can extract the files using SparkFS.

Decide on a suitable location on your hard disc to accommodate ZipFE, for example inside a folder called ZipFE. Extract !ZipFE to that location.

Double click infozip/zip. You will see two folders called unzip and zip. Now, DO NOT copy these folders as they are. Instead double click on each of them and copy their *contents* to !ZipFE.Resources (see right).

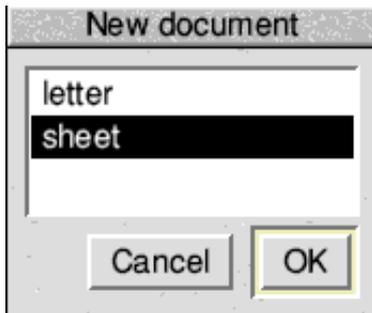
Extract !FEer from its archive frontender2-0-5/zip. Put in the same folder as !ZipFE.

Now double click on !ZipFE to install it on the icon bar.



Using Fireworkz Part 3

In the last two instalments we looked at using the word processing (letter) part of Fireworkz. This time we move onto the spreadsheet part. When you select click on the icon bar icon choose the sheet option and click OK.



The standard spreadsheet type window appears, with the cells occupying the main area, row numbers down the left hand side, column letters across, and a toolbar at the top.

Fireworkz starts in print view. If you are not printing then it's a good idea to switch this off by choosing Page > Paper... > None.

Click on the cell to highlight it with a grey box. As is the case in any other spreadsheet package, pressing return moves down a cell, tab across to the next cell, double clicking on any text in a cell highlights it for deletion or overtyping.

UK Rainfall (mm) since 2000 Source: www.metoffice.gov.uk

Year	Winter	Spring	Summer	Autumn
2000	417.7	262.4	197.0	497.8
2001	329.1	218.6	236.9	350.4
2002	381.1	245.6	259.3	358.9
2003	272.5	202.5	176.5	239.8
2004	348.9	214.6	315.6	345.1
2005	309.5	237.3	217.2	352.7
2006	206.5	291.2	188.3	400.6
2007	437.9	230.0	357.8	233.8
2008	386.3	246.6	320.2	368.4
2009	268.0	221.7	323.0	387.7
2010	255.4	166.4	243.8	338.3
2011	264.9	188.2	266.9	331.9
2012	339.0	230.8	379.2	374.6
2013	345.8	216.9		

Figure 1.

The difference with Fireworkz is that when you start to type in completely blank cells your typing appears in the formula bar and not in the cell. Pressing tab jumps to the next cell on the right but pressing return puts caret appears in the cell at the end of what you typed.

You have to press return again to jump to the cell underneath.

We are going to create a spreadsheet of UK rainfall since 2000, see figure 1. Type in the

headings in cells a1 to e1 and add a further heading called "Total" in cell f1. Then type in the numbers in cells a2 to e15. When we talk about a range of cells we quote the top left and bottom right cells (**a2e15** in this case).

It's quicker in Fireworkz to enter the data by tabbing across the rows because to move to the row underneath you have to press return twice.

Desktop makeover with Themes

Your RISC OS Pi is equipped with several 'Themes' which govern the appearance of things like the hard disc icon on the icon bar, the Taskmanager icon and the various filer icons used for text files etc. One of the great things about RISC OS is that they are all customisable.

Open **!Boot.Choices.Boot**.

Predesk. If you want to open any application directory e.g. !Boot without running it you must hold down the shift key whilst double clicking.

Look for a file called

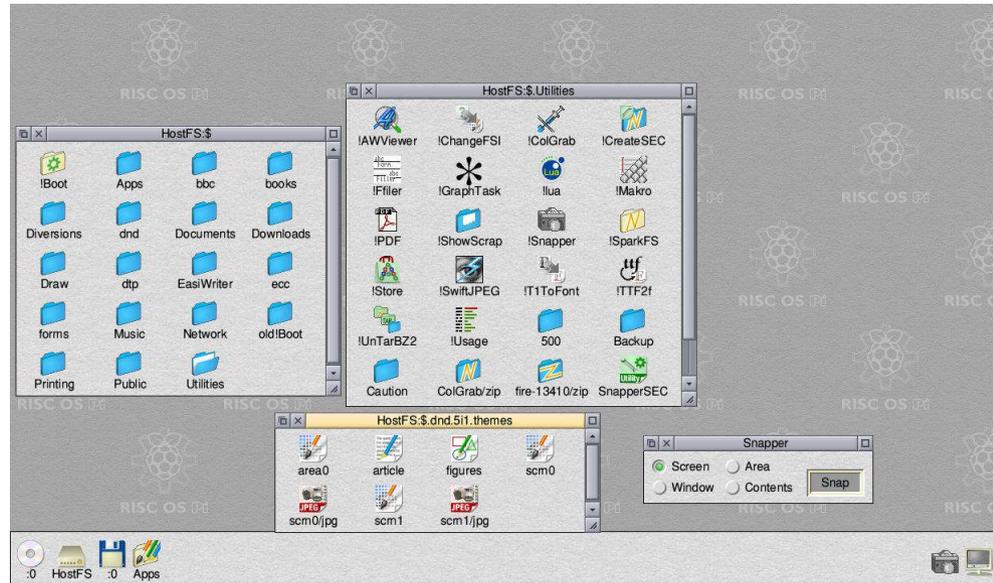
ThemeSetup. If it isn't there you need to create it: load Edit, click menu over its iconbar icon > Create > Obey. It's a one line Obey file:

```
Set Wimp$IconTheme Raspberry.
```

Do not forget the trailing full stop!

It tells the machine to use the 'Raspberry' theme. To see the other themes available, look in **!Boot.Resources. !ThemeDefs.Themes.**

On my Pi there are five sets: Lyonix (for the 2000s look), Morris4 (for that vintage RiscPC feel), Raspberry, Sovereign (similar to Lyonix) and Ursula (as used in RISC OS 4). Substitute any of these names in your **ThemeSetup** file, save it and reboot your Pi.



The modern Raspberry Pi look

You can redesign any or all parts of the desktop furniture. As a starting point, make a copy of the Raspberry theme by clicking menu over **!ThemeDefs.Themes.Raspberry** then choosing Dir 'Raspberry' > Copy > **MyTheme** then press Return.

Look on the internet for ready made themes, e.g. www.riscos.org/resources/dacha/1-vis-o.htm.



Your favourite magazine as the Taskmanager icon...

SPRITES

PART 7

If you've been following the series so far you will know that our sprite data consists of DATA lines in BBC Basic where each digit represents a pixel and the setup procedure converts and pokes them into memory.

I chose this method because it works on 8-bit and 32-bit machines and you can easily alter the colour scheme of the sprite.

On RISC OS you can also use the built-in desktop Paint application to design your sprites and save them as spritefiles.

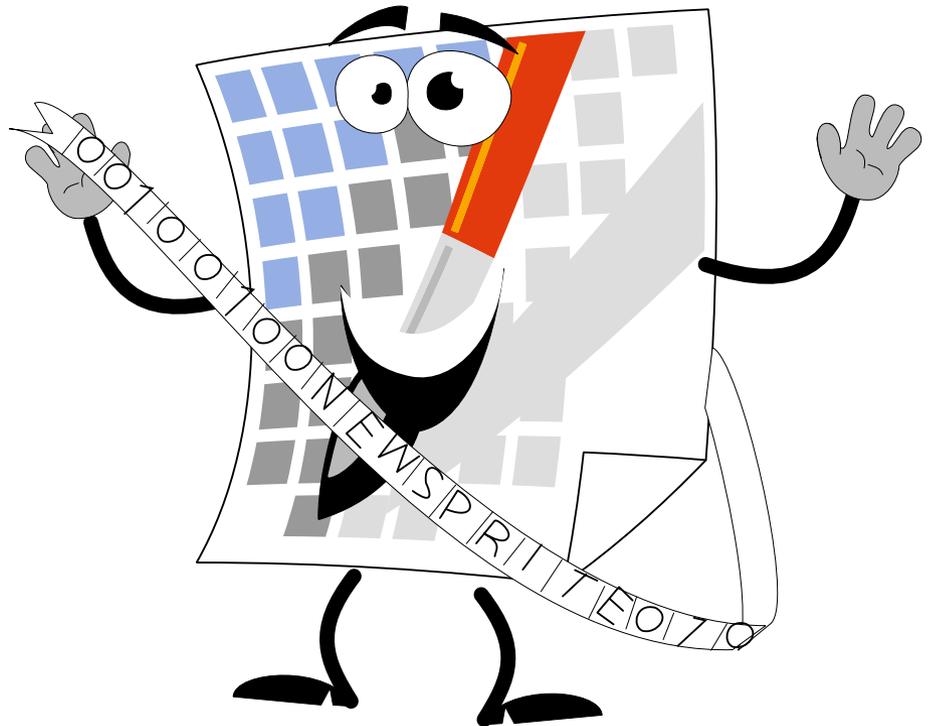
There are operating system routines to plot sprites in the spritefile but they are relatively slow quite wasteful of memory.

This time we'll be examining the structure of sprite files and I'll present a utility to extract the data to be used with our own programs.

BBC Micro and Electron owners will have to sit out on this one because there are no such sprite facilities on 8 bit machines. To make it up to you I'll present a sprite designer in the next issue of *Drag 'N Drop*.

A spritefile is in essence a header followed by a series of control blocks plus sprite data for each sprite in the file.

Figure 1 shows an example dump of a sprite file consisting of two Mode 13 sprites. It was obtained by opening a task window and



issuing the following star command:

```
*dump<fsp>
```

where <fsp> is the name of the spritefile. Annotations were added in Draw.

There is a lot of information in fig.1 so we will take each in turn with an exploded view of the three sections represented by the green, yellow and red numbered circles.

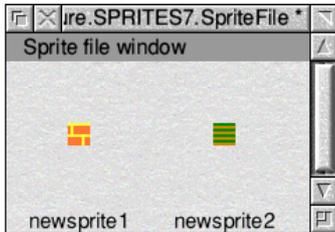
Figure 1. Example sprite file, two 8x8 sprites in Mode 13

```

Address : 00 01 02 03 | 04 05 06 07 | 08 09 0A 0B | 0C 0D 0E 0F | 10 11 12 13 | 14 15 16 17 | 18 19 1A 1B | 1C 1D 1E 1F : ASCII data
00000000 : 02 00 00 00 | 10 00 00 00 | E0 00 00 00 | 60 00 00 00 | 15 77 73 | 22 69 74 | 31 00 00 | 04 00 00 00 : .....è...l...newsprite1...
00000020 : 07 00 00 00 | 06 00 00 00 | 1F 00 00 00 | 2C 00 00 00 | 2C 00 00 00 | 0D 00 00 00 | 77 77 77 77 | 77 77 77 77 : .....wwwwww
00000040 : 37 77 37 37 | 37 37 37 37 | 37 77 37 37 | 37 37 37 37 | 37 37 37 37 | 37 77 37 37 | 37 37 37 37 | 77 77 77 77 : 7w777777w777777w777777wwwwww
00000060 : 37 37 37 37 | 37 77 37 37 | 37 37 37 37 | 37 77 37 37 | 37 37 37 37 | 37 77 37 37 | 60 00 00 00 | 6E 65 77 73 : 77777w777777w777777w771...ne
00000080 : 70 72 69 74 | 65 32 00 00 | 01 00 00 00 | 07 00 00 00 | 00 00 00 00 | 1F 00 00 00 | 2C 00 00 00 | 2C 00 00 00 : prite2.....
000000A0 : 0D 00 00 00 | 40 40 40 40 | 40 40 40 40 | 54 54 54 54 | 54 54 54 54 | 40 40 40 40 | 40 40 40 40 | 54 54 54 54 : ...@@@@@TTTTTTT@@@@@T
000000C0 : 54 54 54 54 | 40 40 40 40 | 40 40 40 40 | 54 54 54 54 | 54 54 54 54 | 40 40 40 40 | 40 40 40 40 | 54 54 54 54 : TTTT@@@@@TTTTTTT@@@@@T
000000E0 : 54 54 54 54 | | | | | | | | | : TTTT
  
```

Spritefile Header

- 0 Word 0 Number of sprites
- 1 Word 1 Offset to first sprite
- 2 Word 2 Size of sprite file in bytes (+4)



Sprite control block

- 0 Word 0 Offset to next sprite
- 1 Word 1 Sprite name
- 2 Word 2 Sprite name
- 3 Word 3 Sprite name
- 4 Word 4 Sprite width in words -1
- 5 Word 5 Sprite depth in scanlines
- 6 Word 6 L.H. edge
- 7 Word 7 R.H. edge
- 8 Word 8 Offset to shape data
- 9 Word 9 Offset to mask data
- 10 Word 10 Sprite Mode

example sprite 1

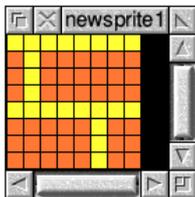
&6C (&C + &6C = &78 next sprite)
 "news"
 "prit"
 "e1.."
 1
 7
 0
 31
 &2C (&C + &2C = &38)
 &2C
 13

example sprite 2

&6C (&78 + &6C = &E4)
 "news"
 "prit"
 "e2.."
 1
 7
 0
 31
 &2C (&78 + &2C = &A4)
 &2C
 13

Sprite data

- 0 Word 0 Sprite Data



Community Contacts

Developers & Publishers

Please note: we list here developers supporting RISC OS 5.

Archive www.archivemag.co.uk

CJE Micros www.cjemicros.co.uk

Datawave www.datawave.nl

David Pilling Software
www.davidpilling.net/riscos.html

Electronic Font Foundry thefonts.com

MW Software www.mw-software.com

Orpheus Internet
www.orpheusinternet.co.uk

Organizer www.organizerpim.co.uk

PiLearn www.pilearn.com

R Comp www.rcomp.co.uk

RISC OS Code www.riscoscode.com

RISC OS Open Ltd
www.riscosopen.org

Webwonder/ProCad
www.zynet.co.uk/dsnell/Welcome.html

User Groups

HHRUG (Hemel Hempstead RISC OS user Group)
Area: Hemel Hempstead
Meets every 3rd Wednesday of the month
£3.50 per evening (£3.00 if paid 3 months in advance)
www.hhrug.org/

ICENI
Area: Ipswich
Meets every 1st Wednesday of the month
Visitors free for the first time
www.icenicomputerclub.org.uk

LAUG (Liverpool Acorn User Group)
Area: Liverpool
Meets every second Tuesday of the month
Free entry
www.orpheusweb.co.uk/bob.williams/laug/index.htm

ROUGOL (RISC OS User Group of London)
Area: London
Meets every third Monday of the month
Free entry
<http://rougol.jellybaby.net>

RONWUG (RISC OS North West User Group)
Area: North West
Meets 3rd Weds every month
Free admission
www.ronwug.org

SASAUG (Surrey and Sussex Acorn Users Group)
Area: Surrey and Sussex
Meets every second Monday of the month
£1.50 per meeting for members
www.sasaug.org.uk

WROCC (Wakefield RISCOS Computer Club)
Area: Wakefield
Meets First Wednesday of the month
£2 for non members
www.wrocc.org.uk/



Are your RISC OS club details up to date? If not please let us know!

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CD'12



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