The magazine for members of

Eureka

The ARM Club

VirtualA5000
Acorn on a PC

Getting on the Internet with RISC OS and Linux

Fill your own Phoebe case

Designer from Cerilica

Issue 42 — Summer 2002

Free Membership And More

As you may have seen from the late announcement slipped into our last issue, we are now rewarding all contributors to Eureka with a free extension to their membership.

The details have now been decided by the Club's Committee. Starting with our first issue of the year (Spring 2002) every contribution in Eureka will earn the writer three months' extension of their membership. That means our regular contributors will virtually have free life membership from now on as we won't be too strict about an odd issue missed or if we have to hold over a contribution when space is scarce.

There's a little extra bonus too. Every contributor will be offered a £5 discount from any item of Club software for each contribution they make. Obviously, the Club's range of software is not wide enough for anyone to want to take advantage of that for every issue but the discount will be there any time it is needed.

That will make DiscKnight — that essential item of software that everyone should have — an even bigger bargain than it is already!

Are you interested? If so what can you contribute?

First of all, don't worry if you have never had anything published before. It's part of the Editor's job to provide any help or advice you may need and to give the article a final polish if necessary.

At present, we still need someone to help us bring back the once regular Site Seeing look at the internet. For this you would just browse through whichever net pages caught your interest and, every three months, send in an article about them and continue your free membership.

Or perhaps you have a better idea for either a series or just a one-off article you can do.

Peter Jennings

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You're in the (Monopoly) money with one of the games featured in ARM Arena this issue.

Notice

Please note that, because of frequent delivery failures by the Post Office, we have had to discontinue the Club's freepost address which we used for many years.

If you write, please address your letter to
The ARM Club
Merton Court
38 Knoll Road
Sidcup
Kent
DA14 4QU

Or, better still, for prompt delivery and reply you can email any general queries to info@armclub.org.uk or use any of the other email addresses shown every issue in Club Contacts on page 80.

Living With A PC: Virtual Acorn

Matthew Cook tries out the software that gives you an Acorn on your Windows PC and finds it a useful accessory in the wait for new RISC OS hardware.

Among a mist of controversy Virtual Acorn (A 3QD Company) brings, in my opinion, probably the most important development in the RISC OS community for the last couple of years.

Virtual A5000 is the first product coming under the Virtual Acorn umbrella, bringing a supported RISC OS 3.11 emulator to the Windows environment for RISC OS enthusiasts and new users alike.

Its predecessor was Red Squirrel, a freeware RISC OS emulator released in 2001 by Graeme Barnes. Red Squirrel was met with a mixed reception, especially when people realised this was able to run RISC OS 4 (although this is against the licensing terms of RISCOS Ltd). These discussions still remain active on UseNET and in other public forums.

At The RISC OS 2001 Show Aaron Timbrell was selling a RISC OS Emulators CD ROM containing a collection of RISC OS emulators for Windows PCs. This excellent compilation CD not only contained the emulator software but instructions on how to configure and get the best out of the emulators included. There was much public interest and throughout the show a crowd was constantly gathered around a Windows PC demonstrating the software.

During the show I took the opportunity to investigate the developments. Red Squirrel was being run on a Pentium 4 PC running Windows XP and it proved quite reliable. Performance seemed similar to an ARM 610 machine, although that was just my personal opinion without having the opportunity for benchmarking.

By the end of the first day Aaron had sold out of the CD- ROMs.

I took the opportunity to test Red Squirrel on my Sony VAIO laptop, a Pentium III machine running at 650MHz with 256MB of RAM. I was very impressed with the performance after getting some advice on tweaking the emulator and the Windows operating system. Red Squirrel has proved very useful for supporting DiscKnight and other Club products when taking technical support calls while away from a desktop RISC OS machine.

I was very pleased when Virtual Acorn announced the release of Virtual A5000 in November 2001. My Acorn A4 is getting very tired as a laptop and I wanted to keep it as a working piece of my Acorn Computers collection.

I can now reliably run RISC OS 3.11 on my laptop in 1024x768 with 16MB of memory. Portable RISC OS Computing is now again a viable option for me.

During this review I have tested Virtual A5000 on various combinations of PC hardware; firstly my Sony VAIO laptop, Pentium III 650Mhz, 256MB of RAM, NeoMagic 6MB Graphics card, running Windows 2000, Windows XP and Red Hat Linux 7.1 (Running WINE). I also tested Virtual A5000 on two Windows desktop PCs running Windows 2000, one with an ATI Rage Pro 32MB graphics card and another with an Nvida Riva TNT II.

You may have guessed two of the most important requirements for running Virtual A5000 are processor speed and graphics card performance.

The Virtual A5000 team recommend:

• 300Mhz Pentium/Celeron processor.
• Windows 98 or later with Direct X V8.0
• 32MB of RAM.
• 500MB of free hard drive space.
• Not essential: three button mouse (almost all scroll mice have three buttons).
• 4MB Graphics card with hardware 2D acceleration and DirectX support.

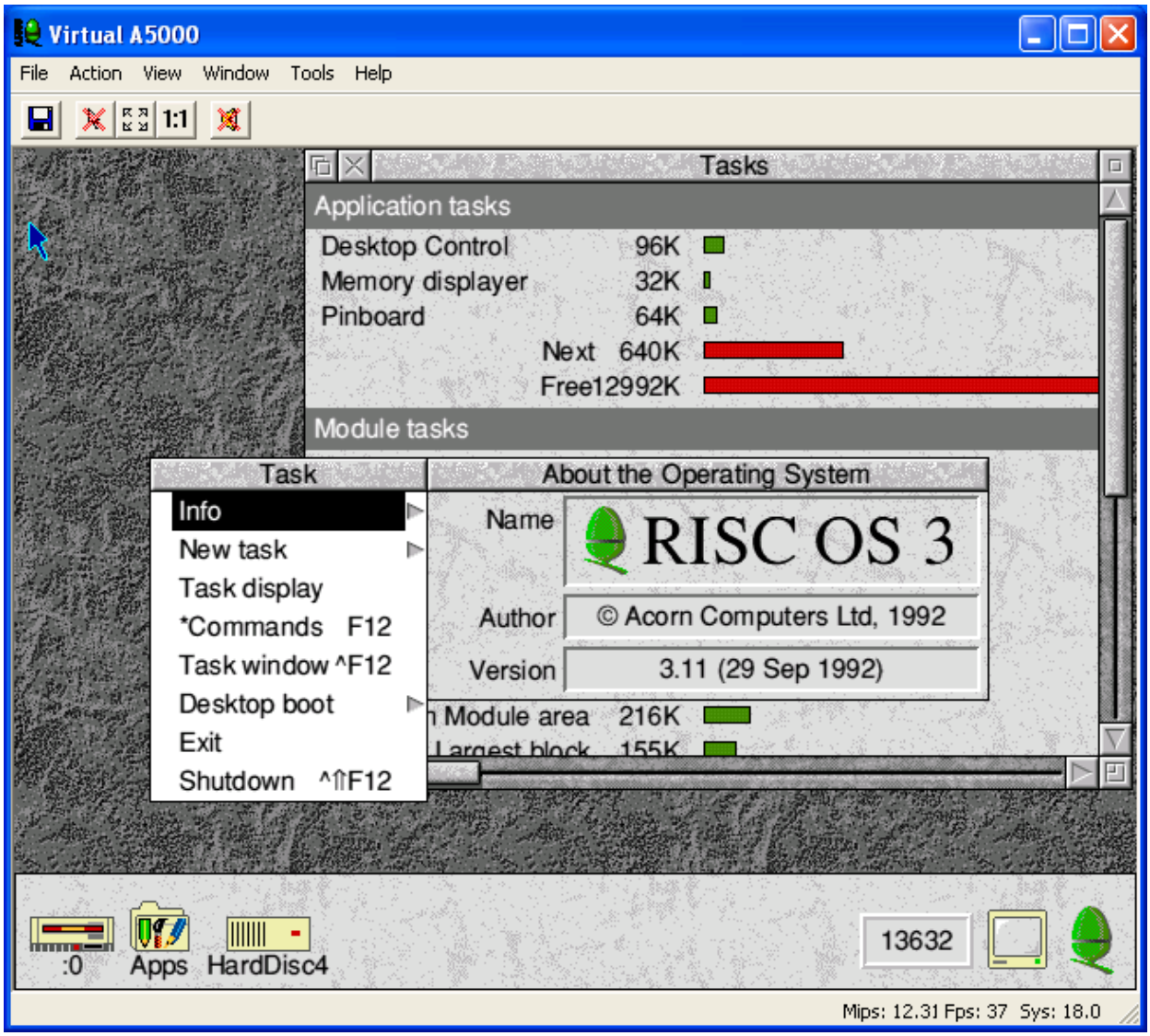
I would suggest to get good performance out of the software, you will want to run with a Pentium III 500MHz or above, the best graphics card you can afford and the latest version of Direct X.

One of the most grumbled about problems facing Windows PC owners is software management. There is not the friendly dragging of applications off CD-ROM and placing them in a neat hierarchy on your hard disc. Windows software generally comes with an installer, waiting to scatter *.dll* files all over your hard disc. Virtual A5000's installer was a pleasant surprise.

As with all new Windows PC software, I used a package that analyses the installer process. The Virtual A5000 installer cleanly placed the application on my hard disc where I asked it, worked first time and helpfully placed an icon on my desktop. Furthermore it repeatedly installed in this tidy fashion on the other test machines.

Running Virtual A5000 brought the machine into full screen mode with the friendly RISC OS 16384K banner in the top left corner. However at this point my laptop crawled and took two minutes to reach the desktop. Drawing on my experience from Red Squirrel, I restarted into the windowed mode — you can toggle between both modes of operation with ALT + Enter — the desktop was then reached in a little over 20 seconds. The important point to note is when using Virtual Acorn with a less powerful graphics card is to match the screen resolution on your Windows desktop, with the settings in Virtual Acorn.

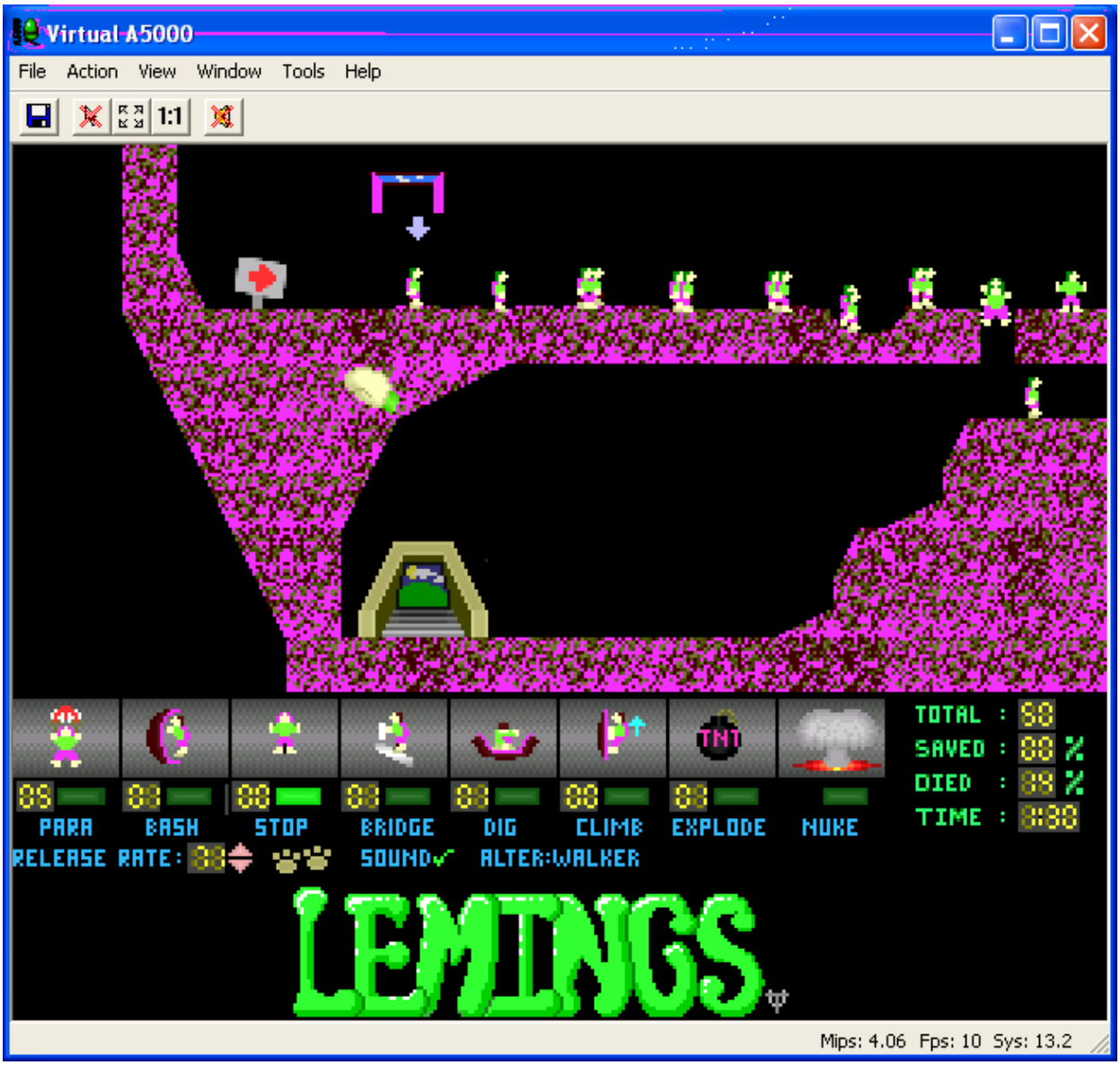
Operation is then identical to a normal RISC OS machine with one exception: I had only two mouse



Virtual Acorn runs Risc OS 3.11 and you can configure it to have much more memory than an Acorn A4

buttons. All was not lost; I reconfigured the second mouse button as *Menu* and the windows key as *Adjust.*

HostFS is the filing system equivalent of ADFS and stores your RISC OS applications on your PC hard disc with a great improvement in speed. UDMA 100 hard discs really speed up hard disc intensive operations. Bundled with Virtual A5000 is a host of applications: Ovation, DrawWorks Millennium, Mr Clippy and many other public domain, freeware and shareware programs such as Impression Junior, DIY Doom and Lemings.



Virtual Acorn runs your favorite games, any one for a game of Lemings (Lemmings clone) included in the Virtual Acorn package?

Another great improvement is four times the memory of my A4. Multitasking many applications is now no problem. I can run DataPower for the Club's database, demonstrate DiscKnight and have a web browser open showing the PD CD contents with no problems.

One of the first issues I faced was getting my beloved Acorn software across onto my Windows PC but this was achieved very easily using some common RISC OS applications.

First I archived everything I needed using Mark Smith's excellent ArcFS r/w although I could have used David Pilling's equally good SparkFS. To copy the files onto the Windows PC I used WSS LanMAN '98 to mount a directory from my laptop onto the RISC OS desktop.

After dropping the files into the HostFS directory on the PC I started Virtual A5000 and then opened the archives with the read-only version of ArcFS that comes with Virtual A5000. Everything proceeded to work as it did on my Risc PC, only slower than my Risc PC but faster than my Acorn A4.

Virtual A5000 is still in development, so what does the product currently provide and what is in being developed?

Printing is supported, as long as the printer connected to your Windows PC has an equivalent Printer Definition File for !Printers.

Virtual A5000 does not support native file access, although you can use ArcImg (supplied) to create filecore disc images.

Virtual A5000 sound seems a bit sketchy. In the vast majority of cases applications with speech or music work correctly but once in a while an application will cause Virtual A5000 to screech in annoying fashion.

As of the 16th April, information has been provided on the Virtual A5000 website with details of how one would access DOS formatted file systems, CD ROMS, DOS floppies and network mounts using Virtual A5000. This has even made possible CD writing using Packet CD technology. The information states that this has only been tested on CeQuadrat PacketCD and Roxio. I tried to use Easy CD Creator 5 to achieve a similar goal but ran into problems reading the CDs after they were written. I am sure these issues will get ironed out at a later date.

Virtual A5000 is an impressive piece of software. I frequently run it on my laptop at 1024x768 in full screen mode and it is certainly an improvement over my Acorn A4. However, worries have been aired over sales of RISC OS machines possibly being damaged by Virtual A5000.

I have supported Acorn as a company, buying new machines as they were released; my first new machine was an Acorn A3010 the last a new J233 Risc PC.

By purchasing these machines new I could offer my support to both the Acorn community and the local dealers. We have not seen any new hardware available to purchase that will replace the Acorn A4 or the flagship Risc PC. Until this hardware materialises I cannot see how this product can damage the market, only enhance it.

Virtual A5000 can prolong the RISC OS market by providing portable RISC OS computing with some much needed enhancements. Virtual A5000 will never be a substitute for a desktop RISC PC but it is not intended to be.

I can see Virtual A5000 being purchased by many schools that have been forced to take the PC route for their ICT needs. For £145 you can have a room of 10 RISC OS compatible machines as well as your Windows computers. All the software purchased with site licences over the years need not go to waste.

CD-ROMs such as the Vikings and other multimedia titles can be continued to be used. The history of the Vikings has not changed, therefore why does one need to invest in further expensive software at a time where money is something the education sector doesn't have.

In summary Virtual A5000 seems a bargain and is a breath of new life in the RISC OS community. I, like many of you, await new hardware. Until it appears I applaud the Virtual Acorn team for their hard work and foresight.

VirtualA5000
Price: £29 + £1.50 post/packing
Site licence: £145
Supplier: Virtual Acorn
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Bracknell
Berks
RG12 8ZH
Tel: 01344 452868
Email: info@virtualacorn.co.uk
Web: www.virtualacorn.co.uk/

The Midlands 2002 RISC OS Show

Saturday 30th November

The National Motorcycle Museum
Solihull, Nr Birmingham

Time: 10am to 4.30pm

Entrance Fee: Adults £3, ARM Club members £2
Children Under 14 (accompanied by an adult) Free

The Midlands RISC OS Show is making its sixth appearance at Birmingham's prestigious National Motorcycle Museum on Saturday November 30th this year. Most of the big names in the RISC OS world are expected to be exhibiting with the usual mass of heavily discounted pre-Christmas bargains. The full list of exhibitors isn't yet known but in previous years there have been more than 40, with some completely sold out by early afternoon.

The venue, located at Junction 6 of the M42 (just opposite the NEC, National Exhibition Centre) is easily accessible from all parts of the country via the motorway network, being less than two hours from London, Taunton, Cardiff, Lancaster, Leeds or Bury St Edmunds. The Birmingham International rail station is less than ten minutes away, with a free coach service to and from the National Motorcycle Museum laid on. Birmingham International Airport is also less than ten minutes away and you can catch the monorail to the train station to use the free bus service from there.

For more information contact Ralph Sillett **Tel: 01785 714535**
Email: ralph@armclub.org.uk. **midlandshow@armclub.org.uk**

The Show is organised by The ARM Club

Insignia

Christopher Jarman looks at the new bitmap program from Cerilica which offers a set of tools to brighten up your text titles with a range of colourful effects.

The product is intended to make decorated text titles as easy to construct as possible. It comes on two floppy discs, one for the application and the other for the *.pdf* manual. Like most people, I had a go before reading the manual and the principles appeared to be fairly straightforward.

The main point to be made is that Insignia is a bitmap program, whereas most previous text manipulating programs have been vector. If you are after *.png* web files then this is very suitable. It will also save out in *.jpeg* and sprite files. The size is produced at 90dpi which is fine for most purposes.

For printing out on paper or sending to, say, a magazine, then it would be advisable to create your output file at around 300dpi.

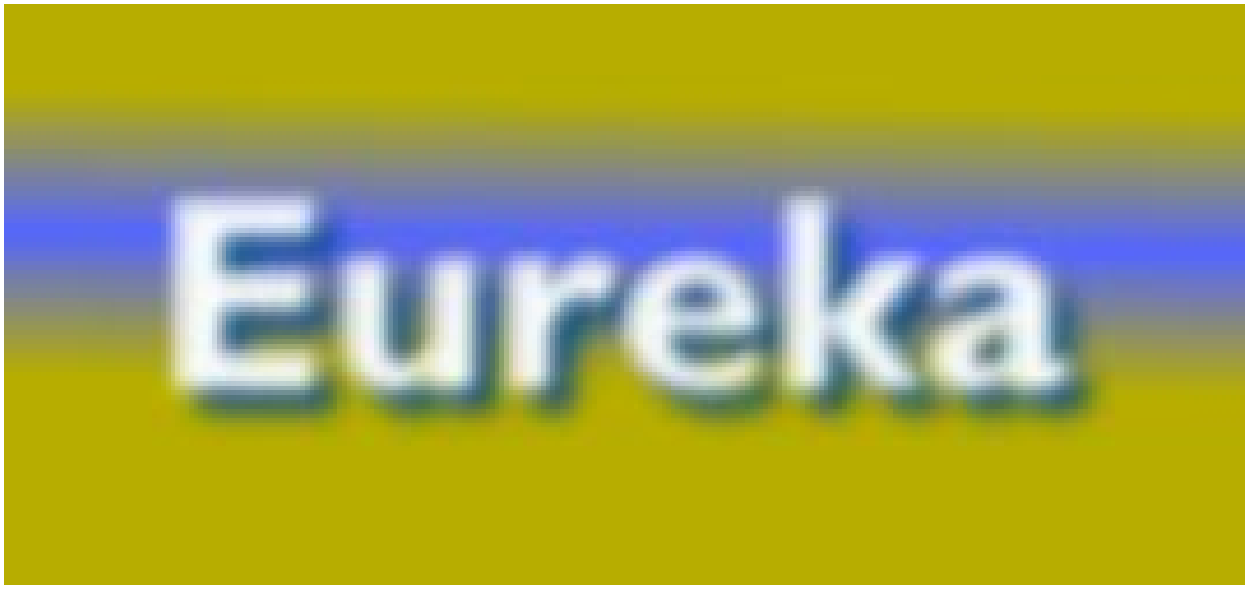
Use of the Text tool with vortex effect

Basic tools

There are seven basic tools with icons shown at the top of the main window.

They are:

- ***Text.***
- ***Shape*** (with Star option).
- ***Colour*** (with radial or linear fill).
- ***Background.***
- ***Effect*** (blur, halftone, ripple, vortex and pixelise).
- ***Shadow*** (opacity, blur, relative size,



Eureka gets the text, shadow and colour tools look

colour and offset).

• ***After Effect*** (spangle, snowfall and lens flare).

When clicking onto the tool buttons a window appears with the writable icons to fill in regarding the font, size, colours etc. which apply to the tool. It is possible to create your text as an arc or a star and to change the size and number of points and so on.

The colour tool allows the background or the text to be chosen and a small spot mark, which can be dragged, will determine the centre of any fill that you choose.

Different results can be selected such as ripple and vortex or shadows. These are all infinitely variable. Sparkles or highlights can also be added as after effects.

Web and DTP

The intention seems to be to provide a tool, which will enable some unusual texts to be produced for web pages as well as DTP use. It is easier to carry out these various functions than to describe them.

However, the interface is old fashioned by today's standards, and in 2002, I would expect the whole process to be more intuitive, with the facility to drag and drop rather than to have to enter numbers into writable icons.

Flare is used to simulate a photographic lens effect

A text line with a horizontal streak helps the Sassoon Primary Bold font to harmonise with the background's sugary theme

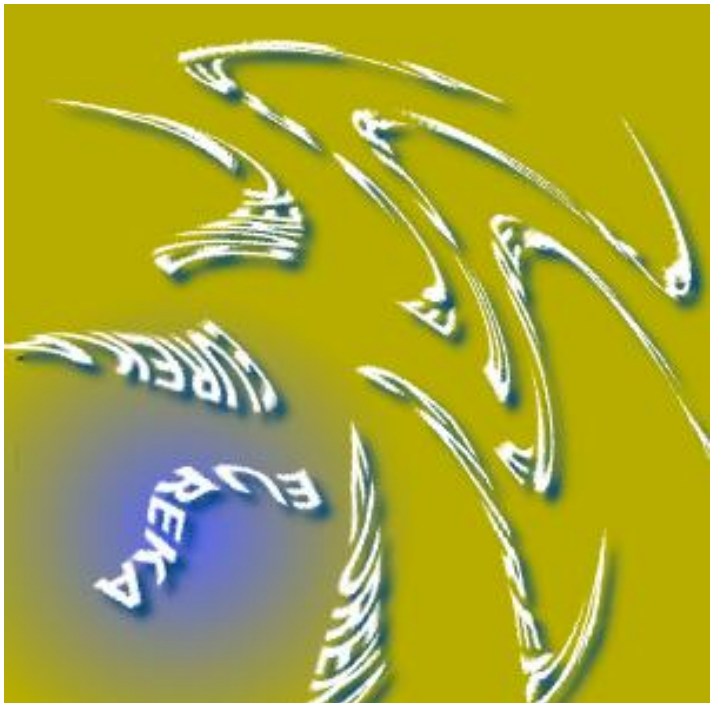
Homerton gets a tin roof texture produced by using the ripple effect

Text manipulating programs such as those produced by Xara or Ulead for the PC are far easier to use. Also, if you want to make a file larger than the default size, the rendering takes a long time, even on a Risc PC with RISC OS 4.

However, Insignia grows on you as you become more familiar with it and it certainly 'does what it says on the tin'.

Eureka gets star treatment with the Text, Shape, Shadow and Colour tools...

Take a look at Cerilica's examples on their website and be encouraged. They set a standard, which is hard to live up to without practice.



...and goes swirling in the vortex with Text, Shape and Shadow tools as well

Insignia
Price: £39 inclusive
Supplier: Cerilica Ltd
PO Box 40
Ross-on-Wye
Herefordshire
HR9 7WH
Tel: 0870 2411731
Email: cerilica@cerilica.com
Web: www.cerilica.com

Fitting Into A Phoebe

Douglas Blastland passes on his experience, and some additional advice, on fitting a Risc PC into a Phoebe case, following the tutorial on Nick Goodall's website.

Warning: This Conversion should not be performed by anyone who has no experience of working with electronic and metalwork.

As some of this conversion will require cutting the back of the back plate and possibly the inside of the Phoebe case, you cannot afford to get this wrong.

There is no second chance. Mess up and you will have to purchase a new Phoebe case.

So you have been warned!

To complete this whole conversion you will need a couple of days and a fair amount of patience. You should first read Nick Goodall's Phoebe Tutorial on his website: www.nickgoodall.net. Following on from that you will then require the following additional items:

Shopping list

- 1 AT Power Supply Unit (PSU) from an old 386/486 PC.
- 1 UDMA 66 data ribbon cable suitable for a tower case.
- 1 Floppy drive data ribbon suitable for a tower case.
- 1 length of hard plastic tubing (approx ¼ inch diameter).
- Small self tapping screws.
- Small nuts and bolts (approx 1 - 1½ inch in length).
- Selection of heat shrink cable covers.
- A couple of plastic motherboard mounting clips (from an old PC).
- l small drill.
- 1 soldering iron.
- l pack of solder.
- 1 small cross head screw driver.
- 1 small straight head screw driver.
- 1 small hack saw.
- 1 small fine toothed file.
- l voltmeter.

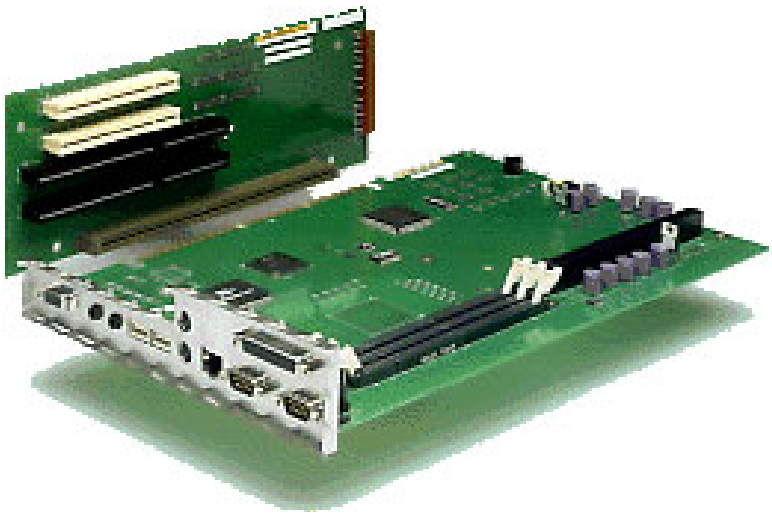
Power Supply Unit

The dream scheme which can be achieved with care

In Nick Goodall's tutorial, it is advised that the power on/off switch from the Risc PC PSU be used. Nick explains that this is due to not being able to obtain the relevant push on/push off, double pole/double throw type switch. The good news is that these switches can often be found on old AT PSUs which were fitted to many old 386/486 PCs. However, this is where you will need your volt meter.

Many modern switches do not turn off the power when switched off. What they actually do is go into a stand-by mode, hence there is some power going through the switch at all times.

On checking to see if you have found the right type of switch you do not need to put any power through the transformer/PSU. Set your meter up in a manner that will allow you to check for any breaks in the leads. You should now be able to check the flow of the current through the switch.



The motherboard, an NLX form factor board with riser board, as designed for use in Phoebe.

Follow Nick's guide very carefully to check the contacts on the switch in both the on and off modes. The wires to check are both the black and brown together and once you have checked the flow through these you should then check the white and blue wires. In the *off* position there should be no flow of current through any part of the switch. Be aware though that some very early PSUs may not use the same colours as modern ones. There shouldn't be a great deal of difference but do be aware of the wiring and check it very carefully before you decide to use the PSU.

Once you have the PSU with the relevant power on/off switch you need to decide which method you plan to use for the conversion. You have two options:

a) As the Risc PC has a very low power consumption, many old PSUs are able to supply sufficient power for your needs. This being the case, you can use the whole PSI! in your conversion. However, ensure that the PSU is fully working as a faulty unit can cause untold damage to your system.

b) Should you be running extra hardware and require the added power, then opt for a new PSU. If this is the choice you wish to make you will need to open the cases of both the PSUs. From the new PSU you will have to unsolder the leads which have the power switch connected. This will have to be replaced with the lead from the old PSU. Although many AT PSUs look very similar inside, make sure that you solder the right wires onto the right terminals. Get it wrong and you are sure to cause untold damage to your system. If you are not sure as to which wire goes where then

either leave well alone or seek the help of someone who does understand.

Open the PSU case

Whichever method you choose, you will still have to open the PSU case. This can be done by unscrewing approximately four small screws. Some of these screws may be covered by safety seals. Whether this is the old PSU or the new one that you are using you will now have to go back to Nick's instructions and trace the wires that you will not be needing on the motherboard plug. It is advisable to unsolder these from the small board in the PSU. If you don't wish to unsolder them you can very carefully cut these wires off as close as possible to the contacts on the board. Make sure that none of these can possibly touch each other in any way.

Now you must carefully put the PSU case back together, ensuring that the case sits properly and at no time do any of the wires become trapped. Some PSU cases have small lugs to assist with seating of the case. If your PSU has any of these make sure they are properly seated.

You now need to fit the Risc PC motherboard plug to your PSU. Nick suggested that you cut the wires and join them together using block wire connectors. The lead on the AT PSU is more than long enough for your needs, so there is no need to look at ways of gaining extra wire length. Remove the standard plug that is already fitted to your AT PSU. Cut this plug off as close as possible to the actual plug. When cutting the Risc PC motherboard plug from its PSU cut this off about half an inch from the plug. On each of the wires on the AT PSU slide a small heat shrink cable cover. Now very carefully follow Nick's guide as to which wires should be connected where. These wires should be soldered to the Risc PC plug, ensuring that not only have you got a good solid contact but that the soldering is clean and tidy. You then need to slide the heat shrink cable cover over the soldered joint and apply gentle heat. Don't use too much heat as this will melt the cable cover and possible damage the joint. You will note that this leaves quite a tidy finish.

While you still have the soldering iron out you may wish to look at the way

the LEDs are to be connected. Again instead of using block wire connectors you can solder the wires together and cover the joints with a small heat shrink cable cover. If you wish to have the conversion look really tidy you may wish to invest in a length of low voltage cable and fit this to the LED and the connectors that plug into the motherboard. Remember to place the heat shrink cable covers onto the wires before you solder them together. It is further advised that you check to ensure that the wires are connected correctly and that the LEDs work before you add any heat to the cable covers. Once these have shrunk they are very difficult to remove.

The Phoebe case

You will already have noticed that to position the motherboard the correct way round is not as simple as it seems. While trying to place the motherboard into the Phoebe case you will see that it is a very tight fit, which may prevent the motherboard from laying flat. There are a couple of ways you can approach this problem. Either way it will mean you will have to cut away part of the inside of the case.

Method A

If you look at the base of the Phoebe case you will notice that it is actually running flush with the outer side of the frame. This leaves very little room for expanding the motherboard outside the case. However, you can cut a long thin piece from this plate so as to allow the motherboard to lay flat or, if you wish to expand this way, you can remove the base plate, make up a couple of long strips of metal and place these along the base of the chassis.

The extra strips will allow you a bit more space to work with. Once you have created enough space you can then either rivet these into place, along with the base plate, or use small nuts and bolts. As the sides of the case will not cover any of these strips you insert along the edge you will need to make use of your metalwork skills to make them look tidy. The base plate is held in place with a series of rivets or spot welds. These can easily be drilled out and/or cut away with the hack saw.

Method B

This would involve creating the relevant space higher up in the

Phoebe case. Here you would need to cut a long thin section out of the frame work starting with the section where the PSU sits. Make sure the PSU is not in the case when cutting. This should not interfere with the PSU once it is back in the case. You can either cut along this plate while it is still in the case —although this may be rather difficult to get to —or you can remove any rivets and/or welds, remove the plate and cut out the required section.

Once this section has been removed you can then fix it back into the case and either re-rivet it back in place or use small bolts and nuts.

Now you need to cut the back plate on the Phoebe case. Carefully place the motherboard into the Phoebe case with the back plane facing towards the expansion slots. Move the motherboard as close as possible to the back plane and position it so that none of the board is resting on the case. Carefully draw a pencil line along the top edge of the back plate. Remove the motherboard and put to one side in a safe place. You will now need to drill out any rivets and/or weld spots which hold the plate into the case. This should be removed as a whole unit.

You will note that part of this back plate is already missing. This is where Nick inserted the cables/leads on his finished system. This gap was designed for the rnotherboard on the original Phoebe, where all the relevant sockets would be in PC style.

You will now need very carefully to saw along the line you have drawn along the remainder of the back plate. Once this has been cut away you need to place this plate back into the case and either re-rivet it or use small bolts and nuts to secure this in place.

Any rough edges can now be tidied up with the small file.

Place the motherboard back into the Phoebe case and line the back plate of the motherboard up with the section of the back plane you have just removed. Move the rnotherboard as close as possible. You will notice a couple of small holes in the motherboard; one of which just behind the back plane which held the motherboard in place in the original Risc PC case. Carefully mark where

these holes line up, using either a pencil or pen. Once again, remove the motherboard from the Phoebe case and drill small holes where you made the marks.

You will now need to cut a couple of lengths of the hard plastic tubing. These should be approximately half an inch long. Put small bolts through the holes that you have just drilled and place a small piece of the cut plastic tubing over these. Now place the motherboard back into the Phoebe case, lining the holes up with the bolts and ensuring that the bolts sit through the holes in the motherboard. The motherboard can now be secured in place with small nuts on the bolts.

We now have to move back to the PSU on/off switch. There were two types of fastening on the early switches. The type of switch you are using will depend on the way this switch has to be mounted.

Switch A

This switch had a thread around the front of the switch and was held in place with a thin brass nut. If you have this type of switch you will find there is no hole on the case which would allow this to be fitted. Therefore you will have to make up a small bracket with a hole in the centre, where the switch will sit. This can then be held in place with the brass nut. On each side of the bracket you will have to drill a small hole. Line this up in the case behind the power button and drill a small hole that lines up with the holes on the bracket. Secure this in place with a couple of small self tapping screws.

You should be able to adjust the distance of the switch to the power button by using small spacer washers.

Switch B

This switch is the more modern type and has two small threaded holes on the front of it. I am not sure as to whether these holes line up with any on the case. The simplest way around this, should these holes not line up, is again to make a small bracket using these holes on the switch to mount the switch. A small hole then has to be drilled each side of the bracket and matching holes drilled into the case behind the power button. As with Switch A you can use small spacer washers to ensure that the switch has a tight fit behind the power button.

Now it is a simple case of putting the rest of the system together as explained in Nick's tutorial. Replace the ribbon from the hard drive with that of the UDMA 66 cable and replace the floppy drive data cable with the longer new cable you have. These can be easily threaded through the gaps in the case so to keep things tidy.

I mentioned earlier in the list of items required that you need a couple of plastic motherboard mounting clips. These can be used in place of some of the screws used to hold the motherboard in place.

You may find the following helpful:

The CD drive that is required for the Phoebe case is a slot loadable type. The original CD drive that was to be fitted to the Phoebe case was a Sony slot loadable CD drive Model number CDU571. It may prove to be very difficult to obtain one of these drives as the hardware market changes very quickly. However, if you want one you may be able to track it down on a specialist website or contact companies who specialise in end of line products.

I got around this problem by fitting a Pioneer slot loadable DVD drive. This works quite well, although at the moment only as a CD drive. I am aware that the latest version of RISC OS offers support for DVD drives, so now is the time to upgrade to the latest version of RISC OS 4.

All illustrations are from Nick Goodall's website, which you can visit at* www.nickgoodall.net *for more information.

Nick welcomes comments or questions and will help where he can. He can be emailed at: **nicholas.goodall@dsl.pipex.com**

Living With A PC: Going Flat Screen

The LCD monitor described here can be used just as well with a Risc PC computer alone.

Flat screen Liquid Crystal Display monitors have always been a problem for Acorn users. Apart from the high prices, now fortunately creeping lower, they have come onto the market long after hardware manufacturers gave any thought to making their products usable on our minority machines.

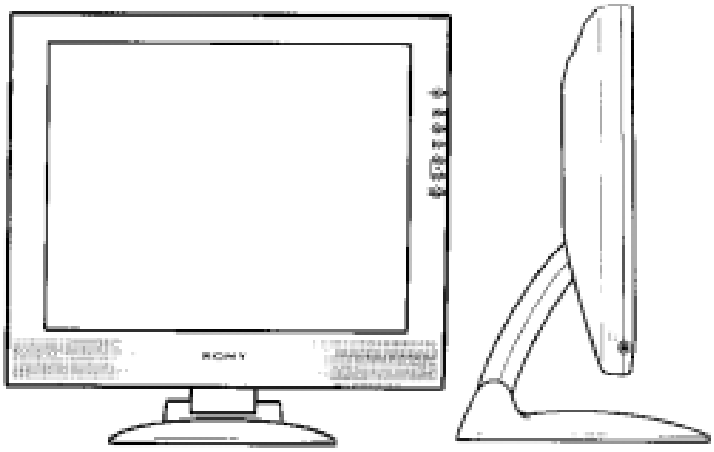
Reluctant PC user Peter Jennings finds it can be easy to move to a slim line, flat screen, LCD monitor which will work with a Risc PC as well (or on it own).

However, there are RISC OS dealers now offering a limited range of LCD screens with specially written Monitor Definition Files allowing us to use them.

One which attracted a great deal of attention at the RISC OS 2001 Show, and sold out there, was the dual input Sony M61 16-inch model being offered by ExpLAN Computers at just over £700 including VAT. When they managed to get some new stock I splashed out and got one.

I should say at this stage that supplies of LCD monitors seem to be variable and this particular model may, or may not, still be available when you read this. However, this should give a general idea of how feasible it is to go flat screen and, if necessary, link the monitor to two different computers.

The Sony's dual inputs are DVI-I digital/analogue RGB and HD15 analogue RGB. As the supplied cable comes with the familiar D-sub plug it connects to a Risc PC with no problems. I used that cable for my Windows PC and just plugged in the existing cable from my Acorn machine. A tiny rectangular button among a neat row of controls at the side of the screen makes it quick and simple to switch between inputs.



The front and slim line side view

Anyone who has seen an LCD monitor knows how good the screen looks. The 16-inch size actually gives a slightly larger picture than my 17-inch Acorn AKF85 as LCD screens are completely filled from corner to corner. The screen tilts from -5° to +70° and is detachable for wall mounting if desired. There are two inbuilt speakers with a stereo audio lead.

The Monitor Definition File, for RISC OS 3.5 or later, is supplied on a floppy disc. It is just dropped into the !Boot.Resources.Configure.Monitors directory and three lines of *Configure commands are typed in. This is best done before connecting the LSD monitor so don't get too enthusiastic and dump your old one before reading the installation instructions!

Full details for RISC OS use are supplied on a printed sheet so there should be no difficulty in making the connection. There is also a well-illustrated manual dealing with the PC connections and, for once, the Windows machine accepted everything immediately, without needing a *Wizard* to find and install it.

If you do a lot of digital photography (as I do) that's a perfect excuse for getting an LCD flat screen or, like me, you may have had it on your wish list since the first time you saw one!

NOTE: If you are interested in an LCD monitor you are advised to check model availability before ordering.

Sony M61 16" LCD monitor
Price: £703.82 inc VAT + delivery
Supplier: ExpLAN Computers Ltd
PO Box 32, Tavistock
Devon PL19 8YU
Tel: 01822 613868
Fax: 01822 610868
Email: info@explan.co.uk
Web: www.explan.co.uk

ARM Arena

Our regular games columnist, Andrew Weston, returns to update us on what's coming, what's not and where to get some almost forgotten old favourites.

It's good to be back after missing quite a while and I hope to summarise the major developments in the leisure area for RISC OS over the past six months or so. The main news this time round is TEK which I've mentioned continually in the history of this column and finally after numerous unexpected and unavoidable delays we have a final, definite, release date which you may have seen in the Acorn User adverts.

TEK

Artex Software have stated that they intend to release this futuristic strategy game on April 15th and at the Wakefield 2002 show. TEK is is an isometric, overhead viewed battle strategy game where the player takes control of units and installations in a conflict against another army. The game, originally intended as a joint venture with Acorn back in 1997 has taken a long time to complete particularly as it has to be now done as a part-time effort. However, Artex have strived for the best quality of gameplay and graphics to be incorporated into the game throughout its development and it should certainly worth buying.

It is likely that RComp will be selling the game so it should be available on their stand on the day of the show.

Jan Klose from Artex has told me via the newsgroups that the discount vouchers that were handed out to visitors at one of the past Wakefield Shows will still be valid if anybody needs any further incentive to buy!

Various people have asked Jan on Acorn Arcade about the nature of the units in TEK and how they compare to the units of games in a similar vein on other computer platforms. For example, underground units and

water-based units. These two examples apparently won't be in the initial release but Jan has hinted several times in the past about expansions to the game being made available if there if demand.

It is also planned to incorporate network support, both local and across the internet, in the future which would of course add another dimension to the game and a further possible bonus is the availability of a level and graphics editor to enable players to design their own levels. I would welcome the availability of any such editor as it potentially extends the lifespan and enjoyment of the game immensely.

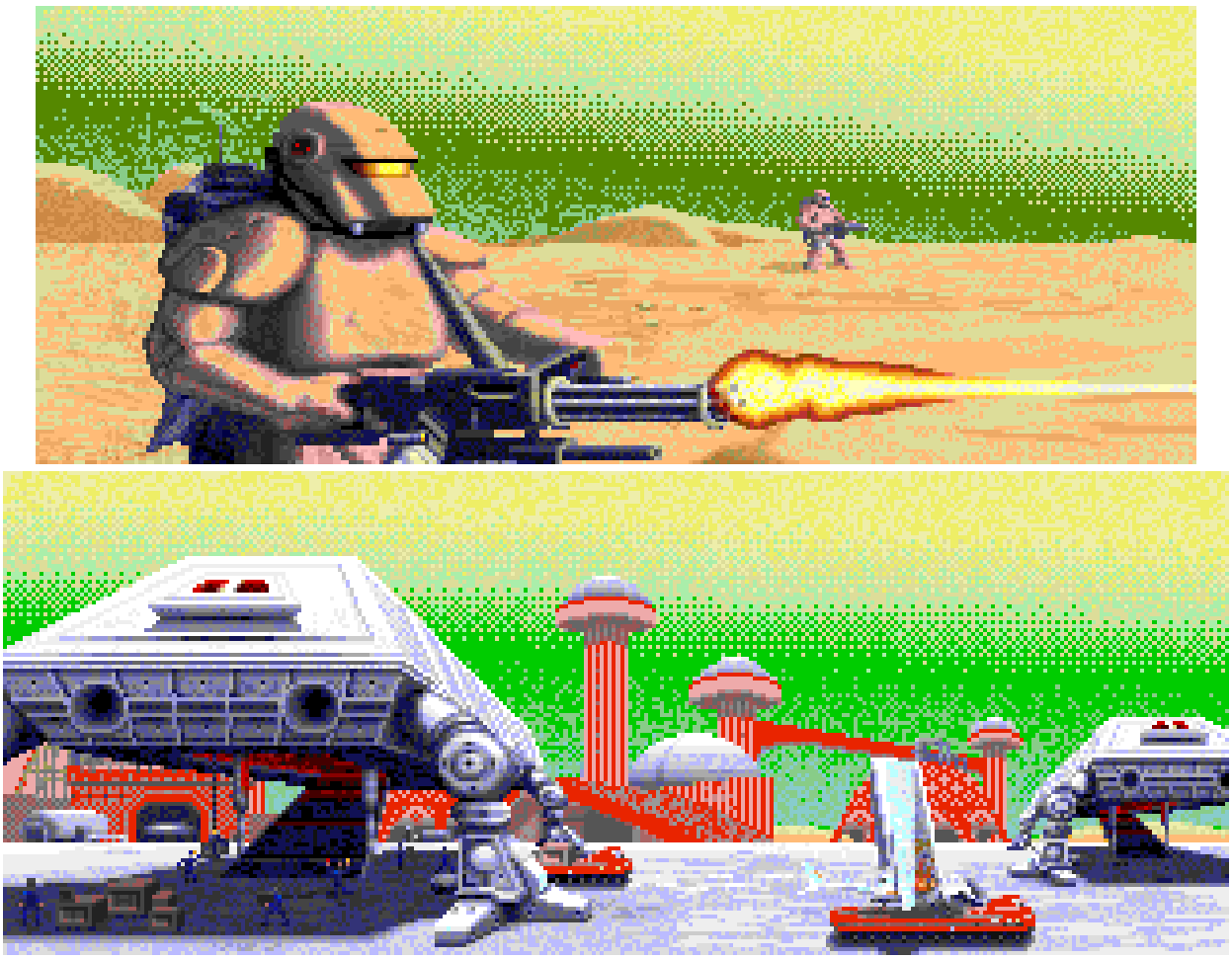
Judging by the level of interest TEK has received on the comp.sys.acorn.games newsgroup and Acorn Arcade discussion forum, it should be one of the more popular games of recent years and I seem to remember Artex saying that it would be at least as good as the PC-game Command&Conquer. If the game is popular enough, Artex may even be encouraged to upgrade the game for sequels in a way similar to that which the aforementioned best-selling PC game has. I understand TEK will be compatible with most post-1994 hardware including the latest RiscStations for example (somebody has even suggested the new RiscStation portable may run it!).You can read the latest news on TEK and see screenshots on Artex's website given below.

Descent 2

This 3-dimensional underground combat flight-simulator sequel which was released by RComp at the recent Wakefield 2001 show is apparently being updated in two areas. Network capabilities are being incorporated and the game is also being optimised to perform better (raising the frame rate, or, rate of screen update) on machines such as the RiscStation and Mico or older RiscPCs.

It is likely that RComp will announce any updates on the newsgroups so keep watching them for news or alternatively phone RComp on the number below for the latest news which I'm sure RComp will be happy to give.

There is now a review of Descent 2 on Acorn Arcade which should



Gunmen and space pad from Dune2

hopefully serve to persuade interested internet users either way.

Dune

Those readers looking forward to TEK will be interested to know that the forerunner of the PC-platform's Command&Conquer, Dune2 which was converted for the Acorn platform several years ago has been made available freely from the author's website.

The author, Jason Tribbeck, has discovered that the original publishing company no longer sees the game as a commercial product and the PC version is freely available, whether legitimately or not, on the web so Jason has made the Acorn version available to download subject to any objection by the original publishers.

Dune 2, as TEK, is a real-time strategy (RTS) game which you will commonly see in computer magazines and is therefore an

excellent starting point for any RISC OS user seeking to look into this genre. Jason's website is given below.

ArcCommand

Also on Jason's website is a freeware game which Jason has worked on in his spare time. It is in fact a conversion of one of the very first Acorn games, Startship Command, which many people reading this column may remember. My own memory is how difficult and infuriating the game was but it was certainly inspiring.

A further piece of information is that it was written by Peter Irvin, the co-author of the classic 8-bit game, Exile, which to me was the game representing the culmination of attempts to show what the BBC Micro was capable of.

Jason has updated the graphics and added his own implementation of artificial intelligence to the aliens attacking the starship you control.

All the features of the original are present in this update and on playing a demonstration version, I thought the whole system played very smoothly although I suspected it would be just as difficult!

Recent reports have indicated that the project has been removed after Peter Irvin objected to the overt similarities to his work but Jason has said he is re-working the game with Peter to make the game distinct from the original. I hope sincerely that something can be resolved between them as they are both accomplished and highly talented programmers.

Superior Software

On the subject of older games, I'm pleased to announce to retro-games fans that Superior Software are still trading and you can still order BBC games for playing under emulation (tape reading hardware available from Warm Silence Software for their 6502 emulator for example).

Their address is given at the bottom of this article or you can leave an order on their answering machine. I think most of their titles are for sale at £10.

Some really great games and compilations were released by Superior and have lost none of their enjoyability — will they ever? —

and some might say that having the original has a nicer feel to it than downloading game-images (files containing all game data) from the internet.

Super Methane Brothers

Here is a freeware game that has been converted from an old Commodore Amiga game and released via the web for RISC OS users to enjoy.

I'm not sure who converted this for RISC OS but the game is basically a platformer with multiple levels. A quick try gave the impression that it is colourful and fun and worth a look at. I have also read several positive reports on comp.sys.acorn.games from satisfied players.

Monopoly

A computer version of the famous board game has been updated by Duncan Mortimer and is now available from his website or from the downloads section of Acorn Arcade. Called Desktopoly, this version apparently will be the last from Duncan although the source code is available from his website should anybody be interested in developing it any further. The current version however now has improved computer player intelligence and the scope to add alternative 'maps' to the game. That is, to change the place names to those from cities other than London as in 'international' versions of the board game. Anybody for Swindon, Milton Keynes or Stoke-on-Trent versions?

F16

I have recently quizzed RComp Interactive about a graphically impressive and modern flight-simulator whose conversion to RISC OS was abandoned. Called F16, despite being examined by a qualified programmer it is unable to run at a good speed even on the fastest machines and any reductions in graphical load (it has many, many, polygons being a stage up from the other flight-simulations we have enjoyed on RISC OS) would be a huge task presumably. Only the optimisation of the core of the game that was undertaken was reasonably practical and so we'll have to wait for faster hardware it seems.

Mirror of Khoronz

Long-standing users of the Acorn platform may remember that in the early days acorn released a large number of software titles through their Acornsoft brand which was eventually sold to Superior Software. Various challenging text adventures were among these titles whose reputation is remembered to this day.

One such title is Gateway to Karos which has been released now on the internet (with the permission, I understand, of Pace Microtechnology, the holder of various Acorn intellectual property).

Also however is its unpublished sequel, Mirror of Khoronz (which is now in BBC Micro folklore as one of a number of games which either were played by a select few or never reached the market) is available to download. The URL is at the end of the column.

8-bit conversions

On the subject of 8-bit titles I should mention that Michael Foot from down under (the author of the freeware BBC emulator BeebIt) has converted another original, classic BBC game for exclusive use under RISC OS. This means you don't have the trouble of transferring the original files to your modern day hardware, finding a game image on the internet or even running it under emulation.

The game is Guardian and was an imitation of an arcade game popular at the time called Defender (many games very similar to those from the arcade or from other platforms were made for Acorn machines in the

1980s and given very often similar sounding names to avoid licensing issues). This game joins Michael's previous titles of Chuckie Egg (currently the subject of an article in the newstand magazine *Edge*) and Dare Devil Dennis, both BBC originals.

Last words

As most of us are probably aware, a lot is hinging on the release of new hardware in the near future (most likely it seems from Castle Technology) that will attract new developers or encourage remaining ones in the software scene.

As I've said in the past though, the seemingly slow pace of change should not stop existing/remaining games developers however as not only is there scope in the current range of machines as demonstrated most visibly by RComp, and hopefully soon Artex, but when the new hardware arrives the same developers will have expertise with which they can carry forward and develop further.

For the meantime though, let's keep an eye on the Wakefield 2002 show and hope it brings us the long-awaited TEK and maybe some other surprises. I'll let you know next time.

Contact details

Acorn Arcade:
www.acornarcade.com

RComp Interactive:
www.rcomp.co.uk

Artex Software:
www.artexsoft.com
(Artex games are distributed in the UK by RComp Interactive.)

Dune2 / ArcCommand:
www.tribbeck.com

Super Methane Brothers:
www.methane.fsnet.co.uk

Monopoly:
www.sjc.ox.ac.uk/users/mortimer/

Michael Foot's website:
www.voyager.co.nz/~mikef/

Old Acornsoft adventures:
http://www.quercus.ukgateway.net/adv/

WORDSQUARE

E	T	Y	B	O	L	I	K	E	H	C	A	C	N	D	K	O	B	N	S
E	H	D	I	R	E	C	T	O	R	Y	B	B	J	P	P	K	C	Y	Y
O	X	S	J	M	V	L	O	K	J	E	N	B	A	U	H	P	I	N	M
Z	K	E	L	E	E	E	X	C	V	X	X	T	K	K	I	Y	D	Q	H
G	X	M	R	E	T	N	I	R	P	L	W	V	O	R	I	C	R	B	T
S	O	F	T	W	A	R	E	H	J	J	Z	R	S	O	C	O	X	A	M
D	O	C	U	M	E	N	T	B	Q	L	C	U	X	W	S	B	G	C	L
M	Q	G	A	P	G	C	M	W	O	X	U	H	C	T	A	O	P	K	V
B	Z	T	R	X	N	D	A	E	R	H	T	S	V	E	M	L	A	U	M
F	R	Y	S	E	E	F	Z	R	E	P	R	O	M	N	T	C	I	P	X
O	N	B	Z	M	N	G	Q	C	P	B	C	S	B	F	C	N	M	A	O
E	O	A	R	X	X	N	O	X	A	J	O	R	N	E	P	Q	A	V	Q
T	M	G	B	O	K	B	A	H	H	L	R	U	S	U	Z	V	G	Y	B
G	Y	W	I	S	Y	W	A	C	S	N	S	S	T	M	W	A	F	E	Y
B	I	N	A	R	Y	K	I	S	S	N	Y	F	B	Q	E	N	E	T	T
X	U	S	K	A	E	A	E	D	I	G	D	E	Q	T	X	M	E	C	E
Q	M	X	Z	I	K	L	Y	D	A	C	X	F	H	S	R	K	O	I	Z
D	P	S	H	U	I	E	S	A	B	A	T	A	D	X	E	O	M	R	N
L	E	X	I	P	J	I	K	V	S	U	T	R	Q	J	V	G	A	J	Y
R	F	O	R	T	R	A	N	W	I	N	D	O	W	P	A	S	C	A	L

Know your computer terms?

There are more than 20, written in all directions, hidden in the WordSquare devised by Roger King. How many can you find?

The solution is on page 79.

Presenter

The first impression of Presenter is that it is itself very well presented. It comes in a slim plastic case, slightly smaller than a copy of Eureka, with plastic slips inside the front to hold the licence and registration card. The case is exactly right and a welcome contrast to the oversized cardboard boxes which have become common now with Windows software.

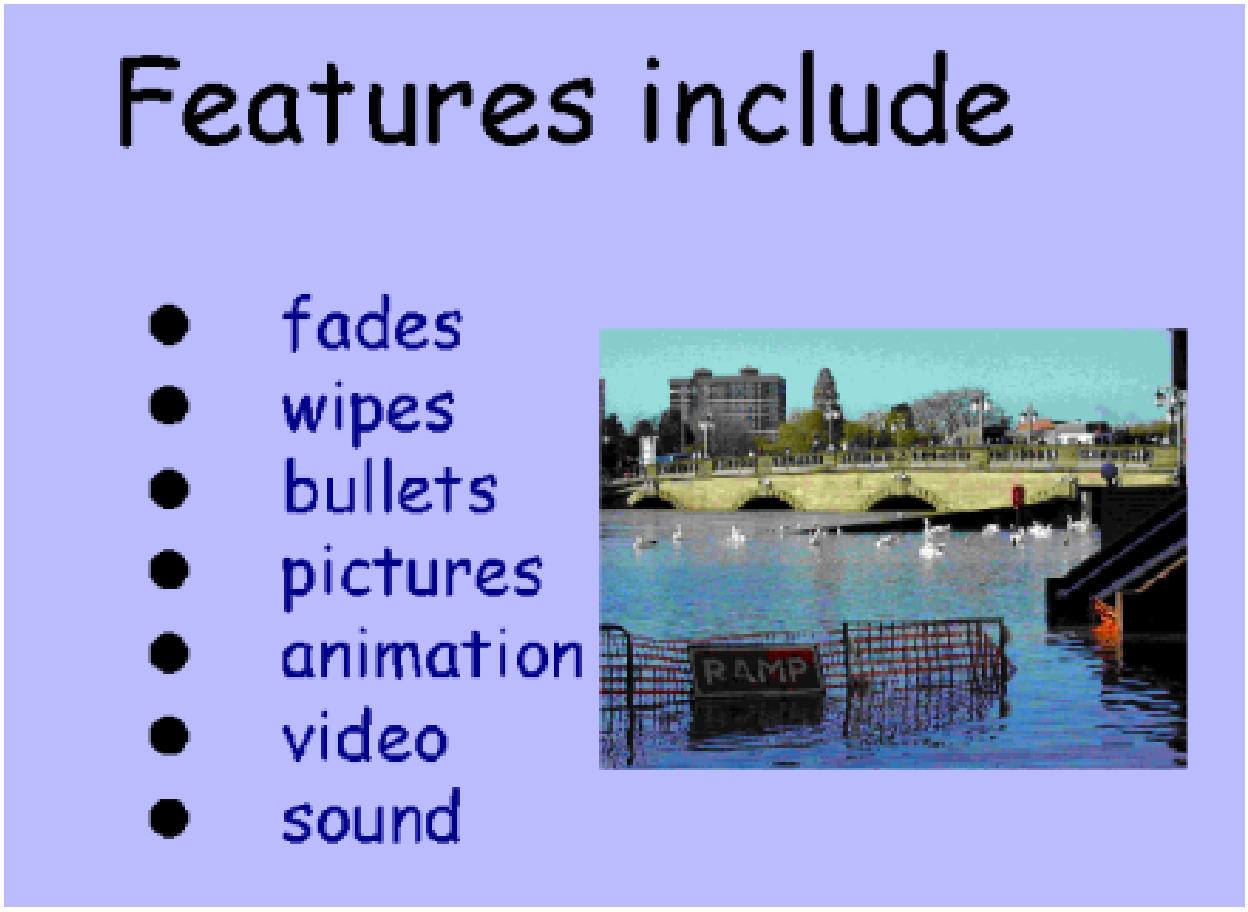
Textease keeps growing. Now the DTP, database and spreadsheet gets a presentation editor (which can also be used on its own) as Peter Jennnings has found.

Presenter is the latest additon to the range of applications which have been added to Textease since it first started life as a simple DTP program. It can be used along with the other components or run independently. All the programs can also be used on Windows and Apple computers as well as RISC OS machines and the files are interchangeable between all three platforms.

Unlike the earlier programs from Softease, there is no printed manual with Presenter but an on-screen tutorial and user guide, which can be printed out, complete with illustrations of the program running on a RISC OS machine. It is intended to keep this up to date with amendments available on the Softease Web site.

Running this tutorial/guide is the best way to start because it can be read on screen while you run a Presenter window where you can try out each step of the instructions.

Windows users can open Presenter from their Textease button bar but the RISC OS version of Presenter doesn't load with Textease. You have to click on the icon in the directory where you have installed it to put it on the icon bar. Clicking on that icon then opens a window with a button bar at the top and an empty rectangle for the first



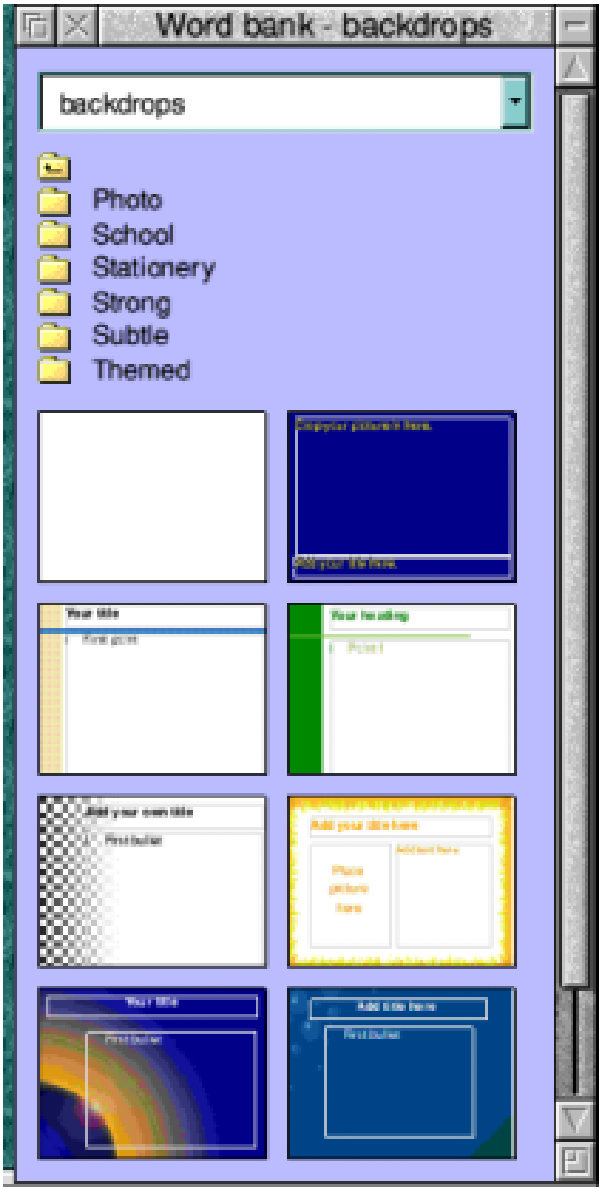
Presenter presents its features

'slide'. Alongside is a panel with a selection of pre-designed backdrops in a choice of subjects.

Ignore this for the moment and click *Menu* on the main window, move the pointer down to *Help* and across to select *User Guide*. The first page of the guide will offer you an example presentation. This lasts a couple of minutes and shows you exactly what Presenter can do — the ideal introduction to a new piece of software.

Follow on with the guide to a brief page of definitions then on to page three and the Getting Started tutorial where Acorn and Mac users are invited to click to get instructions for loading the program, which I think would already have had to be deduced to get that far.

Anyway, from then on you can just follow the tutorial, carrying out the instructions for practical experience, as suggested earlier, if you wish.



Pre-defined backdrops in a choice of subjects

The instructions are very straightforward. You choose a backdrop, drag in a picture and type in your text. There is a picture bank icon on the button bar and this can be set to open a different directory of images if you want to use it or you can drag in the required illustration from any other source.

You can add and make up additional slides but you have to open a menu and move across to a second one to add each new slide.

All the slides you make can be seen together, in thumbnail versions, as a story board and, at any stage, they can be run in succession as a full screen presentation.

More features

So that's it then? Not quite! We are only six pages through the User Guide/Tutorial which is 21 pages long. There are still a lot more features yet.

For example, if you want to fade from one slide to another there is more than one way of doing it. Presenter gives you a choice of 31 *(see opposite)*. Like to play a sound each time a slide is shown. You can record one of your own if you can't find anything just right from a list of 51 pre-recorded notes and effects, from African percussion to water drop *(also listed opposite)*.

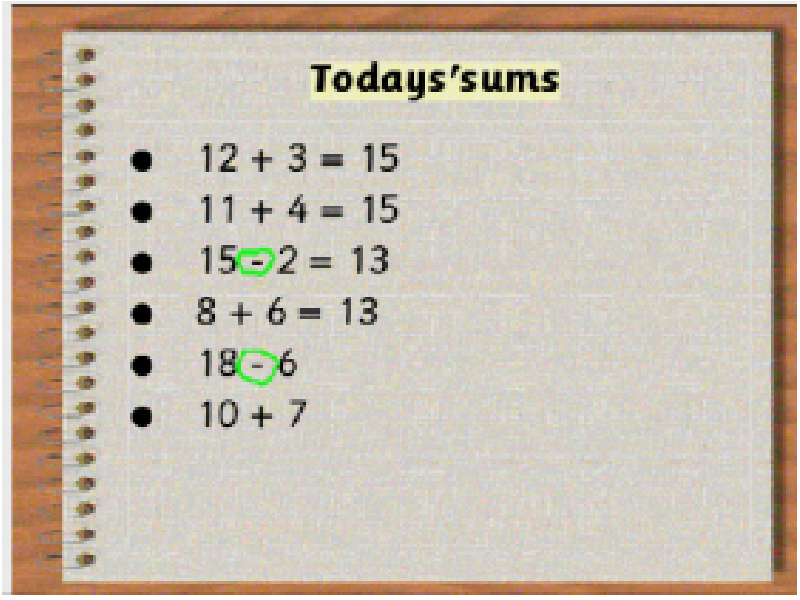
Slide changes and sounds

(no slide fade)
Random
Random wipe
Random fade
Fade dissolve
Fade big circles
Fade small circles
Fade big receding circles
Fade small receding circles
Fade squares
Fade rotating squares
Fade vertical lines
Fade horizontal lines
Wipe left to right
Wipe right to left
Wipe top to bottom
Wipe bottom to top
Move left to right
Move right to left
Move top to bottom
Move bottom to top
Horizontal centre wipe
Vertical centre wipe
Push left to right
Push right to left
Push top to bottom
Push bottom to top
Lift left to right
Lift right to left
Lift top to bottom
Lift bottom to top
Page turn

(no sound)
African_percussion
Bass_drum
Birds
Breaking_glass
Car_horn
Car_horn_2
Car_horn_3
Construction
Cowbell
Cowbell_high
Crystal
Crystal_block
Cymbal_crash
Cymbals
Cymbals_open
Electric_typewriter
Electric_typewriter_2
Emergency
Engaged
Gunshot
Ha
Hammer_shot
Hand_clap
Hi_digi_drum
Hi_drum
Hi_hat
Hi_pan_drum
Ice_block
Invader
Keyboard
Lo_bongo
Lo_digi_drum
Lo_drum
Lo_pan_drum
Med_bongo
Med_digi_drum
Med_drum
Old_typewriter
Orchestra_hit
Orchestra_hit_2
Ow_
Racing_car
Rim_shot
Samba_whistle
Scrape
Shaker
Shock_alarm
Snare
Spooky
Synth_tom
Water_drop

The choice of wipes (left) and pre-recorded sounds (above).

Unfortunately, that's where I found a problem. Unlike earlier parts of the Textease package, Presenter has been developed on Windows and ported to RISC OS and on my Risc PC, with RISC OS 4.02, the sounds refused to sound. Softease know about the problem and, hopefully, it should now be solved.



Edit the slide while the show is running

You can change slides at irregular intervals, as you wish, during a presentation by using the mouse or they can be displayed for a fixed interval and moved on automatically for either a single showing each or as a non-stop loop until you hit the Escape key or F5. Individual settings can be made for each slide and they can even be shown in random order.

A particularly useful facility if you are giving the presentation manually is the ability to edit the slide while the show is running. So a teacher could, for example, be giving a maths lesson with problems which could be completed as the answers were reached.

It is also possible to 'draw' on the slides using a pen tool, which makes temporary marks in a chosen colour, as the presentation is given.

Presenter
Price: £39 + delivery and VAT
Multi users: +£10 each
Supplier: Softease Limited
Market Place
Ashbourne
Derbyshire
DE6 1ES
Tel: 01335 343421
Fax: 01335 343422
Email: sales@softease.co.uk
Web: www.textease.com

Odd Odes 5

Sad

RIP

I fell in love with Phoebe
but she died

Someone suggested Linux
so I tried

I foolishly bought Windows
then I cried.

D O G Gerel

Can you say it verse? If so, give us your views of computing. Email the Editor at eureka@armclub.org.uk *or post it to the Club's usual address on page 80.*

Sponsored by: Cerilica Limited Acorn User R-Comp Akalat Publishing Spellings Computer Services

THINK RISC OS

Wakefield 2002

The Acorn RISC OS Show

Saturday & Sunday 18/19 May 2002

Thornes Park Athletics Stadium
Horbury Road
Wakefield

website: **www.wakefieldshow.org.uk/2002/**
Advance tickets now available on-line
e.mail: **showinfo@wacg.org.uk**

Attractions include
Developers village
Show theatre
Games arcade
Mayoral opening (Saturday)
Free car parking
Catering facilities
Charity stall

Advance tickets available by phone, post or web site:
Chris Hughes, 95 Cumbrian Way, Lupset Park, Wakefield, WF2 8JT
(Cheques only made payable to "WACG Show")

020 7742 3921
(office hours only)

Opening times

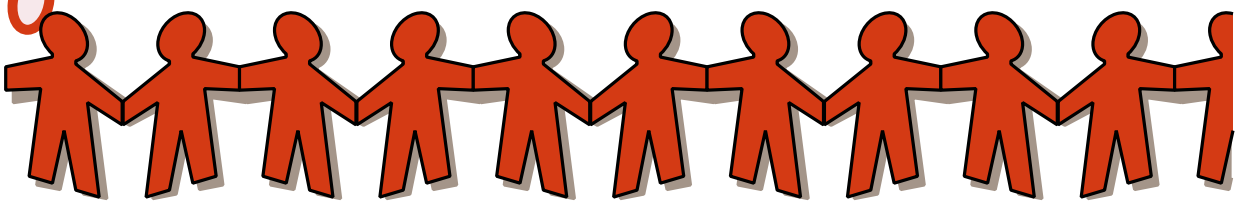
Saturday 10:30 to 17:30
Sunday 10:30 to 16:00

Ticket prices

Advance booking	Adults/Foundation/OAP	£4.00
	Juniors (5 to 16 years)	£2.00
	Weekend Adults	£6.00
	Weekend Juniors	£4.00
At the door	Adults	£5.00
	Juniors (5 to 16 years)	£3.00
	Foundation / OAP	£4.00
	Weekend Adults	£8.00
	Weekend Juniors	£6.00

Under 5's FREE

Foundation rate on production of membership card



Expohall, Hotel Mercure, Buizerdlaan 10, Nieuwegein
(near the city of Utrecht)

10.00 am to 5.00 pm

Admission €7
(Free garage parking)

The Show is being attended by companies from Holland, Germany and Britain and there will be demonstrations in the adjoining theatre.

Linux & RISC OS: Part 3

In the third part of his continuing series Mark Smith moves on to the Internet and explains the options and methods for getting on line.

Having set up a working Linux box, you are now ready to connect it to the Internet. There are many option available here, depending on the type of connection you have:

• Standard dial-up - If you have a modem, or an ISDN connection you can use a package such as diald to dial up your Internet Service Provider and connect your Linux box.

• Cable modem: If you have a service such as NTL or Telewest, you can use your Linux box with a cable modem for fast internet access.

• ADSL: If you have a BT telephone line and access to ADSL in your area, you can connect your Linux box to an ADSL router.

For the purposes of this article, I'm going to assume that you have a modem and a dial-up connection as this is still the most popular means of internet access. However, you can use a Linux box as a gateway to fast internet access and this does provide some additional options which are not currently available with a RISC OS only set-up.

Diald

Diald is a powerful package capable of controlling a demand-dial link to the internet. This means that you can set it up so that it will automatically dial up every time you start up your web browser, or send an email.

A comprehensive 'how to' document is available at:
http://www.linuxdoc.org/HOWTO/Diald-HOWTO.html

The diald homepage is at:

http://diald.sourceforge.net/

Fortunately, there's an RPM package available to help ease installation. The latest version, at the time of writing, is available at:
http://prdownloads.sourceforge.net/diald/diald-1.0.1.i386.rpm

The first thing to do is to download and install this RPM, assuming that you have a Linux distribution which supports RPMs. If not, a tarball (.tar.gz) file is available on the sourceforge site - follow the instructions contained within the How-To in order to install it.

As a reminder, the RPM may be installed by the root user with:

```
rpm -ihv diald-1.0.1.i386.rpm
```

Configuration of diald

Diald is a powerful, flexible tool with a large number of configuration options. You are unlikely to need the vast majority of these, so the following guide is intended to help you get started. The examples used are based on a Demon Internet account.

As well as diald, you'll also require a scripting tool such as *Chat* to get the modem to dial and log in to your ISP and *pppd* to allow the use of PPP (point-to-point protocol) between the Linux box and the modem. Under RedHat these are provided by the ppp RPM, to make sure this is installed. To find out if the package is installed enter:

```
rpm -q ppp
```

The diald configuration file is normally found in /etc/diald.conf. I have set up a directory called /etc/dialup to hold all of the dial-up configuration, so /etc/diald.conf points to a file inside this directory:

```
#————————————————————
# Diald configuration is in /etc/dialup
#————————————————————---          -
include /etc/dialup/diald.conf
```

Note that all files should be installed in this directory by the root user, ie root should be the 'owner' of the files.

The file that this points to /etc/dialup/diald.conf, and this contains:

(see separate file diald.conf)

General Configuration

The protocol used on the dial-up link is set to ppp and a log-file is defined to hold the accounting information, ie a record of when how long the link has been in use. The tcpport line is optional - I'll cover that further later on.

Device Configuration

This section holds details of the modem configuration. The first line identifies the serial port to which the modem is connected — /dev/ttyS0 indicates the first serial port, which would be known as *COM1:* under Windows. The next line indicates a script file which will be run every time a connection needs to be made. Details of this are shown further down. The speed line indicates the speed between the computer and the modem of 115200bps. This is not the same as the speed of the modem connection over the phone line.

The *lock* entry ensures exclusive access to the modem, *modem* indicates the use of the modem control lines on the serial port and *crtscts* indicates the use of hardware flow control on the connection to the modem, in order to ensure that data is sent between the modem and the computer only when the receiving end is ready.

Network Configuration

The local and remote addresses are as used on the ends of the dial-up link. Note that the local IP address is fixed or static in this case. The *mtu* is the maximum transmission unit and needs to be set the same as it is for the local network, where packets of data are being forwarded from the local network onto the Internet. The route out to the Internet is to be set as the default route, ie data for anything which is not on the local network, goes out through the modem. A further script is run when the link to the internet is established. This allows actions to be taken automatically, such as the transmission of any pending outgoing mail.

The *demasq* entry relates to TCP/IP masquerading, covered later on.

Timeouts

Diald has facilities for automatically retrying to establish a connection when it fails. It can also back off after a series of failures, to allow for corrective action to be taken at the

other end. If the connections continue to fail it will give up completely. For further information, see the diald documentation.

Packet Filter Policy

This is where the behaviour of diald is defined in respect to what triggers a connection to be established and the conditions under which it will shut down the link. The rules for this are stored in a separate file, in /etc/dialup/diald.filter.

(See separate file diald.filter)

Each time a packet of data is sent or received across the dial-up link, this file is scanned from the top for a rule. These rules generally indicate a minimum time to keep the link up after the packet has been sent or received. For example, keep the link up for at least 300s after any web traffic during off-peak times.

Rules may be restricted to certain times of the day and week using the *restrict* command, eg 8am-6pm, Monday to Friday in the example.

The example packet filter policy offered here is based on examples supplied with diald and is what I use on my link. You will almost certainly need to experiment to find something which is right for you. This will depend on your usage of the Internet and how much you are being charged (if at all) for connections at different times of the day.

What happens when diald is ready to make a connection?

In our configuration example, a script (written in the bash UNIX script language) /etc/dialup/dial.bash is run.

(See separate file dial.bash)

As I use Demon Internet with an off-peak 'surftime' number, I have one dial-up number which enables me to get free off-peak calls and another which I can use (for a charge) at peak times during the week.

So this script needs to work out what time it is and define the number to use accordingly. It does this by reading the output of two commands into variables hour and day respectively:

```
date +%H
```

outputs the current hour in 24 hour

clock (0-23)

```
date +%w
```

outputs the current day, where 0 is Sunday and 6 is Saturday.

The off-peak number may be used at any time on Saturday or Sunday, or before 8am and after 6pm (18:00) during the week.

Note: A word of warning: if you use the system time and date to decide which number to dial, you need to ensure that your system time is reasonably accurate and correctly configured to reflect daylight saving. Time synchronisation is covered further down, but the timezone may be selected using the *tzselect* program (run as root user).

The script also reads the protocol (ppp in our case) from the diald configuration file. This may either be ppp or slip, and is required in order to instruct Demon to use the same protocol at the other end of the link.

Finally, the bash script runs a program called chat. It is this which actually instructs the modem to call the ISP and log in. To do this, it has another script, and it is also given the number to dial and protocol as parameters.

(See separate file dial.chat)

This simple chat script has three sections. The first intialises the modem. The dial attempt is aborted if the line is busy (engaged) or it gets no carrier signal from the other end. It also disables echoing of the output (which would normally go to the sceen if chat was run from a terminal session) and sets a 60s timeout in case it is left hanging, unable to complete the connection.

The next section makes the modem dial. ATZ resets the modem. The script then waits for an 'OK' response before ATDT dials the number. Note that the \T respresents the phone number parameter passed into chat.

Once a connection is established with the modem at the other end, CHAT's final responsibility is to log in. This portion of the script works for Demon, but may need to be altered for other ISPs.

It first waits for a response indicating

that the modem has connected (the string includes the text CONNECT) and then for a login prompt (string contains 'ogin:', — the l may be upper or lower case). At this point your ISP login ID should be sent, followed by your password when prompted. Finally, Demon prompts for a protocol, which is that read from the diald configuration (\U) and a string containing the text 'HELLO' indicates that login is complete.

Note: Because dial.chat contains your ISP password, it is recommended that this file is readable only by the root user. This will prevent anyone else from obtaining the password! To make this file accessible to root only from a root terminal session, enter:

```
cd /etc/dialup chmod 600 dial.chat
```

After a connection is made

Our diald configuration allows for another script to be run after the connection has been established. This allows you to trigger various actions automatically on connection to the Internet. These may include:

- Collection of email
- Transmission of queued outgoing mail
- Collection of Usenet news
- Time synchronisation

(see separate file ip-up.bash)

The example contains commands to send queued mail and fetch news, though you may wish to comment those out (with a #) since we've not yet covered the setting up of news and email. The third command sychronises the time with Demon's NTP (Network Time Protocol) server. You may wish to enquire if your ISP provides a similar service, but note there are several protocols that may be used to do this — NTP is only one of them.

Remote Control

As well as setting static configuration and filter policy rules in the configuration files, it is also possible to use other mechanisms to define diald's behaviour. One of these is through a connection from a computer elsewhere on the network.

The example configuration file includes the line:

```
tcpport 9999
```

This allows connections on port 9999

to issue commands to diald. If you bring up a task window on a RISC OS machine, for example, and enter *telnet <server name> 9999 or use an application such as FreeTerm to do the same thing you should get a connection to diald.

From there, you may issue commands to diald. For example:

down

will terminate the dial-up link.

Firewalling and Masquerading

Having connected your Linux box to the rest of the world, it's important to realise that there are many people out there, not all of whom have good intentions. The chance that someone else may gain unauthorised access to your Linux box, especially over a dial-up link, is low but not impossible.

To guard against this, it is possible to stop all incoming connections without affecting your access out to the Internet. Depending on the Linux Kernel you have, there are different ways of doing this. Assuming that you have a 2.2 Kernel or later (ie any distribution released over the last couple of years), you can use IPChains to specify a set of firewall rules.

Note: 2.4 Kernels (eg RedHat v 7.1 or later) also allow these rules to specified by the more flexible IPTables, though IPChains is still supported.

In addition to firewalling, IPChains also provides a mechanism for transparently accessing the Internet from any other machine on the local network (eg a Risc PC), even though your ISP will normally assume that you have only one machine connected. This facility is often known as masquerading (as all machines on the network masquerade as one single IP address, as far as your ISP is concerned).

(see separate file rc.firewall)

In my configuration, the firewall rules are set up in /etc/rc.d/rc.firewall.

There are two sets of rules. The first (forward) relates to forwarding data between the local network and the dial-up connection. The second

(input) relates to connections to your Linux server.

Each of these has a default policy: whether to accept, reject or deny (ignore) packets of data transmitted across the network or the dial-up link. Reject means actively reject a packet by informing the source machine.

For the forward rules, the default policy is REJECT. However, packets between machines in our private networks (all IP addresses starting 192.168.) are forwarded (first rule). Acorn Access has a tendency to generate broadcasts to all IP addresses starting 1. (destination 1.255.255.255). These are filtered out by the second rule, to prevent them from bringing up the dial-up link and being sent out to the Internet. Finally, all other packets originating from the private networks to the Internet are masqueraded to make it appear that they've originated from the Linux server itself.

For the input rules, the default policy is accept. Any TCP connections from machines on local private networks are accepted (first rule), and also connections from the Linux box to itself (second rule). We then accept incoming mail connections from Demon's own servers, as this is how incoming mail is received (third rule) and deny any other connections from the Internet (fourth rule). The last four rules deny all UDP connections from the Internet to ports reserved for specific services.

Having created the rc.firewall file it may be run at any time from a root login. However, we really want it to be run automatically when the machine starts up. To do this on a RedHat distribution, create a file called *firewall* in /etc/rc.d/init.d:

(see separate file firewall)

Having created the file, run the following commands as root:

```
chkconfig —add firewall service
firewall start
```

The firewall may be removed at any time, by entering:

```
service firewall stop
```

Incidentally, the demasq option in the diald configuration enables any monitoring on the dial-up link to

show the real origin of the connection from other machines.

Next Time

Now the Internet access is up and running we'll turn our attention to setting up email in such a way that it is stored on the Linux box, but read and composed using Messenger Pro on a RISC OS machine.

Files

Below and on the following pages are the seven files referred to in the text.

These can also be downloaded from the Club's website at: www.armclub.org.uk

diadl/conf

```
#————————————————————————————————————————#
# File    : /etc/dialup/diald.conf
#
# Purpose: Dialup Configuration File (diald)
#
#————————————————————————————————————————#
# ———————————————-
# General Configuration
# ———————————————-
mode            ppp
accounting-log /var/log/diald/accounting
tcpport         9999
# ———————————————
# Device Configuration
# ———————————————
device          /dev/ttyS0
connect         /etc/dialup/dial.bash
lock
speed           115200
```

```
modem
crtscts
# ——————————-
# Network Configuration
# ——————————-
local          158.152.186.172
remote         158.152.1.222
# MTU must be same as Ethernet MTU to avoid masquerading problems
mtu            1500
defaultroute
demasq
ip-up          /etc/dialup/ip-up.bash
# ——————————
# Timeout commands
# ——————————
redial-timeout       5
died-retry-count     2
redial-backoff-start 24
redial-backoff-limit 160
dial-fail-limit      100
# ——————————————
# Packet Filter Policy
# ——————————————
include        /etc/dialup/diald.filter
# Peak time g4 calls charged at 2p/min - min charge is 2.5 mins
impulse        150,0,0
#
#————————————————————————————————
# END OF FILE
#————————————————————————————————
```

diald.filter

```
#————————————————————————————————
#
# File    : /etc/dialup/diald.filter
#
# Purpose: Dialup Link Control File (diald)
#
#————————————————————————————————

# ————————————-
# Rules for TCP packets
# ————————————-

# Give the connect 15s initially just in case the destination
# network is unreachable
accept tcp 15 tcp.syn

# Keep named transfers from holding the link up
ignore tcp tcp.dest=tcp.domain
ignore tcp tcp.source=tcp.domain

# SCO telnet starts by sending empty SYNs and only opens the
# connection if it gets a response.
accept tcp 5 ip.tot_len=40,tcp.syn

# keep empty packets from holding the link up (other than empty SYN
packets)
ignore tcp ip.tot_len=40,tcp.live

# make sure http(s) transfers, including access to a web cache hold the link
# for 1 minute, even after they end during peak times.
restrict 08:00:00 18:00:00 1-5 * *
accept tcp 60 tcp.dest=tcp.www
```

```
accept tcp 60 tcp.source=tcp.www
accept tcp 60 tcp.dest=tcp.webcache
accept tcp 60 tcp.source=tcp.webcache
accept tcp 60 tcp.dest=tcp.https
accept tcp 60 tcp.source=tcp.https
restrict * * * * *

# make sure http(s) transfers, including access to a web cache hold the link
# for 5 minutes, even after they end during off-peak times.
accept tcp 300 tcp.dest=tcp.www
accept tcp 300 tcp.source=tcp.www
accept tcp 300 tcp.dest=tcp.webcache
accept tcp 300 tcp.source=tcp.webcache
accept tcp 300 tcp.dest=tcp.https
accept tcp 300 tcp.source=tcp.https

# Once the link is no longer live, we try to shut down the connection
# quickly. Allow a further 1 minute after all non-web connections closed off
# peak. Otherwise 5s to close things down quickly when we're being charged!
# Note that if the link is already down, a state change
# will not bring it back up.
restrict 08:00:00 18:00:00 1-5 * *
keepup tcp 5 !tcp.live
restrict * * * * *
keepup tcp 60 !tcp.live
ignore tcp !tcp.live

# The following can be expected to show reasonably frequent traffic - use
# a short timeout on order to force a redial if the connection stalls
# during unattended transfers
accept tcp 120 tcp.dest=tcp.ftp
accept tcp 120 tcp.source=tcp.ftp
accept tcp 120 tcp.dest=tcp.ftp-data
```

```
accept tcp 120 tcp.source=tcp.ftp-data
accept tcp 300 tcp.dest=tcp.smtp
accept tcp 300 tcp.source=tcp.smtp
accept tcp 300 tcp.dest=tcp.nntp
accept tcp 300 tcp.source=tcp.nntp

# For other active non-web connections allow an hour's inactivity off-peak.
# Otherwise only allow 5 minutes.
restrict 08:00:00 18:00:00 1-5 * *
accept tcp 300 any
restrict * * * * *
accept tcp 3600 any

# ——————————-
# Rules for UDP packets
# ——————————-

# Don't bring the link up for rwho.
ignore udp udp.dest=udp.who
ignore udp udp.source=udp.who

# Don't bring the link up for RIP.
ignore udp udp.dest=udp.route
ignore udp udp.source=udp.route

# Don't bring the link up for NTP or timed.
ignore udp udp.dest=udp.ntp
ignore udp udp.source=udp.ntp
ignore udp udp.dest=udp.timed
ignore udp udp.source=udp.timed

# Don't bring up on domain name requests between two running nameds.
ignore udp udp.dest=udp.domain,udp.source=udp.domain
```

```
# Bring up the network whenever we make a domain request from someplace
# other than named.
accept udp 30 udp.dest=udp.domain
accept udp 30 udp.source=udp.domain

# Do the same for netbios-ns broadcasts
ignore udp udp.source=udp.netbios-ns,udp.dest=udp.netbios-ns
accept udp 30 udp.dest=udp.netbios-ns
accept udp 30 udp.source=udp.netbios-ns

# keep routed and gated transfers from holding the link up
ignore udp tcp.dest=udp.route
ignore udp tcp.source=udp.route

# Anything else gets 2 minutes.
accept udp 120 any

# ———————————-
# Rules for other packets
# ———————————-

# Ignore some background protocols.
ignore igmp any
ignore ospfigp any

# Catch any packets that we didn't catch above and give the connection
# 30 seconds of live time.
accept any 30 any

#————————————————————————————
# END OF FILE
#————————————————————————————
```

dial.bash

```
#!/bin/bash
#————————————————————————————————————
#
# File   : /etc/dialup/dial.bash
#
# Purpose: Dial Internet where number depends on time of day
#
#————————————————————————————————————
#
# Constant definitions
#
offpeak='08440416662' # Demon g5 number (surftime)
peak='08440996662'    # Demon g4 number
path='/etc/dialup'
#
# Get current time (hour only) and day of week
#
let hour=`date +%H`
let day=`date +%w`
#
# Set number depending on time
#
if [ $day -eq 0 -o $day -eq 6 ]
then
  # Off Peak - Weekend
  number=$offpeak
else
  if [ $hour -lt 8 -o $hour -ge 18 ]
  then
    # Off Peak - Weekday Evening / Night
    number=$offpeak
```

```
  else
    # Peak - Weekday Daytime
    number=$peak
  fi
fi
#
# Get protocol from diald.conf so we match it at other end
#
protocol=` grep “^mode “ $path/diald.conf | awk “{print \\$2}”`
#
# Run chat script with specified number and protocol
#
/usr/sbin/chat -f $path/dial.chat -T $number -U $protocol
#
#————————————————————————————————
# END OF FILE
#————————————————————————————————
```

dial.chat

```
#————————————————————————————————
#
# File   : /etc/dialup/dial.chat
#
# Purpose: Dial Internet (Demon Internet) with specified number and protocol
#
#————————————————————————————————
#
# Initialise
#
ABORT BUSY
ABORT ‘NO CARRIER’
```

```
ECHO OFF
TIMEOUT 60
#
# Dial
#
'' ATZ
OK ATDT\T
#
# Log in....
#
CONNECT ''
ogin: <ISP login>
ssword: <ISP password>
ocol: \U
HELLO ''
#
#————————————————————————————————
# END OF FILE
#————————————————————————————————
```

ip-up.bash

```
#!/bin/bash
#————————————————————————————————
#
# File    : /etc/dialup/ip-up.bash
#
# Purpose: Script that runs when dial-up link is brought up
#
#————————————————————————————————
#
# ——
```

```
# Mail
# ——
# Send outgoing queued mail
/usr/sbin/sendmail -q
#
# ——
# News
# ——
# Suck news
suck news.demon.co.uk -A -c -q -HF /var/news/history -bp -hl localhost -dd
/var/news/data -dm /var/news/articles -dt /var/news/temp >
/var/log/news/suck.last
#
# ——
# Time
# ——
# Synchronise time with NTP server
/usr/bin/rdate -s ntp.demon.co.uk
#
#————————————————————————————————
# END OF FILE
#————————————————————————————————
```

rc.firewall

```
# Enable packet forwarding
echo 1 > /proc/sys/net/ipv4/ip_forward

# Starting configuration of forwarding firewall
echo -n “forwarding “

# Flush the forwarding firewall and set the default policy to reject
```

```
ipchains -F forward
ipchains -P forward REJECT

# Accept any packets from one part of the LAN to another
ipchains -A forward -s 192.168.0.0/16 -d 192.168.0.0/16 -j ACCEPT

# Ignore any nonsense packets from Access
ipchains -A forward -s 192.168.0.0/16 -d 1.255.255.255/32 -j DENY

# Masquerade packets from the LAN to the outside world
ipchains -A forward -s 192.168.0.0/16 -j MASQ

# Starting configuration of input firewall
echo -n “input “

# Flush the input firewall and set the default policy to accept
ipchains -F input
ipchains -P input ACCEPT

# Allow TCP connection attempts from the LAN and the loopback address
ipchains -A input -p tcp -s 192.168.0.0/16 -y -j ACCEPT
ipchains -A input -p tcp -s 127.0.0.1 -y -j ACCEPT

# Allow SMTP TCP connection attempts from Demon’s mail severs
ipchains -A input -p tcp -s 194.217.242.0/24 -d 158.152.186.172 25 -y -j
ACCEPT

# Reject any other TCP connection attempts
ipchains -A input -p tcp -y -l -j DENY

# Allow all UDP packets from the LAN and the loopback address
ipchains -A input -p udp -s 192.168.0.0/16 -j ACCEPT
ipchains -A input -p udp -s 127.0.0.1 -j ACCEPT
```

```
# Block all UDP packets from other addresses to reserved ports
ipchains -A input -p udp -d 158.152.186.172 0:1023 -l -j DENY

# Block all UDP packets from other addresses to NFS related ports
ipchains -A input -p udp -d 158.152.186.172 2049 -l -j DENY
```

firewall

```
#!/bin/sh
#
# firewall        Kernel IP firewall
#
# chkconfig: 2345 11 89
# description: Manages the kernel's IP firewall

# Source function library.
. /etc/rc.d/init.d/functions

# Source networking configuration.
. /etc/sysconfig/network

# Check that networking is up.
[ ${NETWORKING} = "no" ] && exit 0

[ -x /etc/rc.d/rc.firewall ] || exit 0

# See how we were called.
case "$1" in
  start)
        # Install firewall rules
```

```
        echo -n “Starting firewall: “
        /etc/rc.d/rc.firewall
        echo
        touch /var/lock/subsys/firewall
        ;;
  stop)
        # Remove firewall rules
        echo -n “Shutting down firewall: “
        echo -n “input “
          ipchains -F input
          ipchains -P input ACCEPT
        echo -n “output “
          ipchains -F output
          ipchains -P output ACCEPT
        echo -n “forwarding “
          ipchains -F forward
          ipchains -P forward ACCEPT
        echo
        rm -f /var/lock/subsys/firewall
        ;;
  status)
          ;;
  restart)
          $0 stop
          $0 start
          ;;
  *)
        echo “Usage: firewall {start|stop|restart|status}”
        exit 1
esac

exit 0
```

The Omegus Family
Join RISC OS

Select

Cartoon by Jan Pearce

Gill's Stylish Journal

Gill looks us over and explains everything the best dress spod needs to know to stay confidently in style for any occasion and look right in any company.

Sartorial disasters have been in the papers regularly recently. Eureka, ever on top of the big news, has been keeping an eye out for you. Of course, we're all bored by the usual flurry of awards party "What was she wearing?" comments but the most popular and new target to insult has to be Pop Idol judge, Simon Callow.

Of course, the true spod won't have heard of him, due to only watching things on their computer. Trust me, though, the papers have been very excited by his wearing his trousers on the high side. The waist level would be considered *Empire line* on a woman, which means just below the bust. Sadly for Simon, it's much more flattering if you do have some bust.

I was initially a little concerned about the poor man. Then I realised that actually, some people don't feel the need to have a Psion and a mobile strapped either side of the belt; so Mr Callow's armpits shouldn't be suffering from technology-rash. Presumably he has one of these new, ridiculously small phones that just have to go in a trouser pocket, because on a belt, you have to keep explaining that no, they're not a Star Trek Communicator.

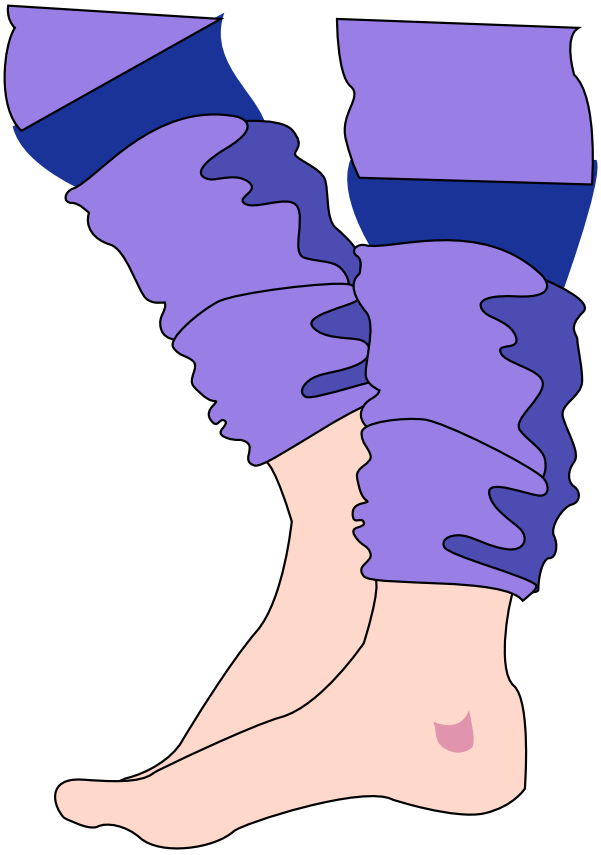
These phones are not, however, an excuse to stop wearing belts. I know your Psion is now all unbalanced but the one thing the technology revolution has done for the spod's fashion sense, is bring back belts. They make the difference between actually wearing clothes and merely being in the midst of a set of them. The belt combines technology and style.

I think, before I start insulting spod sartorial elegance, I should be fair and look at the pluses. For one, I may be

wrong (do correct me if I am!) but I doubt any spods reading this actually wore leg warmers, in the eighties or otherwise. This is mainly because most of you are male and weren't members of new romantic bands. I suppose you might have tried ballet… oh no, that's a bit close to getting exercise!

Did ear warmers pass you by? Well done. My school actually felt the need to tell us which colours were acceptable, they were so popular (phew, my white ones were fine!) Quite a worry really. Maybe it was this particular fashion mistake that meant I got too used to having warm ears, hence the penchant for hats.

But fashion didn't just pass the spoddy sorts by in the eighties when they were busy getting the Sinclair Spectrum or Acorn Electron to do a complicated maths puzzle (please, play the games, like the rest of us!) Oh no.



Did you wear them in the eighties?

Kipper tie

My grandfather once enjoyed a freak moment of fashion and owns a kipper tie. When I say kipper, this one is wide, it was probably used for clubbing the kippers to death when the trawlers came back in. Anyone admitting to owning one? And what about flares? Thank goodness the price of denim went up soon after!

I gather there's a set of jokes going around the internet about dress sense. I haven't seen it, (Don't send it –- I'm perfectly happy that way!) but I thought I'd come up with a few practical tips for the 'noughties' spod.

Briefly, let's deal with the few women

spods. I won' t dedicate a lot of time to these poor few, as, ladies, you're rare enough that if anyone challenges your dress sense, you can claim to be unique. No one could argue with that.

I believe the internet joke advice for women is 'wear shorter skirts and lower cut tops.' I'm thinking, don't. Please? I mean, this is assuming you share the traits of a male spod and last took exercise back in '83. That may well be 1883.

You also, presumably, do not go on holiday to sunbathe. I'm sure many of you who could face the technological inaccuracies of 'The Net' wondered why Sandra Bullock risked getting sand in her laptop. Didn't her hotel have a room and a table and chair? So I'm assuming your tan is that lovely shade of monitor glow. I'm sorry, I just can't see that having a cleavage that glows quite that green would count as attractive. Except, perhaps, to moths.

But on the other hand, as a woman spod –- or spodess –- you do not have to dress exactly as your male counterparts do. For starters, due to having hips, there is a chance you have a waist and skirts (remember them?) and trousers… OK then, jeans, can sit safely on your waist. No need to hitch them up to your chin. But of course, letting them slip until you look like a builder is not a good look either. For men, women, or builders.

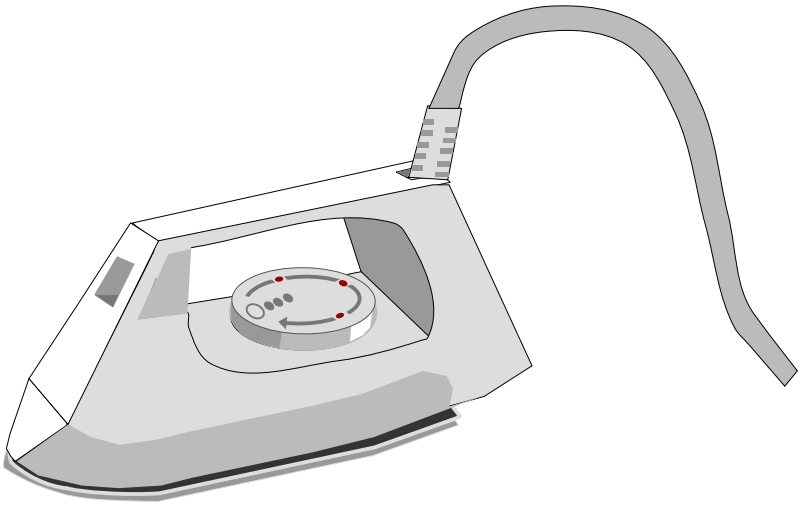
Red Dwarf

Another either-gender clothing disaster has to be the Red Dwarf T-Shirt. Don't get me wrong; I love Red Dwarf. I even went to a book signing by Rob Grant. And I'm certainly not recommending the Cat's idea of cool. No. But you know the T-shirts with the stars all over them? Little white dots all across your shoulders… not a good look. And a waste of the Head & Shoulders to clear up your scalp problem, then fake it on a T-Shirt.

Stick to the UNIX gag T-shirts. They may make no sense to anyone other than other spods but at least they don't make you look as though you've moved from dandruff to mild leprosy. There are so many other T-shirts you can wear. Please do so!

Actually, I'm not a big fan of T-shirts anyway. When they're new, they look

great. But after about three washes (that'll be three visits from your Mum) so many start to look like something better used for cleaning the car.



Puzzle picture — hint: if you don't recognise it ask your mother.

The shape they used to have becomes stretched everywhere. Unless they started off a little tight and then, wouldn't you know it, they become something a Barbie doll couldn't fit her ample assets into. The colour starts to leave, turning into washed up grey. Whether you started from white or black, they eventually meet in the middle and that just isn't anyone's most flattering colour. Even with a luminous screen glow.

Of course, shirts and most trousers, other than jeans, need ironing. You'll just have to invite your mother for the whole weekend. Jeans don't need ironing, so please don't let her. I do recommend a sharp crease down the front of each leg on most trousers. They imply that you know a good dry cleaner.

But on jeans, please don't. Firstly, once creased, they never go, so you will end up with ironed in stripes if your poor mother doesn't manage to hit the same line twice. Secondly, these are 'casual' trousers. They shouldn't look as smart as that other pair you wear for job interviews, funerals and the company Christmas do. (In descending order of 'fun' levels.)

Another thing with jeans. They are a rare clothing item that it is acceptable if they're older than you are. But this should be a fashion thing, with carefully positioned slits to show off your muscular legs and possibly even tightened up from the sixties, to no

longer be flared. Tight jeans showing off rippling muscles? You're a spod –- stick to new jeans.

Talking of age of garment; trainers. I think that says it all but I know you'll need an explanation. Trainers. They really shouldn't be the ones your father got for you when you were seven and he still had hopes of a son who'd play for United. You should have thrown those away well before he started to despair of having a grandson who gets an England cap.

Trainers, I personally believe, should be for sport. That means real exercise. Oh, I'm not crazy enough to expect you to take up squash. (The sport, not travelling on the tube.) I'm not even asking you to jog to work –- for the sake of your poor workmates! No. But the odd long walk, just to justify owning them? Time spent dithering in a square, deciding which bar to go into does not fit in this category, although the advantage that this rules out a few bars with smart dress codes may make up for it…no, it doesn't. Sorry.

Now, I know it's very popular to slate wearing Simpsons ties, or Wallace and Grommit socks. I don't mind the socks at all. I'm hoping your nice smart shoes and crisply ironed trousers will cover any particularly bad jokes. Do mind where you wear any with musical components — "Deck the hall with boughs of holly; Tis the season to be jolly" never really seems appropriate at funerals. And "Doh" going off after every word the boss says tends not to improve important meetings. Or at least, not your take-home-pay.

I don't actually mind the ties that much. I mean, yes, they're a bit sad but I think it depends on the individual tie and taste. Simple small logos repeated look from a distance like a mildly tasteless paisley, so that's fine. Big pictures can look bad but, more importantly, avoiding text is a big plus. There's nothing worse than trying to read someone's tie and frustratedly failing, thanks to jam doughnut stains.

Toby does actually own a Dilbert tie. His excuse for it is that it was a Christmas present from my little brother. At a mere 12, my brother settled into the male approach to shopping and regularly does the lot on

Christmas Eve, hoping not to be too near you when you open his gift. At least he gets something faintly related to the person. I'm still not sure what my other brother was trying to say with the large gourd-like thing that might, apparently, once have been a Kenyan musical instrument. Or a way Kenyans fleeced the tourists.

Nasty trend

I have noticed, though, a nasty trend to design shirts with cartoon characters on them. This is a Very Bad Thing. Shirts are for those times when you want to look –- to the boss, some woman you want to impress, or just to prove you can –- like a mature, sensible adult. You're trying to look like a man who shops more than tri-annually, has his PEPs and ISAs in order and can conduct a conversation about the state of the Middle East, without needing to telnet in to a news site. Don't ruin this impression by giving away that the most important woman in your life is Eric Cartman's mother.

But what about when a spod is out and about. No, not on the World Wide Web, I mean the real world. Popping to Sainsbury's…no, they deliver. Seeing your mates…oh no. Grabbing a Chinese takeaway? Actually, we've just got a leaflet for one that delivers. To your text message specifications. I haven't tried it yet but it's got to be worth a go!

No, but on those rare occasions when you venture out of your air conditioned server room, for whatever reason, and can't just leap straight into your climate controlled car, what then? Just promise me it won' t be an anorak. Please? I was once told by a course-mate of Toby's: "You can keep your whole life in an anorak." Clearly I have more of a life, because mine needs a handbag.

Tasselled leather

No, the not-too-formal-outer-wear garment to go for should be a jacket. 'Jacket' covers a broad spectrum and there should be something to suit you. These range from tasselled leather things to make you look like a biker who fell off, to suit type jackets (known for reasons that aren't clear as 'sports jackets' –- don't let the name put you off.) There are all sorts of other jackets, some less cool than others. Fleeces are good, although they started off as jackets for sporty

people, going walking, so be careful where you wear them, or someone might try to persuade you to exercise.

Impressing the boss

If you're really feeling like impressing the boss, a long winter coat in a dark colour –- navy, dark grey, black –- can look particularly smart. A well cut garment that suits you could even fool them into thinking you have a sense of style. To continue this impersonation of someone fashionable, do stop wearing it once the weather warms up. It just doesn't look right when everyone else is sweltering in bikinis.

Of course, this assumes you need a coat at all and aren't happiest at server room temperature. (Two below freezing, if Toby's is anything to go by. It's not good being able to see your breath when you go to pick up a print out!) If you are, the best way then to pretend to be cool, is not wear a jacket at all and fake a Geordie accent. People will think you're hard, rather than sad. Worth a try, except around real Geordies, who will then put you into a nice cool hospital.

But to round up, I feel I should explain the distinction between fashion and style. They are not both just "someone else's problem," I'm afraid. However, thankfully, you do not need to be in fashion to have style and if you are in the latest fashions, chances are, (and I'm rashly assuming I'm not addressing too many supermodels here) you have no style.

Strange creations

Fashion may be strange creations ambling down the catwalks, made up of feathers, fur, or not very much at all. I can't recommend wearing these. Managing to not look like a total fool in the latest trends is a skill and that's why models are highly paid. You are highly paid for your technical skills. It's the same idea but not, when all's said and done, the same thing. Not at all.

Style is about how you look and wearing standard, normal, clothes well. Sadly, no one offers outsize salaries for it and if you overdo it, you may get mistaken for a salesman. But before you scream and cry, remember this: women do talk to salesmen. "Get lost" is a step in the right direction…

Top tips

So here are my top ten tips for managing just a little bit of style:

(1) There is such a thing as too much hair gel. (My little brother has now hit 17!)

(2) Having all your clothes in the same shade of faded black does make a fashion statement but it's not a good one.

(3) Belts. In the words of Nike (sports shoes, I know, you've never heard of them) "Just do it."

(4) Waists are cunningly designed for being where trousers sit. Ignoring Simon Callow and to the other extreme, I don't think 'hipsters' are for you, try waist height. If you don't know where your waist is, ask your mum next time she's round doing the washing.

(5) Anything that makes you look as if you have an affliction, from dandruff to falling over a lot and shredding your jacket into tassels, is a bad idea.

(6) Shorts are only excusable in summer abroad. In this country we don't get the weather to justify extra strong sunglasses to stop your shiny white legs blinding us.

(7) If a jacket has more pockets than a snooker hall, while it may be very handy for your mobile, pager, PDA… don't do it. More importantly, you'll just look deformed if you actually use too many.

(8) Doctor Martens shoes may have been an early nineties fad but they're still fine to wear, so long as you have polished them sometime in the last decade. No other shoes that old are justifiable. (And I assume, unlike me, you did eventually grow into all that extra space your mum insisted on!)

(9) Ironing. It may not be fun but that's the dry cleaner's or laundrette's problem.

(10) If you aren't playing sport, take great care about wearing sports gear…from trainers to tracksuits, you just know that someone will try to make you run. And I don't want to have to polish my DMs for your funeral.

You Asked — We Answered

The questions pour in but our expert Technical Help team, led by David Ruck, usually know the answers (sent to you direct) to help solve the problems.

Adding a CD writer

Question:

I am planning on upgrading my hard disc and adding a CD writer to my system. I would like to find out how I should format partitions on my new 40GB drive to enable a large number of MP3s to be stored, as well as numerous small files and applications.

Robin Holmes

Answer:

If you have RISC OS 4 there is no problem with large discs, as its new disc format is far more efficient than previous versions and capable of handling discs up to 256MB.

However, if you have RISC OS 3.7 or earlier, any discs over 4GB start getting very inefficient. The disc is split in to LFAUs (large file allocation units), which is the rounding up size for any space allocated, and this doubles each time the disc size doubles. However, more significantly, each file or directory has to be allocated a minimum amount of space that is 16x the LFAU. It's not too bad at 4GB with a minimum size of 128Kb and a rounding up of 8Kb, but at 40GB it's 2048Kb and rounding up of 128Kb.

This can just be bearable if you only stored MP3s which are several MB each but for general small file such as applications, its extremely wasteful and you'll find all the space is used on the disc, long before you have 40GB of data on it. You can also have only a total of 65,532 objects on a disc, which you may well exceed.

By comparison RISC OS 4 would give a minimum file size of 80Kb with a 40GB disc and you can store more than half a million objects on it. It also

has the added advantages that you can give your MP3s long meaningful filenames, such as artist+track, and you are not limited to 77 files per directory. Not many albums have more than 77 tracks but this is very useful for collections of pictures etc. So if you haven't upgraded to RISC OS 4 yet, I'd highly recommend it.

Boot error

Question:

I have a Risc PC 600 with a StrongARM 32 + 2MB and a 3GB hard disc and RISC OS 4. I cannot run the Boot application because it comes up with an error message (After *Boot:Utils.UnplugTbox*) Error: 'Messages not found. Error number &9'. Any ideas ? It looks like just an error message file but I cannot find it. Where can I get info. on the RISC OS 4 (4.0.2?) Boot application and on RISC OS 4 in general ?

Barry Aulton

Answer:

In the RISC OS 4 boot sequence *Boot:Utils.UnplugTbox* is run just before the contents of *!Boot.Choices.PreDesk,* so it's likely that something you (or a program) has put in there is causing problems.

Try moving everything out of this directory and see if you boot up without problems. Then reintroduce each thing you have removed until you find the culprit.

It is likely that the problem lies with either an application or a directory containing a *!Run*, and the Messages file which should be contained in this app/dir is not present for some reason.

Too many toolbox modules

Question:

I recently downloaded your DiscKnight trial and discovered that I needed an up-to-date version of toolbox module. As advised by you I downloaded toolbox version 1.63 from RISCOS and then tried to run DiscKnight. The icon failed to appear on the icon bar and I got the error message: Fatal error &1B80AB04 : Iconbar Object has reserved bits set in its flags word (flags 0xe0).

I am using a Risc PC with StrongARM and RiscOS 3.7. Can you assist please?

Ron Horne

Answer:

There are a couple of problems trying to upgrade the toolbox modules and old modules can often still be left around causing problems such as you have experienced.

First, open each of the numbered module directories under *!Boot.Resources.!System* and if you find any toolbox sub directories in these, delete them. This will remove any old toolbox modules in the wrong place that can override newer ones.

Then install the new toolbox modules from http://www.riscos.com using the BootMerge tool of !Configure (double click on *!Boot*, open *Boot*, then *Install*, drag the !Boot directory from the downloaded archive to the window).

Lastly, if you are running an OS less than RISC OS 4, open *!Boot.Utils* and copy the *UnplugTBox* program to *!Boot.Choices.Boot.PreDesk* This is needed because RISCOS Ltd's installer assumes you are using the RISC OS 4 !Boot which has this file in a different place where it will not be run on older systems.

Damaged hard disc

Question:

I just bought a Risc PC where the hard drive was damaged in the post (it basically floated around in the case), At start up it attempts to read the disc, gets nothing, then takes a long time to boot up into a VGA screen (system has RO3.5). When clicking on the HDD icon, I get a disc error 21 at a particular location (I'm assuming this is the first of many). Do you think there is any possibility of DiscKnight recovering anything on the drive?

Answer:

The drive may well be damaged to such an extent that no data is recoverable after being treated in such a manner. However, there is a slim chance you may be able to recover some data using DiscKnight if parts of the disc are still readable.

You can download a free checking only version of DiscKnight from www.armclub.org.uk/products/discknight. As you have only RISC OS 3.5 that has no toolbox modules in ROM, you will not be able to run the desktop front end but can use it from the command line, as described in the *!Help* file.

In summary, load *!Edit* (which should be in the Apps folder on the icon bar) press Ctrl+F12 to get a task window, and after putting in the floppy disc containing DiscKnight and letting the filer see it, type:

*DiscKnight -v ADFS 4

Save the contents of the window and email it to me and I'll be able to advise further.

Euro sign

Question:

Can anyone tell me how to display or print the Euro sign on my StrongARM RISC OS 4 computer? I have EasiWriter Pro, also an old version of Textease, StrongEd, Webster XL, Argonet Voyager Fresco, running RISC OS 4.02 using a Microsoft keyboard with the Euro sign on the number 4 key. This keyboard works a Windows PC as well, via an electronic switchbox unit. I can get the Euro sign on the Windows PC but not on my Risc PC.

Jack Howarth

Answer:

Unfortunately the situation over the Euro symbol is a bit of a mess. Some fonts supplied with RISC OS 4 have it defined at character 128 and others an alternative version at 164. Non RISC OS 4 fonts may not have it at all.

Use *!Chars* to display the font you want to use and check if the Euro character is defined. You can either use this to enter it or the keyboard short cut of holding *Alt* and typing 128 or 164 on the numeric keypad.

If printing to a non-Postscript printer using the RISC OS printer drivers the Euro character will print as it's displayed on screen. However if you are using a Postcript printer you will have to set it up using !FontPrint to download the RISC OS font, rather than mapping to a printer font, which may not contain the Euro or have it mapped to a different character code.

The biggest problem comes if you want to transfer a document (say Word format from EasiWriter) to another platform or use the symbol on a web page, as the character code used is invariably different. I would recommend using the international currency code in this situation; that is *123EUR*. Alternatively you could embed a small bitmap of the symbol in the document/webpage.

Network problem

Question:

My daughter, Sophie has a Risc PC 600 upgraded to ARM 710. I bought an Ethernet card for it and later installed RISC OS 4 and, as recommended, removed the ethernet card first. All seemed to be working.

Shortly afterwards, I had the opportunity of a 17" Compaq monitor. I was unable to get the monitor to respond to the computer so telephoned The ARM Club helpline. I received very helpful advice and eventually concluded that the Compaq was unlikely to be compatible and returned it to the shop.

When I came to replace the original screen I replaced the ethernet card and, without thinking, automatically plugged in the cable. I switched on the computer and got the usual black screen with white writing. When it got to about the third star command after 'unplug Toolbox' a different line came up with 'not recognised' on the end. The display then closed in from the sides to a vertical line in the middle before going blank. After many frustrating and unsuccessful attempts to cause the display to pause, I think that the message relates to some network resource not being recognised.

I have removed the ethernet card, executed a delete power on and executed numeric zero and 4 power ons to no avail. The computer can be 'revived' by shift-break but is not readily configurable.

Dick Atkinson

Answer:

This sounds as if the auto detection system is not recognising your monitor and selecting an invalid screen mode. Or you have circumvented the auto detection by selecting an incorrect monitor type. If it's the former you can get a special plug with pin 12 missing that prevents the machine's auto detection being confused by a modern monitor using it for a different purpose.

You will not need to use numeric 0 or 4, as these select TV and VGA monitors. Use 1 for a multi-sync which will allow a greater choices of modes.

Get the computer to the desktop by shift booting if necessary then delete the file !Boot.Choices.Boot.PreDesk.SetUpNet This will prevent the networking error and allow you to reboot and enter the desktop properly next time. Then you can double click on !Boot and setup your network card details again.

On closing the configuration utility the file you deleted will be recreated, and you will be asked to reboot again, after which you should have network capabilities.

Formatting a hard disc

Question:

I have a problem formatting a new Seagate 40GB drive (Model ST 340810A) with HForm v. 2.53. I want to format this as a bootable ADFS disk in a Risc PC for use under RiscOS 4 with long filenames.

The label on the Seagate says it has 16383 cylinders, 16 heads, 63 sectors and an LBA of 78,165,360. The configuration code is U2 PD2, and the configuration level is ESMF1. The firmware version is 3.39

HForm does not appear to correctly identify the disc. It shows cylinders = 16, heads = 0 and Sectors - 20037

It gives the identification description as :.....x.....K.4i@....@@; and the firmware version as: ../.....

When run, I select <9> (Other) as the type of disc, and if I accept the default values for sectors per track of 20037 and heads of 0, Hform freezes at this stage.

If I start again and substitute the values taken from the disc label, Hform gives a drive parameter init flag of 1 and a parking cylinder of 15. I then select A (no more changes to defect list), i,n,y,y,y, and HForm gives LFA unit ?128. Pressing return at this stage does nothing.

Is there a problem with formatting large hard drives using HForm?

Richard Nevill

Answer:

Discs of up to 80GB have been successfully formatted with HFORM. **It's** likely the drive is not being recognised by the machine.

The CHS values are limited to 8GB discs (so as not to confuse old PC BIOSs), so on any formatter you always need to select LBA mode if given the choice. The formatter should then pick up the true size.

• Ensure the data cable is correctly orientated and pushed tight at both ends.
• Ensure the power connector is plugged in properly.
• Check the master/slave link is set appropriately (master for first or only drive, slave for second drive).

If you still have trouble, contact the supplier as the drive may be faulty. If you have another computer try in that to confirm this.

Mode Definition File

Question:

I have a Risc PC StrongARM OS 4.02 with plenty of RAM and 2MB VRAM. I have recently acquired a Philips 151AX LCD monitor and would like an MDF with maximum colours/screen size possible.

The manual gives:
Vertical Refresh Rate 56Hz-75Hz
Horizontal Frequency 30KHz-61KHz.
Video bandwidth 80MHz.

It says maximum resolution is 1024x768 at 75Hz, recommended video mode is 1024x768 at 60Hz. I would be very grateful if you could suggest a suitable MDF please that would give me 32K or 16M colours at 1024x768.

C G Pearce

Answer:

The AKF60 definition that comes with your machine is a suitable starting point as it contains a 1024x768 at 60Hz mode. Modern LCDs will lock on and correctly display most signals, however it may require tweaking to give the best results. For example if the display area does not extend all the way to the edges, or if you get an unstable picture when displaying dithered areas.

To tweak mode definitions you can either edit the MDF files which live in !Boot.Resources.Configure.Monitors or use the Acorn !MakeModes program. Tweaking is a bit of an involved process, so you may want to ask here again for further advice.

The WordSquare solution *(The puzzle is on page33)*

E	T	Y	B	O	L	I	K	E	H	C	A	C	N	D	K	O	B	N	S
E	H	D	I	R	E	C	T	O	R	Y	B	B	J	P	P	K	C	Y	Y
O	X	S	J	M	V	L	O	K	J	E	N	B	A	U	H	P	I	N	M
Z	K	E	L	E	E	E	X	C	V	X	X	T	K	K	I	Y	D	Q	H
G	X	M	R	E	T	N	I	R	P	L	W	V	O	R	I	C	R	B	T
S	O	F	T	W	A	R	E	H	J	J	Z	R	S	O	C	O	X	A	M
D	O	C	U	M	E	N	T	B	Q	L	C	U	X	W	S	B	G	C	L
M	Q	G	A	P	G	C	M	W	O	X	U	H	C	T	A	O	P	K	V
B	Z	T	R	X	N	D	A	E	R	H	T	S	V	E	M	L	A	U	M
F	R	Y	S	E	E	F	Z	R	E	P	R	O	M	N	T	C	I	P	X
O	N	B	Z	M	N	G	Q	C	P	B	C	S	B	F	C	N	M	A	O
E	O	A	R	X	X	N	O	X	A	J	O	R	N	E	P	Q	A	V	Q
T	M	G	B	O	K	B	A	H	H	L	R	U	S	U	Z	V	G	Y	B
G	Y	W	I	S	Y	W	A	C	S	N	S	S	T	M	W	A	F	E	Y
B	I	N	A	R	Y	K	I	S	S	N	Y	F	B	Q	E	N	E	T	T
X	U	S	K	A	E	A	E	D	I	G	D	E	Q	T	X	M	E	C	E
Q	M	X	Z	I	K	L	Y	D	A	C	X	F	H	S	R	K	O	I	Z
D	P	S	H	U	I	E	S	A	B	A	T	A	D	X	E	O	M	R	N
L	E	X	I	P	J	I	K	V	S	U	T	R	Q	J	V	G	A	J	Y
R	F	O	R	T	R	A	N	W	I	N	D	O	W	P	A	S	C	A	L

ACCESS
ASCII
BACKUP
BASIC
CACHE
BYTE
BINARY
COBOL
DATABASE
DIRECTORY
DOCUMENT
EPROM
FORTRAN
HTML
INPUT
KILOBYTE
MEMORY
NETWORK
PASCAL
PIXEL
PRINTER
SCANNER
SOFTWARE
THREAD
WINDOW
WYSIWYG

Did you find 26?

There will be another puzzle from Roger King in our next issue.

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