Eureka

The magazine for members of

The ARM Club

Acorn World 97

The Club plays host at the big show

Fonts and flourishes in Gothic & Medieval style

The useful SYS statement

Ridiculous Rhymes with wriggling recipes

Spectrum nostalgia on the Acorn

Issue 24 — Winter 1997

Acorn Unveils

It's that exciting time of the year again for Acorn enthusiasts when the hints and speculations of the last few months come to an end with the unveiling at Acorn World of the latest hardware developments.

Top of the list to see this year is the new Risc PC II but there is always the hope of something else, unexpected.

Inevitably, there will be the recurrent speculation about Acorn's future. This should be assured, at least in the immediate term, thanks to the wider applications of StrongARM in the growing and highly competitive world of communications.

But what of Acorn computers? Most of us have long given up the hope that some startling new development will be the big breakthrough to replace the dominant IBM/Microsoft machines.

That hope flared briefly, when the first Risc PCs offered IBM compatibility plus ARM excellence, only to be quickly dampened when it created only the briefest flicker of interest outside Acorn computer circles.

Despite this, Acorn's presence at the Show, with a new improved computer on view, demonstrates the company's continuing commitment to that market. Its computer technology benefits from the money which finances the research and development of other ARM powered devices and the demand for Acorn computers is obviously still big enough to make their production viable.

Acorn has gone into the lion's den and embraced DOS and Windows without being swallowed up. It has kept its identity in a competitive world which has seen other, once well known, names disappear. It has shown a flair for innovation which keeps the future exciting for Acorn users.

Let's go to the Show and find out what's coming next. See you there.

Peter Jennings

CONTENTS

Ridiculous Rhymes

Handwriting and **Planes CD**

The CD is aimed at the education field and contains two main Genesis applications.

!Handwriting demonstrates the Roman Cursive style and provides information on the development of handwriting through the ages.

mode and Planes in 256 colour 800x600 mode. My machine was running a SCSI double speed CD drive with CDFast, on a 17 inch monitor with 2MB VRAM, using StrongARM and RISC OS 3·7. I have a large memory so I initially lowered it to what would be available on a

Alan Wilburn looks at a CD-ROM where Christopher Jarman reveals the history and art of handwriting and encourages reluctant readers with pictures of planes.

!Planes gives information about various types of aircraft, aimed at the less able/reluctant reader, having an interest range of seven to 14 years and a basic reading age of eight years.

Information

The applications arrive in a strong plastic video case containing the CD in a thin plastic wallet, 12 worksheets to photo-copy and a 24 page A5 manual.

The applications need RISC OS 3·1 or higher and a minimum of 4MB DRAM for best results. Writing should be in 256 colour 640x480

4MB machine — that is 2½MB, the size mentioned in the manual — to see if things worked OK, then I reverted to normal size to operate my normal working tools.

Initially I decided to do an in depth review of both applications but soon realised this would make a very long article so the intention is to give a general overview.

Overview and impressions

I am not familiar with Genesis so do not know what is standard to the application and the work Chris has done so I am dealing with what I saw.

Genesis works on a page system which lead onto each other and you can step backwards or forwards through the pages. An initial contents page lets you select the chapter you want or an index will let you access any single page.

I was impressed with the on screen displays and backgrounds. 'Menu' brought up two choices print and save graphics and text.

The vector graphics were in Art Works (AW) format, bitmaps in sprites and text in Edit or Draw. The screens printed OK via Canon BJC-610 in Printers 1·54 and 1·52, Laser Direct had problems in Printers 1·54 and 1·22 with AW files but was all right on bitmap screens — the AW files printed OK via AW —but parts and most shading were lost from screen dumps. The pages consist of a mix of movies, sound, graphics and text and I enjoyed viewing them. I had a number of problems when running the applications at first, with files not found and also the application crashing, but I found that if I clicked on Printers, Armovie, Browser and CDFonts (last three on the CD) I had no problems at all.

Handwriting

The contents page lists the seven chapters and the information page. The latter explains how to move through the chapters, activate spoken commentary by clicking on a number of icons and running movies using on screen control panels.

Briefly the seven chapters are:-

 Handwriting Skills a display of different shapes, patterns and joins in Roman Cursive.

This is a sample of the style.

The movie sequences can be stepped through to show the correct motion of the pen whilst forming the letters, patterns and words.

Story of ABC the development of letters over the past five thousand years

Writing Surfaces vellum, parchment and making paper.

Scribes Devil the character you blame for bad work.

Making Ink in the past and in the classroom.

Illuminated Letters examples and how they were made.

Wool put inside quill to hold the ink

Cut 3

Cut 1

Cut 2
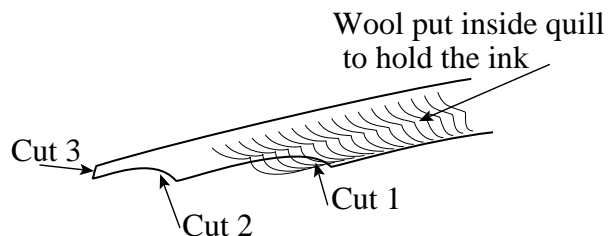
Quill Pens where they came from, how to make and use them and the style of writing possible.

!JoinUp

This is a program that takes a text file, which you write, converts it into Roman Cursive and then traces each letter on screen to show the correct way of forming it. Other fonts can be used as the basis of the application if you are teaching another 'fonted' style. There are a number of free fonts on the CD.

This is Roman Cursive

This is dotty font

This is Winchester

This is Ghost

This is Jotter

This is Quiltalic

This is Topo

Planes

There are sound and movies and the written information is spoken if you click on the headphone icon.

Early Planes from Icarus via balloons and Wright Brothers up to the Tiger Moth.

Military Planes starting with the Red Baron, Gladiators and Swordfish, WW2 planes such as the Mosquito and Spitfire and onto modern planes such as the stealth bomber. This section has a large number of movies including landing on an aircraft carrier, flying aircraft and a rocket attack

Passenger Planes mentioning, amongst others, the Dakota, Boeing 707, Concordè and Space Shuttle.

Fun Planes covers the recreational use of planes including training craft such as the Piper Tomahawk and Cessna, microlights, hang and para gliders.

Helicopters covers different types and uses, such as carrying passengers, air sea rescue, traffic police and as war planes.

Air Flow a set of movies, demonstrating the effects, that can be stepped through to examine effects in detail.

Birds-Gliders and how they move around in the sky.

Things to Do Information on the Airborne Charity for children with special needs. Planes to colour — screens of outline planes that can be printed (same as worksheets) —the same result can be obtained from any of the other coloured AW files by printing in 'Outline only' option in Art Works.

Places to visit: details, cost and in some cases road map directions.

Web Pages: a set of pages that can be accessed to give info on planes and a set of web addresses for the surfing fraternity.

There is also a note taking section, quiz and flying certificate that can be filled in and printed.

Thought

There are a number of PD movies about that are connected to flight. I can think of a number, including a flypast of Harriers, Spitfires and a Lancaster, Red Arrows, Shuttle and even Star Trek, The Next Generation. I think it would have been a good idea to have these large applications on the CD, if possible, as an additional resource — the files can be 10MB so ideal for CD storage and a lot better than 6 HD discs each.

the hand/eye co-ordination —a long and intensive task. This writing style would be helped especially with the font being available for work sheets —it sure beats lining Banda Masters and careful writing to produce copy/practise material.

The Planes work was well presented giving a small amount of information just right to be assimilated by slow learners especially as it was spoken.

Comments

The speed of access to the CD was a bit slow but at an acceptable level. I found both applications interesting and suitable for school use.

The plane drawings were excellent and form a good resource for further work. If you do not have ArtWorks the vector graphics are in Draw format.

The Handwriting chapter is not claiming to be a program to teach writing —I consider it more use for a remedial/refresher approach. For me there is no replacement for the chalk on board patterns and words with supervised long practise to reinforce

The ability to step through films would help to find and understand information.

All About Handwriting and
All About Planes CD-ROM
Price: £35 +VAT
Site licence: £70 +VAT
Extra discs cost £15 +VAT
Supplier: Topologika Software
Waterside House, Falmouth Road
Penryn, Cornwall TR10 8BE
Tel: 01326 377771
Fax: 01326 376755
Email:
sales@topolgka.demon.co.uk

Sound Byte Recorder

The former Printer Port Sampler has now been revamped, given a face lift and re-released under a new name as the Sound Byte Recorder.

The package comes in a well packed box and, after you remove the covering sleeve, you get the recorder itself: a small plastic box that plugs into your printer port. It has two gold

I am very impressed with the sampler and the quality of sound output that it provides. I put it through its paces in a local junior school and my next task is to use it to create some radio jingles and adverts. So I'll let you know about that in a future issue of Eureka.

Now to the matter in hand: how did I get on? I decided to use the Sound

Matthew Cook has been putting the new revamped Sound Byte Recorder through its paces and is impressed by what he hears.

phono sockets on the back, for connection to audio sources, and is about the same size as the dongles formerly used on the Computer Concepts packages ArtWorks and Impression.

You also get a microphone of a reasonable quality and a floppy containing the Sonor software to use the sampler.

As an additional extra you get the Talking Canvas Junior software, but more about that later.

Byte Recorder at my school, where they had only one Beeb B and an A7000 in the area where I was working. The A7000 has 4MB and a 420MB hard drive, which was a more than adequate combination for the SBR. It is perfect for the school environment because of its portability and ease of use.

I used the accompanying Talking Canvas Junior program to create a page per pupil and include text, pictures and sound. I also created other programs for the pupils to use,
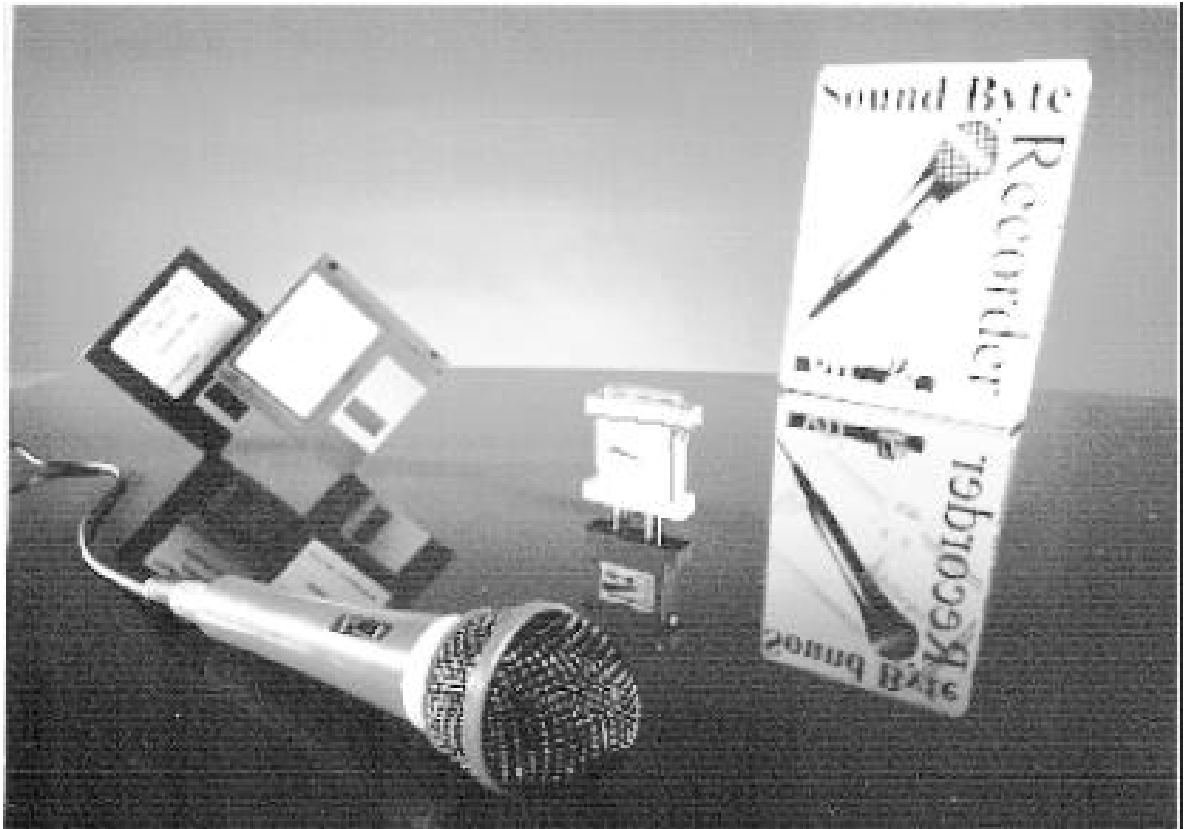
for example identifying animals for use in Key Stage 1. The SBR worked brilliantly and I managed to use it further by creating a village trail with pupils speaking the commentary.

National Curriculum

This integrated well in the National Curriculum for the speaking part of the Speaking and Listening Programme of Study in English.

The SBR works using Sonor. You click on the record button, edit the length you want to record and then return and speak!

The beauty of the package is that it is *that simple*. The children can play back and edit their work and save to hard disc. But do not be mistaken; this is quite a powerful package and not just for schools. Sonor has a lot more facilities for other people to use.

Talking Canvas

Talking Canvas is a program that can be compared to Magpie and Genesis as a simple multimedia authoring package and it does the job very well. I created several small programs for use in Key Stage 1 but found it too simplistic for anything more adventurous and so turned to Genesis
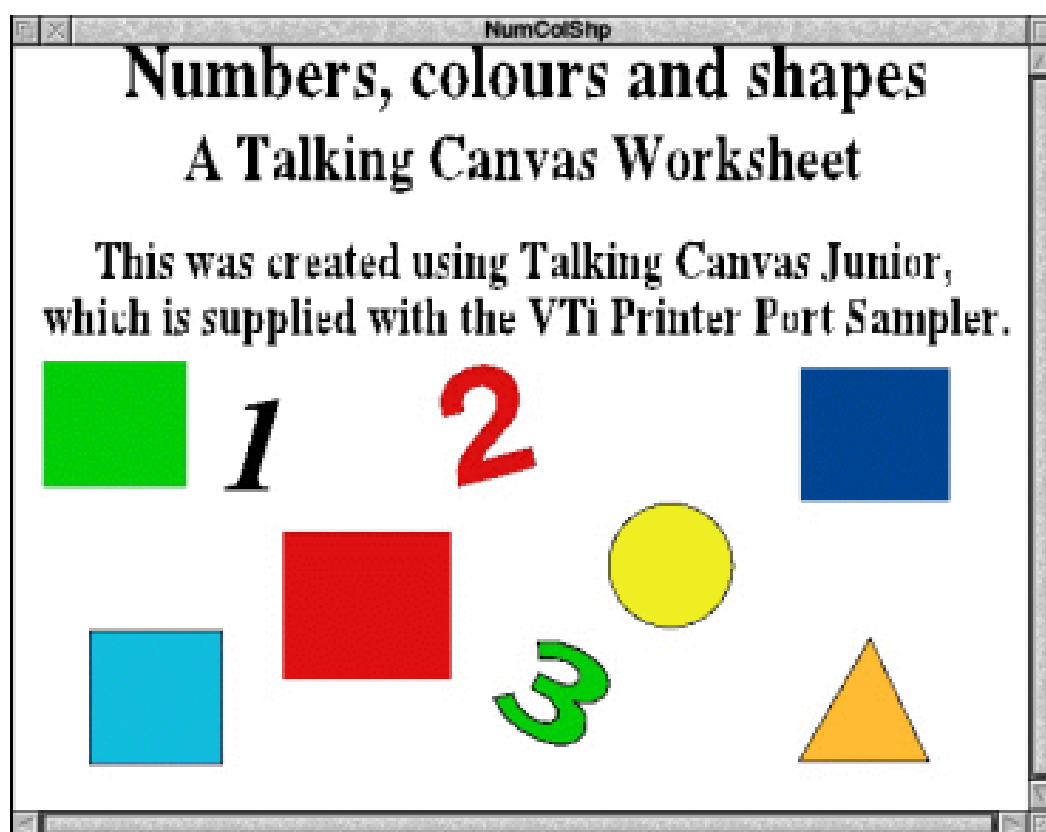
Talking Canvas, a simple multimedia authoring package, comes free.

for the village trial I did with my Juniors.

To do the Sound Byte Recorder justice, you have to see and hear it being used. So far, I have used it only in the home and the Infant/Junior school so I have presented only one view.

I would like to hear from others who have used the Sound Byte Recorder to learn what they used it for and perhaps print the replies in a further issue of Eureka.

The Sound Byte Recorder is very useful and is well worth the money. Well done —a brilliant product.

Sound Byte Recorder

Price: £49 +VAT

Site licence:

Supplier: Argo Interactive Ltd
7 Dukes Court, Chichester,
West Sussex, PO19 2FX

Tel: 01243 815815
Fax: 01243 880515
Email: enquiries@argonet.co.uk

Secret Lives: Simon Burrows

Simon Burrows is one of the stalwart figures of The ARM Club, having been in from almost the start of Club A3000. As magazine editor for the first five or so years of the Club's life, Simon has seen many that has continued ever since. He was then quickly snapped up by Accountancy firm Coopers & Lybrand, becoming one of their London IT Risk Management team. None of us are perfectly sure what

Membership Secretary Toby Smith writes about one of the Club's larger figures, our Treasurer — or at least this is the printable version of what he thinks.

of the Club's changes and has had a very great effect on its aims, directions and image.

On a personal level, I've know Simon since our shared school days in Leicestershire and, having been introduced to the club, was 'shepherded' (read set-up) by him onto the Committee. In fact, many of the Club's current officers owe their first introductions to Simon and the other 'high elders' of the Committee.

On the factual side, Simon graduated from Nottingham University in 1994 with a 2:1 B.Sc. in Computer Science, continuing a trend set up the previous year of Committee graduation results

this means, but it does seem to mean he's never in the same place at any two given times, probably a good career for a man who's never actually been able to stand still. If you watch carefully, you'll always see Simon's feet fidget! It has, on the down side, rather given him a habit for place name dropping. Phone conversations often start with "I'm in Switzerland" or "I'm at Wimbledon" with accompanying 'pock' and clapping sounds.

On the private side, Simon is usually game for a social after Committee meetings or Club events, though he will often dither as to whether he's coming. I could print to the world a

series of choice quotes from our last committee social, a pub crawl organised by yours truly, but considering he's doing the reciprocal article on me, I might not!

One of the Committee's current running jokes is the subject of Simon's Love Life (well, one of us has to have one!), a subject on which the man himself is rather reticent, which probably only adds to the mickey-taking. There were interesting comments recently when 'having to eat a picnic at Wimbledon with someone' dragged him away from an early start to a Committee meeting, and there has also been speculation as to why the nurse providing jabs for his latest foreign trip was described as "certainly not large and burly, I can see why foreign trips are popular".

In a Committee full of, ahem, 'colourful' characters, Simon has developed his own style; always one

Picnics at Wimbledon

for questioning precisely what merit a particular project has and a guaranteed source of firm views. It has often been said that our meetings would be shorter without him, but definitely less justified. Even when not physically present, we often have the benefit of Simon's thoughts by email, usually summarised to about five sheets worth of points. 'Burrows Speaks', despite being ceremoniously thrown into a bin at the start, can usually have quite an effect on the outcome!

To conclude, The ARM Club probably wouldn't be where and what it is today without Simon, and the Committee would definitely be very different —we'd at least have to pick on Dave Ruck more...

(Toby Smith has recently moved house as a result of realising that Simon would read this article!)

RIDICULOUS RHYMES

The Hoover and the Thermos entered our vocabulary because their companies marketed worthwhile inventions that were to change our lives. Sherston are perhaps not quite so famous but they have nevertheless found a place in the esteem of many a

and decidedly wacky animated and interactive poems for children of all ages..." —not to mention the adults, thought I, as I eagerly scrutinised the box. I decided to delay the reward by working my way through the paperwork first.

More laughs from Sherston with some potty poetry, but Edwina still leads the way, says Rilla Paterson, an enthusiastic member of the elephant' s fan club.

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computer operator owing to the hilarious antics of Edwina the Energetic Elephant.

I well remember an occasion at a computer club I attended, when a huddle of highly sophisticated grown men broke off from their upgrading, downloading and web surfing to embark on a meticulous journey through page after page of Edwina, just about wetting themselves in the process. So when I was asked to review Sherston' s Ridiculous Rhymes, I knew I was in for a treat.

The flyer declares: "Poetry bursts into life with these delightfully amusing

The short User Guide is very lucid; the Acorn section runs to only six sides of A5, other pages being relevant to users of Apple Macs and IBM/PCs.

The rhymes themselves, which are brilliantly written and illustrated by Tony De Saulles, are printed in a separate handy booklet. Finally, there is a short pamphlet entitled *Poetry in the Primary School*, by two highly articulate language consultants, which makes very interesting reading. My expectations ran just a little too high, however. I was preparing myself for another Edwina, and this was not to be.

They hadn't a clue what to do,
When they ran out of food at the zoo.
So the tigers and cheetahs
Caught all the zoo-keepers,
And cooked a magnificent stew!

Most animals prefer to eat both potatoes and zookeepers in their jackets.
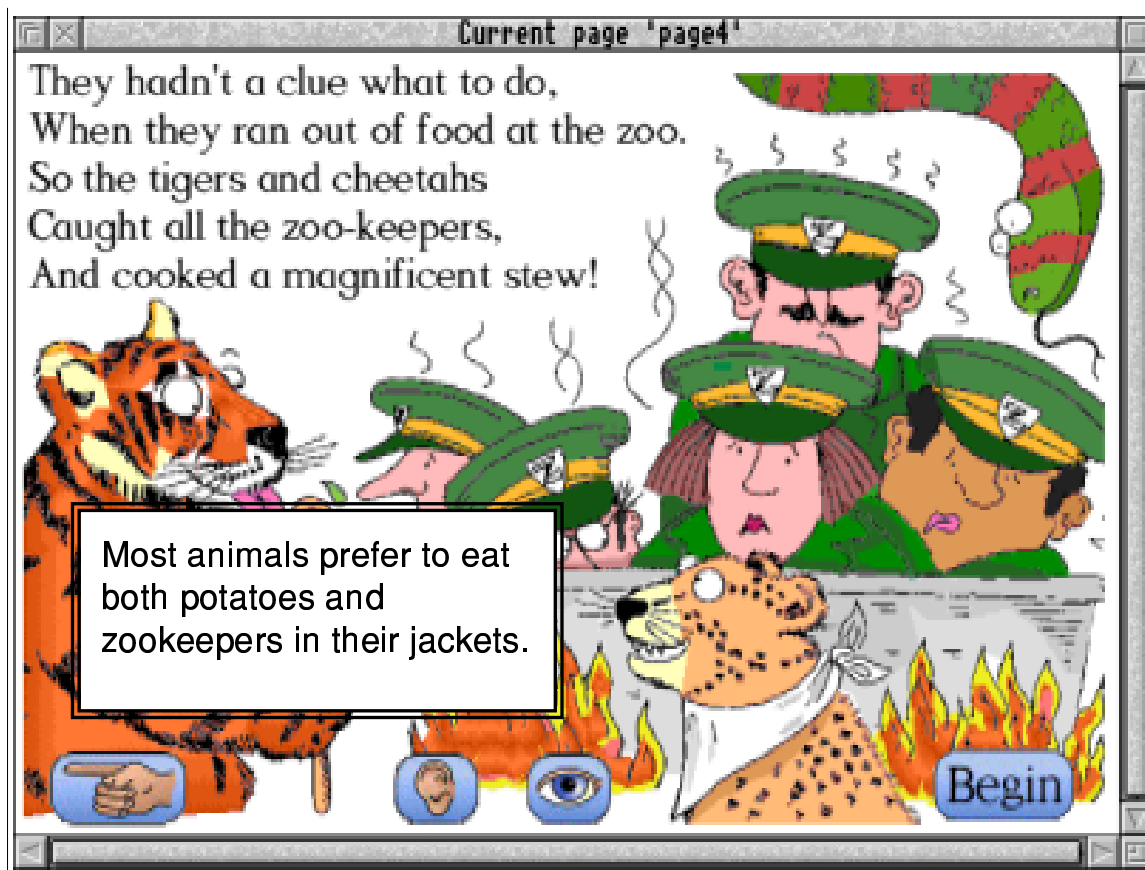
One of Tony De Saulles's poems, showing the 'howler' that appears when clicking on the tiger.

Does this matter? Well —I think it does in this case, and in order to justify this shortcoming I must briefly explain how the elephant story works, and how this new program differs from it.

Edwina is a 'Talking Activity Program'. The particular feature that Sherston programmed into Edwina that made the elephant such a useful reading tool was that when the child points the mouse at a word, the word speaks. The child can hear the chosen word over and over again and can make up sentences by changing the order. There are amazing animations and sound effects that make the story an absolute winner, but the overriding educational value is in the child' s ability to point the mouse at the word and hear it. This feature is not present in Ridiculous Rhymes, and this for me is a major disappointment. If only the words, especially the rhyming words, could be highlighted in the same way —what an excellent way to emphasise rhyme and rhythm. Has

not a highly educational and useful opportunity been lost here?

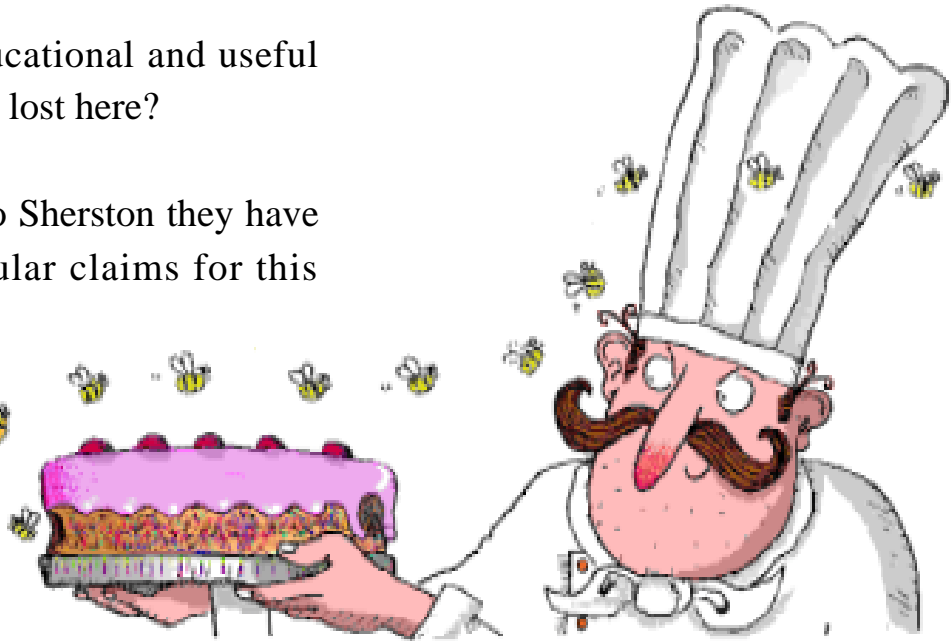Still, to be fair to Sherston they have made no particular claims for this software beyond the aim of "... helping teachers to encourage children' s enthusiasm, drawing them into the wider world of more thoughtful poetry. Ridiculous Rhymes are great fun, and children will enjoy reading poems of this type." This is certainly the case, so what do they have to offer and how is it made so enjoyable?

The package — so far so good

The Acorn version, which requires 2MB, comes on six discs containing the program and 12 poems. In spite of a threateningly large troubleshooting section in the User Guide, I had no difficulty in running it, both from my A5000 and from floppies. You just double click on !Fonts and !System, load up and laugh.

Each screen contains the text of the poem and an illustration. The controls are self-explanatory: the child clicks on an earplug to hear the poem read —by broadcaster and actor Tony Robinson, Blackadder' s "Baldrick" —and as he does so, each word is highlighted in colour.

All the poems are highly amusing and appealing to children. Take, for example, Monsieur Mort. He poisons his customers by dishing up meals full of black widow spiders, electric eels, piranhas —just the sort of stuff that children delight in. In another poem a zany grandma flattens a couple of cats with a cricket bat and converts them into bedroom slippers. Not essential reading for the animal rights lobby, perhaps, but children love it and they will therefore read on.

Then the real treat comes by clicking on the eyeball at the foot of each page. Monsieur Mort' s dish suddenly comes alive and starts heaving with venomous fauna, with wonderful sound effects buzzing round the screen and eliciting a conspiratorial laugh from the wicked chef as his moustache bounces up and down, all at the same time.

The graphics and sounds are of consistently high quality with every verse. Now and again you get an amusing afterthought built in when you are least expecting it. There is a wonderful moment when, just as you think the fun is over, a snail almost imperceptibly crawls out from an insect pie. In another instance a poisoned dog whimpers its last breath, followed by a final death-gulp. That sort of attention to detail is guaranteed to have even the most serious child completely paralysed with laughter. The prize goes to Mrs Orinoko. 'Mrs Orinoko feeds her hen on cocoa...'' and you should see what happens to the chocolate egg. Priceless.

The poems are read one verse at a time. A forward-pointing hand selects a new screen with further verses and, of course, more animations. A backward-pointing hand returns to the previous screen, and 'Begin' returns the user to the start. There are also bonuses on every page in the form of hidden 'howlers'. These are little anecdotes inside text bubbles which suddenly appear when you click round the screen. The only small reservation I have here is that the vocabulary contained in the howlers is more sophisticated than in the poems. So while the poems would be just right for children with special needs, some of the howlers would be beyond them.

The whole program is very easy to use, works well, and mostly at a good pace. Tony Robinson' s voice is authentic, and the sound effects generally are very convincing. There are just one or two uncomfortably long intervals at the end of some of the lines, as though the program is pausing to draw breath. This only happens when running from floppies, but it leaves gaps in the verse-speaking which are too long and an impatient child could lose interest here.

Useful additional features

The highlighting of words can be switched off, encouraging more able children to follow the words for themselves as the voice reads. The volume control can be lowered and this would certainly be quite useful in the classroom! A further facility allows the current page to be printed; a great asset since it enables the complete collection to be produced for classroom use.

Apparently the program does not work so well on some of the older, slower Acorns, such as the A3000s and A400 series, in that the word highlighting occasionally misses out some words. A 'Single Task' option obviates this difficulty, although with my A5000 I was not able to test this out.

Then there is the pamphlet entitled *Poetry in the Primary School*. This humble little booklet is extremely well written and gives all sorts of exciting ideas about how poetry might be explored in schools, with articles about verse writing and reading, word shapes, structures, group work, the poetry event, and all with the emphasis on creativity.

Opportunity lost

Sadly, the program bears little relationship to the content of this booklet and its inclusion raises expectations which are not realised. Ridiculous Rhymes is a first-rate collection of animated, interactive and humorous poems, but it does not teach children the skills of creative writing.

Enjoyable though it is, Sherston' s package, without the vital 'point and say' feature found in the lovely Edwina, has missed a golden opportunity. If future versions of Ridiculous Rhymes were to include it, Sherston would do great things for creativity in the classroom without losing the rightly acclaimed fun-factor which is fast becoming associated with their company name.

Product
Price: £29.95 +VAT (Post £3.50)
Site licence: £49.95 + VAT & Post
Supplier: Sherston Software Ltd,
Angel House, Sherston,
Malmesbury, Wiltshire, SN16 0LH
Tel: 01666 840433
Fax: 01666 840048
Email: sales@sherston.co.uk

The Tony Nash Collection

Medieval monks and Victorian engravers would have recognised the typefaces on The Tony Nash CD-ROM. Peter Jennings takes a late 20th century view of them.

For software that comes on a single CD-ROM, The Tony Nash Collection of fonts and associated graphics, from The Datafile, makes a very impressive arrival, in a massive JL5 size padded envelope.

The reason for the package's size is that it contains a ring binder holding six booklets, a laminated card and various other documents concerning the font families by Tony Nash and illuminated character sets byAndy Jeffery that make up the Collection. The documentation is neatly stored in individual plastic sleeves.

The fonts, supplied on a gold disc with a warning note about avoiding damaging it, are archived and a read-only version of ArcFS is enclosed. A ReadMe file explains that this is to avoid the CD restriction of having to use all capitals for the font names. Also on the disc are FrameIt, NewChars2, a directory of clip art, another of programs from the DataFile Web site, with everything duplicated in a backup directory.

The Collection contains all the fonts and clip art from the two sets of Gothic and Medieval Fonts and Decoration and both parts of the Engraver's Set (the Theodore Set and Copperplate), all previously issued separately on discs. Bought individually, these four packages would cost a total of £147.

The new Collection has some additional fonts and some of the original ones have had new weights added or have been updated. Also new are 13 sets of illuminated characters, by Andy Jeffery, all containing the alphabet in capital letters and an ampersand (&).

Among the documents in the first pocket of the ring binder is a folded

Font Families

Gothic and Medieval

Abbey

Amadeus

Bede

Cawl

Charlie

El-Cio

Karen

Kells

Priory

Scriptoria

VERSALS

Fonts are shown here at 24pt, except Doodles, which is 18pt.

Engraver's

Classic

Copper

(Doodles)

Theodore

New additions

Batard

Byro

Prima

Tuscany

A4 card with a brief introduction, illustrating the additions and changes. I would have liked a rather longer, more detailed, overview of what the package contains rather than have to search through the separate manuals to find which two or three booklets were appropriate for which fonts. The manuals, which are dated from 1993 to 1996, appear to be those supplied with the original packages and refer to disc numbers but this should not be a real problem once the user is familiar with the contents.

Gothic and Medieval

The Gothic and Medieval packages are intended to provide a tool kit of fonts and decoration which are either contemporary or complementary to each other.

The lettering handrawn by Monks and scribes in the Middle Ages was customised and embellished with decorative elements, such as the flourishes and swirls known as swashes. This can be done with these fonts and letters can also be ungrouped for customising and multi-colour printing. Borders, corners and other ornate graphic features are provided for panels and

The letter A from the 11 Illuminated Character Sets by Andy Jeffery.

page decorations and there are some Dingbats-type decorative characters. Some of the more elaborate ornamentation needs to be used at a large font size to appreciate the fine detailing. Four alphabets are supplied in individual letters as Draw files.

It is recommended that Draw or other vector graphics applications are used to get the best results and instructions and examples are provided.

Engraver's Set

Coming slightly more up to date, the Engraver's Set offers the Theodore fonts and Copperplate typefaces in the styles used by 18th and 19th century engravers, again with a selection of swashes, ornaments and frames for embellishment. There is a useful refinement to the set of capital letter Draw files. Each character is supplied in two versions, one to stand alone and the other with modified swashes on the right to allow space for other characters to follow.

Included are a font of decorative Doodles and eight FrameWorks fonts, containing decorative elements which allow intricate designs to be built up from the keyboard so that, for example, typing:

QWERT

in Frame7 of FrameWorks produces the frame top:

QWERT

This can be copied and rotated to make the bottom of the frame. Side lines can be created by typing and rotating lines of Ws in the same font.

This is where the FrameIt application can come into use. It is a Chars type application showing the individual FrameWorks characters, which can be clicked on to insert them into the text page at the cursor.

Due to the fineness of the lines in some of the Engraver's fonts there may be a break up when printing small sizes on a dot matrix machine.

Quality

With so many cheap or PD fonts available now, the quality of commercial fonts has to be very good to attract paying customers and these are. They have the scaffolding and hinting which PD fonts so often lack.

The amount of documentation is impressive but it would have been good to have had this updated and amalgamated into a single manual with an illustrated catalogue of the $25^1/_2$MB of clip art which spreads into nearly 50 sub-directories. However, this would have added to the cost and is probably not financially viable.

Multi-coloured Carol

Multi-coloured letters can be easily created in the Carol fonts.

H *The letter is chosen in the Carol.Overlay font and the first colour selected.*

H *The letter is then copied and one of the copies has its font changed to Carol.Simple.*

H *This is then given the second colour and moved onto the overlay letter.*

Celtic clip art

discount of £10 for each package they have, by sending the master discs or discs with their order. The discs will be returned.

The Tony Nash Collection would be of limited use for printing such as magazines or newsletters, but if you produce invitation cards, certificates, menus, carol sheets and similar stationery this CD could provide all the special fonts you need.

Anyone who has bought previous issues of the software can get a

The Tony Nash Collection
Price: £80 inclusive
Site licence:
Supplier: The Datafile
PO Box 175
Weston-Super-Mare, BS23 4PU
Tel/Fax: 01934 644046
Email:
sales@datafile.demon.co.uk
Web: www.datafile.demon.co.uk

The Spectrum CD

I remember the days —the good old days —when the bus fare down town was 8p, £1 notes and $\frac{1}{2}$p coins were legal tender and where the Spectrum and Beeb reigned supreme. But wait perhaps there is light at the end of the tunnel, we can all reminisce

Matthew Cook gets nostalgic for the rubber keys and garish borders of Spectrum days and finds a CD-ROM which brings it all back to him (except the slow loading).

again. The Spectrum CD is with us! It comes from Warm Silence Software (WSS), boasting '3000+ Classic Spectrum Games!'

How many pieces of software do you buy which slowly gets moved to the back of your disc box or gets deleted in the quest for more hard disc space?

Well, when I bought this CD, for the first week it did not leave the CD drive. I delved deep in to the good old days of rubber keys and colour clash, for the CD contains what I can see as almost every Spectrum game ever made with the emulators for Acorn machines, DOS, Windows, Atari and

Amiga. Spectrum emulators are also available from WSS.

The CD is divided into several directories. First, there is a directory with the games themself, split alphabetically into sub directories. On my machine, with a quad speed drive, they took a long time to open as there is a total of 276MB of games on the CD.

Another directory, Docs, contains more interesting information from the complete Spectrum manual to a guide to hacking and POKEing games (POKE is to Spectrums as The Hacker from Doggysoft is to Acorns). There are lots of interesting technical information too!

There is another directory, *Tools*, which contains associated tools for the various platforms and another, *Programs*, has the various emulators and more Tools.

Long views of loading screens are not emulated on CD.

This CD is excellent value and is a must for anyone that owned a Spectrum. If it was a rubber key or a +3 this will bring all the memories flooding back. The only thing the CD does not emulate is the slow loading from tape and the funny coloured loading bars in the border.

In the Pictures directory there are illustrations of the loading screens for quite a few games and also various scans of Sinclair ads, maps of games, pictures of machines, cassettee inlays, circuit diagrams (if you are handy with a soldering iron) and magazine covers from *CRASH* the Spectrum's equivalent of Acorn User when computer magazines cost 95p and carried a cover cassette.

Also on the CD there are 201 Windows games, 75 Amiga games, lottery programs and Spectrum games converted to run native under Windows and DOS.

Who needs 64MB and a StrongARM when there were 48K machines with rubber keys and colour clash?

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Inside The !Boot Directory

This month I am going to take you through the Risc PC boot-up sequence, showing you how it all works and fits together and how to customise it for your own use. If you do not own a Risc PC, do not despair; there will be much in this article that

behaviour can be altered.

On a PC, the boot-up sequence normally consists of hundreds of files, often rising into the thousands (because the operating system itself has to be booted up from disk). This

In the second part of his series on the Command Line Interpreter, Darren Grant explores the start up sequence in !Boot.

is of general interest. However, this article will assume you are using a Risc PC configured for a normal !Boot start up sequence.

So, what is the !Boot directory for? Well, if you reset the machine (by pressing Ctrl-Break, for instance) and hold down Shift for a few seconds, you will see the difference. Gone will be the smart backdrop, the high resolution mode, and all of the other nice customisations that you normally take for granted. In other words, the !Boot directory sets up your computer exactly the way you like it —your favourite backdrop, set of icons and all ways in which a computer's

has given boot-up customisation a bad name, but on Acorns nothing is too complicated and the !Boot directory is really no more than a collection of obey files. Ok, so my !Boot directory is over 24 megabytes large and contains over one thousand files, but that is mainly due to a few very large applications installed in it, none of which the user need be concerned with. The basic structure of the Boot directory is nothing too complicated; mainly just four main directories. *(See opposite.)*

An obey file is an ordinary file (easily created with Edit, for example) that simply contains a list of CLI

The main Boot directory with sub-directories.
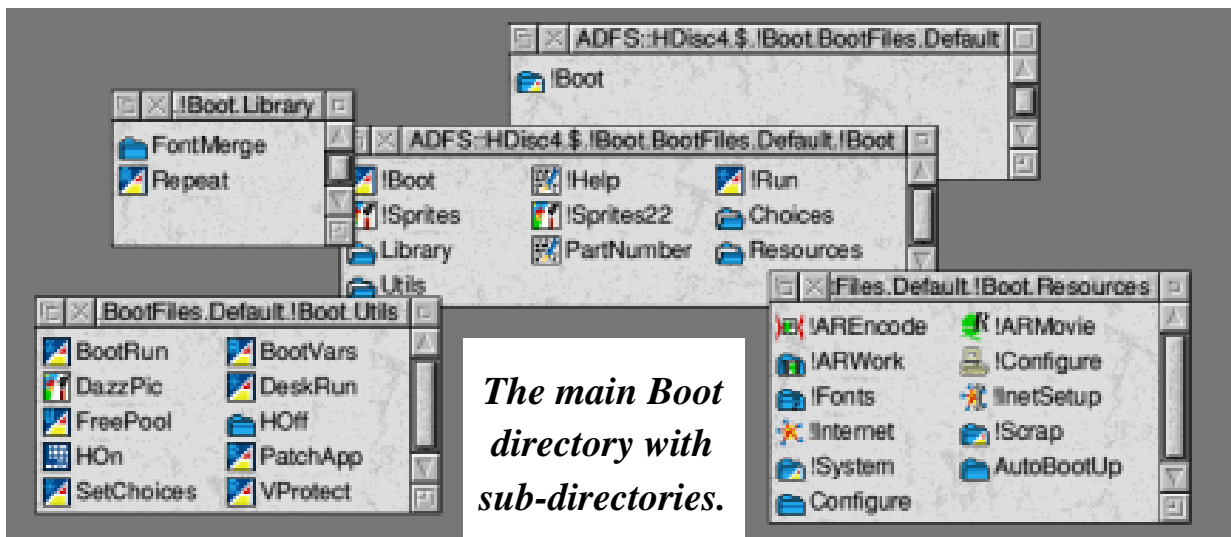
Commands that are to be executed in order (see last issue's article on the CLI).

For instance, create a new file in Edit (use Create.Obey from the iconbar menu), with the following text in it:

```
Echo <7>This is a catalogue:
Cat
Echo Now it has finished
```

If these commands are entered into the file and the file is saved and run, you will get the same effect as if you had typed those three commands directly into the Command Prompt. This article will assume you have a basic knowledge of how the CLI works, but will explain anything complex.

So, getting back to the !Boot

directory. If you open it up (hold down Shift and double-click on it), you will see an assorted range of files and directories. All of the *files* in !Boot can be ignored —it is the directories we are interested in. There will be:

• Choices
• Library
• Resources
• Utils

The directory you will be most interested in will be Choices, which houses all programs and files that you want to be loaded up before you start. It also holds various files to do with how the desktop looks when you start up. A screen shot of Choices is on the next page.

The main directory is called Boot and

Choices holds a lot of useful stuff.
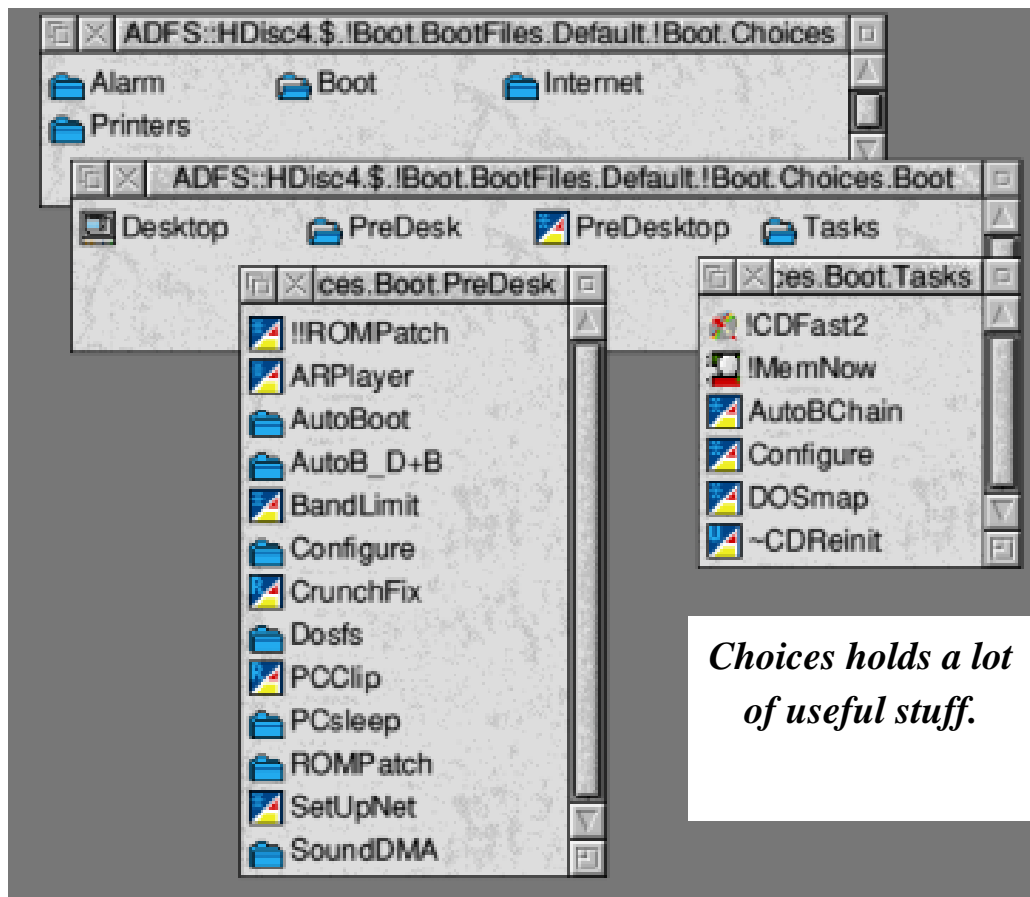
another directory that will be commonly found will be Printers, which houses printer definition files and one or two printer support modules. You will not normally need to bother altering any of these; printer setup files are, at best, described as a mess and any attempt to alter them normally results in a whole host of errors. This complexity of printer-setup is normal across most platforms, by the way. Other directories you will sometimes find will be Alarm, for holding saved Alarm files, and Internet, which holds special configuration files for users with Internet access. Within Boot, you will find two directories: PreDesk and Tasks and two files: PreDesktop and Desktop.

The main directory at the top of !Boot, called Library, is normally quite small and contains only one or two files for commonly used purposes. You can safely ignore this directory.

Resources holds several important applications and files, including:

• !System — used for holding

modules.

• !Scrap —temporary file storage — the contents of !Scrap.ScrapDirs.ScrapDir can be cleared out from time to time.

• !Fonts —fonts that are loaded at start up —includes the desktop font.

• !AREncode, !ARMovie and !ARWork —all to do with Acorn Replay.

• !Configure —to set the CMOS RAM settings. This is normally run when you double click on !Boot.

• !InetSetup and !Internet —for use if you have Internet access.

• Configure —holds backdrops, new modes, window icons, etc.

The final main directory in !Boot is Utils. You will not normally need to bother with this —very few files in it are Obey files that can be edited by hand —most are modules or utilities that deal with memory, virus protection, etc.

So, going back to Choices.Boot, we will start seeing how the boot-up sequence can be easily modified. As mentioned before, we have two files and two directories. If you look at the PreDesktop Obey file, we find that it is heavily commented and actually possesses only a few, well-chosen, commands. The first bunch of commands is just a few aliases (see last issue's article). After that comes a section for setting up paths in system variables. This has no pre-defined paths, but examples are given on how to create more. Unless you regularly need to save programs or whatever into deeply nested sub-directories, you will not generally need to bother with this section, although you can if you want. The main disadvantage is that there is a lot of updating to do whenever you tidy up your hard disk structure. After that comes a general section for options. If you have unusual or non-default *Copy preferences, for example, you might put them in here (as shown in the example given there).

An important section comes next. These are application that are to be added to Resources —accessed using the Apps icon on the iconbar. A default option is to install any application in $.Apps (Apps directory in the root of HDisc4). However, if you don't want to move large applications about, you can easily add your own lines. Simply copy the syntax of the already present line.

Finally, we have the Misc section. You can put anything you want in here. An example might be a command to run a sequence of sounds, using the Sound command (or just to run a sound file).

The only other file in this directory is the Desktop desktop boot file. Although this also contains many comments, it is quite short and does not normally need any altering. However, a heavily customised boot directory may need use of it, as always.

So, now that the basic structure of the Boot directory has been dealt with, how can it actually be utilised? An ideal case study just happens to be sitting on my hard disc, in the form of a utility called AutoBoot, written by no less than your's truly. This is a small application that allows multiple start-up configurations, done by holding down the key of your choice during start up. For instance if you hold down 'D', an obey file corresponding to the letter 'D' will be run, which could, for instance, load up the DDE applications. If someone else is using the computer, (or you have different uses for the computer)

they might hold down 'P', to load their favourite word-processor, or whatever.

This is done by having a few small, but well chosen files:

Choices.Boot.PreDesk.AutoBoot.!Run
(Absolute)
Choices.Boot.Tasks.AutoBChain
(Obey)
Resources.AutoBootUp.A (to Z)
(Obey)

The obey files named 'A' to 'Z' residing in the AutoBootUp subdirectory of Resources are simply the different obey files that will be run on each keypress. Therefore, most of them are empty and the only thing that needs to be done when configuring a new start-up procedure is to put the relevant commands (eg Filer_Run) into the relevant obey file.

When the system first starts, it will cycle through the PreDesk directory, running all !Run files found within directories. Therefore, when the AutoBoot directory is found, it will run the !Run file found within it. This is a small program that will simply scan for the keys 'A' to 'Z' and, if

found, will set the environment variable 'AutoBoot$FileToBoot' to this letter.

Next, each file in the Tasks directory is run, thus the AutoBChain obey file is executed. This obey file contains the single command:

```
If "<AutoBoot$FileToBoot>" <> ""
Then Filer_Run
<BootResources$Dir>.AutoBootUp.
<AutoBoot$FileToBoot>
```

Which simply examines the AutoBoot$FileToBoot variable and if it is set to a value (not equal to nothing) runs the file with that name in the Resources directory.

Thus with a very few small programs or files a comprehensive multiple boot-up configuration system can be made. In fact, this program, along with a suite of others, can be downloaded from my Web site at http://dialspace.dial.pipex.com/town/avenue/wi83

There are many other ways that the start-up sequence can be customised. For instance, in the Utils.BootRun obey file you will find, a few lines from the start, two lines beginning with Set Alias$Boot... The first few numbers in the sequence of control-characters used by the second Echo statement can be changed from |<11>| to |<0>| which will stop the text cursor moving to the start of the line when the list of programs is being printed out just after the computer has been reset. Thus, you will get a nice list of everything that is happening, which makes debugging of the boot up sequence a lot easier. I also have another line just before these two: ScreenLoad <Obey$Dir>.DazzPic which will simply take a sprite named 'DazzPic' (substitute whatever you want) and will instantly load this to the screen. This sprite is a montage of other sprites namely from the operating system, including the Acorn symbol ('switcher') and the ART logo ('artlogo'). So Windows users beware —Acorn users can have fancy start up screens too!

As always, I, or The ARM Club Technical Help Team, will be happy to help you with any technical queries you might have — address your queries to dgrant@dial.pipex.com or support@armclub.org.uk.

The Datafile PDCD 5

The fifth PD CD-ROM from the Datafile comes from a well stocked and seemingly well organised public domain library. The compiler, Dave McCartney, has checked every file and ensured that everything on the disc is StrongARM compatible. That

CD-ROMS keep coming from The Datafile. Peter Jennings finds their latest is full of the expected mixture of utilities, games and clip art plus some unusual extras.

meant opening 2,200 archives. New and updated programs were added up to the beginning of July.

The CD comes with a detailed index, accessed from a vertical button bar. There is an (unlabelled) icon for every directory, bringing up a list of files, each with a brief descriptive note. Interactive help is supported and there is an amazingly rapid search facility which can produce the first find in a fraction of a second.

The 15 subject directories contain: utilities, flight simulators, Zip 200 interpretor for Z-code programs with a selection of adventure games,

RasMol2 Molecular Graphics Program with scripts and PDF files, Etexts of 592 books released by the Gutenburg Project between January 1996 and June 1997, graphics files in TIFF, GIF and JPEG formats, games, educational programs, desktop games, animations and viewers, games from GEK Programs, demos, Internet access software and utilities, three Merlin raytraced pictures entered for a failed competition, and The Alternative Way of Life a 10-book religious work said to have taken 15 years to write.

The first reaction to that list may be that there is plenty to read on the long Winter evenings ahead but the first section to be explored is more likely to be the utilities and there is more than enough there to keep anyone browsing happily for weeks.

If, however, you want to spend your

time playing, you have a wide choice from the Games, Desktop, GEK and FlightSims directories plus the more entertaining Educational offerings.

Clip art usually features prominently on PD CDs. The Graphics directory here, strangely, does not contain any Draw files or sprites but only TIFF, GIF and JPEG files which have to be viewed with ChangeFSI. The emphasis is on space pictures, including some stunning shots from various NASA missions, and Sci Fi

buffs should be delighted with the collections from the various Star Trek series.

Apart from these, there are a few PhotoDesk images, a portfolio of Impressionist and other well known paintings and a set of 77 RAF crests.

The latter may seem of rather limited interest but if the first law of clip art is that, however big your collection, you never have just the graphic you need then the second law is probably that however obscure the subject it's exactly what someone, somewhere, is looking for.

The RasMol programs definitely come into this category. A ReadMe file explains that: 'RasMol is a molecular graphics program intended for the visualisation of proteins, nucleic acids and small molecules. The program is aimed at 'display, teaching and generation of publication quality

| Text Beginning | | | Utilities |
Flight simulators			Zip 2000
RasMol+Scripts			Gutenburg books
Graphics			Games
Education			Desktop Games
Animations			GEK Games
Demos			Internet
Merlin pictures			Alternative Way

The Quick Index button bar with directory icons.

images.' Some of these images have an attractive modern art look to them but you have got to understand them to appreciate their scientific value.

These more specialised directories, although worth highlighting, are however just a small part of a CD containing more than 495MB of software in 2,265 files. The utilities alone add up to more than 185MB, with variety enough to offer a good selection for all interests.

A JPEG image from 'some of the world's best art'
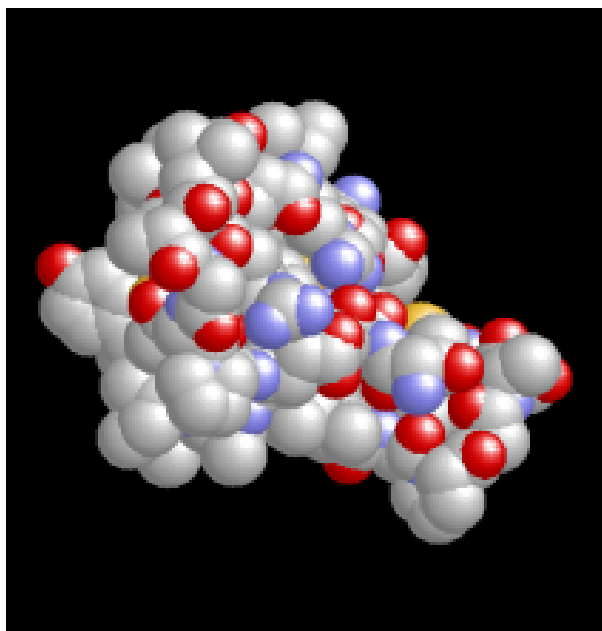
A RasMol image – science or art?

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Well I Never Knew It Did That!

Winter is approaching like an express train and, with it, the long cold nights.

At times like this our Acorns come in to their own, keeping us amused for many hours —and what better than to use a bit of your time to send in your 'Hints and Tips'! A word of

While away the winter nights with your Acorn and some more of those hints and tips from Geoff Lane that you might not have known about until now.

WARNING: don't ignore the rest of the family as this could give computer users a poor reputation.

Whether we like it or not, most of us at work or school have connections with PC computers and the Risc PCs can mostly run PC progs with no problem. We often have to work with PC material on our Acorns and as such if there are any 'tips' about the use of PCs in connection with Acorns they will be considered.

We do not want tips for PCs themselves but any hint to help in the use of PC media on Acorn machines may be of use to some members.

This brings me on to a suggestion sent in by Chris Lockst concerning Bob Nicholson's piece on fitting a new IDE hard drive. I will use Chris's own words as I cannot try out what he is suggesting.

After reading the article in the Eureka 21 about Bob Nicholson's piece on 'How Not To Fit A New IDE Drive' I was amazed to learn that he had to re-install DOS. This seems rather extreme and what I am about to pass on should help a great deal. It is to do with creating more space on Drive_C which is what Bob had intended.

I came across this in another Hint and Tips Section of another publication. Could this be considered for entry into the Well I Never Knew That column? (Sure can Chris.)

This is the easiest way to get more space on Drive_C.

Firstly create Drive_D of the desired size, using !PCConfig. Having done this run the PC Card Software and at the DOS prompt type:

format d: /s

This '/s' ensures correct copying of the system files. Now quit the PC Card, and ensure that Truncate is off by typing (after <f12> or from a task window)

configure truncate off

After returning to the desktop both filer windows should now be opened for Drive_C and Drive_D. Select all the files on Drive_C and deselect the system files (which are already on Drive_D). Drag the selection to Drive_D

When file copying has ceased, use !PCConfig to make Drive_D the only partition to be available and then run !PC. If everything has gone to plan you should now be a proud owner of a nice new and bigger DOS partition.

The old smaller Drive_C can now safely be deleted if all is well, and the larger Drive_D renamed to Drive_C and use !PCConfig to set it all up.

I'm sure that will help someone Chris.

My daughter Claudia pointed out something to me recently; if you hold down the 'shift' key and double click on a 'Data' file it will load into Edit. I've used Acorns since 1991 and, d'you know, 'I never knew it did that!' Very handy for loading Data files that haven't been converted into 'Text' files and in fact it will load *any* file into Edit.

Steven Rowe wrote in two hints:

1. Another way to load programs is to drag the file or icon down on to the icon bar; a simple alternative to double clicking.

2. To list any files open an Edit window; select the files you want to list by clicking once on the icon — use the right mouse button if you want to select more than one —then, just before you click on the last one, hold the 'shift' key down and drag the selected files to the Edit window.

Keep the 'shift' key held down and release the mouse button and the selected files will be listed in the Edit window (keep the 'shift' key pressed while the files are listing otherwise it will not list correctly).

This last 'tip' is *very* useful for inserting the full file paths for any programs that automatically load certain files, such as Boot files or certain music programs.

Two good 'uns there Steven.

I think one of the important features of a 'Hints and tips' page is simplicity. Anyone can give a complicated tip but for them to be suitable for inclusion in this page they need to be easy to understand and explain.

There have been some really useful tips in the past couple of years I have been doing this page and I hope they continue. It is your page and without your input it cannot be produced so please keep 'em coming.

Send them to Eureka or email direct to Geoff Lane at:
online@digibank.demon.co.uk

On the move ...

Some new addresses you may need for some companies going places.

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Using The SYS Statement In BASIC

M any of you will have looked at a BASIC program sometime and you might well have understood the vast majority of it but have been perplexed by the seemingly universally useful SYS statement.

commands, and not so much as a simple text-printing instruction exists in Assembler. Yet when it comes down to it, nearly all of the programs around are written in, or compiled to, Assembler.

Darren Grant explains how to gain access to the operating system's internal routines with one of the most useful keywords in BASIC.

This keyword seems to crop up everywhere and not actually have any apparent immediate use. However, it is probably one of the most useful keywords in the entire BASIC language and, without it, the total number of applications written for Acorn machines would be a fraction of what it is now.

The purpose of this keyword is to gain access to the operating system's internal routines. Anyone who has even just dabbled in Assembler knows that all he has available to him are a few instructions to manipulate numbers; nothing to draw anything, nothing to make a nice tune with, certainly no string-manipulation

However, BASIC does have all of the capabilities above. We have SOUND, ENVELOPE to make tunes with, we have DRAW, MOVE, PLOT, RECTANGLE and numerous others to include graphics in our programs. But one major thing that true BBC BASIC lacks is the capabilities of desktop programming —true RISC OS multi-tasking applications. That is probably the one area where the SYS command is used extensively in BASIC, as it provides the only way to create your own WIMP applications using just BBC BASIC.

So, the SYS command is used to gain access to the operating system's internal routines. In fact, these

internal routines are called software interrupts, or SWIs. The RISC OS operating system is ingeniously designed in the form of a central kernel and as many supplementary modules as need be. In fact, much of the RISC OS desktop is held in the modules: names such as 'WindowManager', 'ADFS', 'ScreenBlanker' and, of course, 'BASIC' should be fairly familiar to most users and, indeed, each of these is a module that will be displayed if you press F12 and type Modules or Help Modules.

Create extensions

Programmers can very easily create 'extensions' to the operating system if they wish; a module is not just a term for something deep and mysterious, it is actually a filetype. If you create a machine code program (in the BBC BASIC assembler, for instance), with the correct format and layout, and you assemble it into a filetype 'Module' (ffa), when run it will simply add itself to the list of modules currently residing in the computer's memory. This module could do anything from providing extra CLI commands to extra SWIs to extra sounds to acting as an entire program, multi-tasking or not!

But what you are probably wondering is how all this ties in with the SYS keyword. Well, I mentioned earlier that the SYS command is used to gain access to the operating system's internal routines, called SWIs. So, taking a very simple example, to call the SWI OS_PrettyPrint, you would use the following code:

```
SYS "OS_PrettyPrint", "Hello World"
```

OS_PrettyPrint will simply print out a string given in the first parameter, so this statement would print out 'Hello World'. To print out the string and create a new line, simply use:

```
SYS   "OS_PrettyPrint",   "Hello World"+CHR$13
```

Or whatever. The point is that the 'Hello World' part is just an ordinary string.

Every SWI has a name and a number. The name is divided up into two parts. The first part will always be the name of the module, or 'OS' for SWIs not provided by any module that resides in the operating system kernel. The first part will be followed by an underscore '_' and the name will end

with the second part —the SWI itself. In this example, it was the amusingly named 'PrettyPrint' but it could be anything. Some example SWI names include:

OS_ReadMonotonicTime
OS_SWINumberFromString
Wimp_OpenWinow
Wimp_CreateIcon
Wimp_ReportError
Font_SetFont Joystick_Read

Most SWI names, like the ones above, will be fairly explanatory in what they do and others will be immediately familiar to BASIC programmers: OS_BGet and OS_BPut, OS_Plot, and even OS_CLI.

I mentioned earlier that every SWI has a name and a number. For instance, OS_WriteC, which writes out a single character to the screen, is SWI number 0. OS_BPut is number 11, or &B in hexadecimal. Larger numbers are practical to write in hex: Wimp_Initialise is &400C0, or 262336 in denary.

BBC BASIC will understand both numbers and names. However, there is an important point to cover here. In order for the name to be converted to a number, it has to be converted, which is done using OS_SWINumberFromString. This takes time and if your program is speed-critical, then it is best either to use numbers, or at least the best possible compromise: assigning a variable to the number:

Wimp_CreateMenu% = &400D4
...
SYS Wimp_CreateMenu%,, block%, x%, y%

You can see how the number can be used, even though it is easily readable. Of course, BASIC assembler programs don't need to bother with this as the conversion is done during assembly and therefore the minimal time loss only happens once, when assembling the program into memory.

By now you will have gathered that the SYS statement can take a number of parameters. In fact, it can take up to 18 parameters but don't panic — it need take only one! (The first one is the SWI name or number). This will probably sound confusing but it is simply because any one SWI decides

exactly how many parameters it needs and ignores any that are missing. In fact, there is no such thing as a 'missing' parameter —the BASIC interpreter will very kindly fill in any missing parameters with the value 0, as demonstrated above, or in this example:

SYS "MyMod_AddFourNumbers", 1,, 2, 3

This mock-up SWI will add the four numbers passed in parameters #1 to #4. As parameter #2 is empty, it is substituted with 0, and the SWI will add up 1+0+2+3 which will give, not surprisingly, 6.

But what about finding out what the result is? To do this, the 'TO' keyword is used. Yes, the same one as in the FOR loop, but in a different context. Suppose our imaginary SWI returned the result of the calculation in the second 'output' parameter:

SYS "MyMod_AddFourNumbers", 1,, 2, 3 TO , result%

In this case, the newly-created variable (or existing already —it doesn't matter) will hold the value 5.

Again, the first 'output' parameter has been missed out, but as the SWI doesn't need this parameter, it just ignores it.

Registers

Up until now I have been a bit simplistic in my naming of things, so a little discussion is in order. Any operating system, right down to the dawn of computers, had any number of 'registers'. A register is simply like a temporary variable that will hold a number. It will hold this number until told to hold another number. The BBC Microcomputer had two registers named 'X' and 'Y' (and also the 'accumulator'). Things have moved on since then and the ARM processor provides around 30 registers but only 16 of them are available to the programmer normally, of which 14 are for general-manipulation, and in any case, only eight of them can be altered or read with the use of the SYS statement. Registers are generally referred to as R0 to R15. You might hear reference to the stack point, or SP, which is R13 (although it needn't be, it just normally is), the link register, or LR, which is R14, and also the program counter, or PC, which is R15.

Hence the numerous parameters of the SYS statement: eight are the 'input' registers, and eight are the 'output' registers. However, there are no such things as 'input' and 'output' registers: they are one and the same. So if a SWI existed which did nothing; that is the only instruction that existed was to end the subroutine, then calling:

SYS "MyMod_Dummy", 1, 2, 3 TO a%, b%, c%

Would make a%=1, b%=2 and c%=3.

So now that we've covered most of the stuff you'll need to know about SWIs and SYS, let's put it into action. Taking the 'technical specification' of a SWI, say, Wimp_CreateWindow, we have:

On entry:

R1 = Pointer to window block

On exit:

R0 = Window handle

'On entry' and 'On exit' mean on entry and exit to the block of code that is the SWI. In this case, they simply refer to the registers before and after the 'TO' statement. A window block in this case is simply a byte array filled with values, and a window handle is simply a number. So, once we had set up a window block (or loaded one from a templates file) we would call:

SYS   "Wimp_CreateWindow",, block% TO handle%

A more complex example: saving a block of memory as a file, using OS_File, would be:

On entry:

R0 = 0 or 10
R1 = Pointer to filename
if R0 = 0 :   R2 = Load address
                       R3 = Exec address
if R0 = 10:   R2 = Filetype
R4 = Start address
R5 = End address

On exit:

Registers are preserved.

In this case, we might call:

SYS 8,,"file",load%,exec%,start%,start%+length%

Remember that the number eight is simply the number for OS_File, and we have followed it with two commas, which means put the value 0 into R0. Some of you may be wondering how a string is supplied, even though the 16 registers only hold a number. Well, although R1 takes a pointer to a filename, we still have an actual string, and this is because BASIC will replace it with the address of the string in question in BASIC's memory. Of course, this could still be done manually:

```
DIM name% 50
$name% = "ram:$.file"
SYS 8,,name%,load%,exec%,start%,
start%+length%
```

But this is normally only needed when setting up a large byte array. Strings returned in a register will be converted in the same way, and these strings can be altered at will, but must never be extended.

Accessing the ARM's flags

There is one more aspect to the SYS statement I have not covered yet. If you remember, I said SYS took eighteen parameters. However, if we take one for the name or number, and take one for the name or number, and sixteen for the registers, it still leaves one left over. This is a method of accessing the ARM's flags. The ARM processor has five flags, each with a one-letter name. The flags are set to either true or false depending on the outcome of the SWI, or more accurately, simply the outcome of the last instruction before the routine exited (which, if you are writing your own modules, is why you should always exit with MOVS PC,LR or LDMFD SP!,{R0-R12,PC}^). The flags are:

N   Negative. The outcome was negative.

Z   Zero. The outcome of the instruction gave a result of zero.

C   Carry. This is for holding a carried bit. Literally, a digit was carried over in a calculation (such as with an LSR instruction, where the LSB was shifted into the carry, or in RRX where it was shifted into the carry but also copied into the bit 31).

V   Overflow. An overflow error occurred, but treat it as an indicator for 'an error'.

The flag that is of the most use is the V flag. If you prefix any SWI name with an 'X' it will turn it into the 'X

form'. This basically means that if an error occurs, it will not be reported, but simply the V flag will be set, and a suitable error message will be pointed to by R0. This is an easy way of 'catching' an error and dealing with it in a user-friendly fashion. The status of the ARM's flags can be read like this:

```
SYS "MyMod_Control", value%,
morevalues% TO outputvalues%,
etc% ; flags%
```

The V flag

As can be seen, suffixing the SYS statement with a semi-colon and a variable will put the state of the flags into this variable. Acorn have thoughtfully placed the V flag into bit 0 of the variable, so to return the bottom bit - the state of the overflow flag, use:

```
flags% AND 1
```

If this expression returns 1, an error occurred. If it returns 0, no error occurred. This can be used like the following:

```
SYS "MyMod_Control", value% TO
value% ; flags%
```

```
IF (flags% AND 1) * -1 = TRUE THEN
PRINT "An error occurred"
IF (flags% AND 1) * -1 = FALSE THEN
PRINT "No error occurred"
```

The actual order of the bits in the variable is %NZCV. But what happens if there are no input and output parameters? No problem, for instance:

```
SYS "OS_WriteC" TO ; status%
or
SYS 0 TO ; flags%
```

Of course, registers 0 to 8 will be filled in with 0 in this case.

This also leads to the Most Useless SWI Of All Time:

```
SYS "XOS_GenerateError"
```

This SWI will generate an error - but it doesn't! (Thanks to someone in Acorn User sometime for pointing that out!)

So, now that the syntax of the incredibly useful SYS statement has been covered, how about using some actual SWIs? Well, without any extra modules loaded into the machine,

Risc OS 3 comes with several hundred SWIs in the operating system, and there is no way even a long-lasting series will be able to cover a fraction of them. By far the best way to go about learning SWIs is simply to use them when you need them: to teach yourself WIMP programming, for instance, buy a book on the subject, or follow a series in a magazine, and you will find yourself using SWIs by the dozen.

All good programmers learn by examining other peoples programs. This will work well with finding out how SWIs work, or better still, purchase a package such as EventShell, which will create an entire WIMP program shell for you, and allow you to examine the result easily.

Purchase the PRMs

If you are intending to become a serious programmer, you should not hesitate to purchase the Programmer's Reference Manuals. At £100 they are not cheap, but they are the official Acorn reference manuals: a tome of over 3000 pages and at least four volumes (various updates have been published in the form of supplementary books), including a separate index and style guide: exactly what the 'look and feel' of desktop programs should be. These manuals contain details of every single SWI available to you, and much, much more.

Easiest and cheapest way

But by far the easiest (and cheapest) way to find out what all these SWIs do and how to use them is simply to get hold of a copy of StrongHelp by Guttorm Vik. Now up to version 2.03, it uses a form of hyper text (like that found on the Web) to form a wealth of information on SWIs, assembly, BASIC, C, C++, HTML and much more.

Many third party packages are now supplied with help files in the form of StrongHelp manuals, and text-editors such as Zap and StrongEd (naturally) provide keyword-help by interacting with it.

All in all, SWIs provide the key to programming Acorn computers, and with BBC BASIC's SYS keyword, most operating system features are now easily accessible to everybody.

Eureka Cover Discs: The Changes

As reported in the last issue of Eureka, we're changing the cover disc format. Looking through the membership database it is apparent that the majority of members have machines capable of reading High Density (1.6MB) floppy discs,

From this issue of the magazine we're providing High Density discs to those who we know can handle them. This information has come from the Club database —remember the 'Machine Type' section on the Membership Application and Renewal forms?

The disc which came with this issue of Eureka may be either High Density or Double Density but you should be able to read it on your machine, as Toby Smith explains.

so the Committee have decided that it would benefit members to use High Density discs with the magazine.

This means that we can put twice as much stuff onto the cover disc, for precisely the same price to you!

However, we're not going to ignore the fact that some of you have DD only machines that are still perfectly usable (can one say that of PCs of a similar age!). The Club exists to provide help and information for *all* Acorn users, so those with older machines definitely aren't going to be ditched by us —in fact you're getting special treatment.

• If your record in the Membership Database shows ownership of a High Density compatible machine (list at end) then you will have received a High Density 1.6MB disc.

• If your record doesn't show a High Density compatible machine, then you'll have received a Double Density 800K disc.

• If your record doesn't show any machine, we'll default to Double Density as any machine can read them —this way no-one should receive a disc that they can't read.

There are, naturally, going to be cases

where this database system doesn't work —people who can read HD disc may get DD discs as their records don't show the newer machine. If this has happened to you then please notify us and we'll provide you with a High Density disc with the next issue. Please send your new machine details, name and membership number to the Membership Secretary, either by email to membership@armclub.org.uk (preferred) or to the normal Freepost address, marked 'Details Update'.

•High Density Disc — aka HD, 1.6MB, F format. Identifiable by having two square holes at the top of the disc (one of which is the write protect switch) and an HD logo embossed on the upper side on the disc. Can be used in A3010, A3020, A4, A4000, A5000, A7000 and Risc PC machines. Older machines (A3000, A300 and A400 series) can't read them without a disc drive upgrade.

*Double Density Disc —aka DD, 800K, E format. Can be used in any Acorn machine. (except the Pocket Book, obviously)

Opportunities For Software Writers

The Club is always on the lookout for potential new software products that we might be able to add to our portfolio which currently includes StrongGuard, Game On!, TypeTutor and SmartCD+.

Anyone who has a program which they feel might be of suitable quality to be commercially viable is invited to contact me, either via the Freepost address or by email as tom@armclub.org.uk to discuss the matter —we do pay quite a reasonable royalty rate.

Equally anyone with ideas for programs that might fill a niche in the market, or who feels that they have time to spare to try their hand at programming a commercial program, is quite welcome to contact me with their ideas and maybe we can match ideas to programmers and make your idea a reality.

Tom Hughes

Drifter

Well, The Fourth Dimension have hit us again with another fast action game, but how does Drifter rate against their other hits such as Stunt Racer 2000 or Chocks Away?

AKF60, AKF85 or Other. This is so that the display will suit your monitor best. Once you get to the main menu you have the following choices:

Gary Parr takes to the air with the latest race game from The Fourth Dimension and finds some new controls to master since the days of Stunt Racer and Chocks Away.

The game comes in the usual black case, as with other 4th Dimension games.

The cover being very colourful gives a few screen shots and quotes from Acorn User and Archimedes World, both of which speak highly of Drifter.

The game can be played by most Acorn users, as the minimum spec is a 2MB machine, and it works on the newer Risc PC with or without StrongARM. It can be installed to hard disc to save on access speed but Drifter will still ask for the original disc to be in the drive.

When it is loaded, you will be asked for monitor type, the options being

Start: I wonder what that does?
Practice: Try any of the eight tracks.
Choose Craft: Decide which of the four you want to use.
Options: Where you change controls, sound etc.
Quit: Which takes you back to the desktop.

Controlling the craft is either by keyboard, mouse or joystick, the latter being on an A3010 only.

Keyboard Controls
Z: Rotate Left
X: Rotate Right
Return: Accelerate
L Alt: Thrust Left
R Alt: Thrust Right

Mouse Controls

Moving left/right rotates the craft
Middle Button: Accelerate
Left Button: Thrust Left
Right Button: Thrust Right

General

Space: Fire Missile
P: Pause
Q: Quit Race

Each craft has the same controls. Only Risc PC users can use the fourth craft, which is faster and more agile than the others. On the tracks there are some special tiles that, when passed over, cause things to happen such as boost or spin the craft. It can take a while to get used to the controls of the ship at first as it is a new concept since Chocks and similar games.

The sound and graphics in this game are very good and many of my friends who have PCs said that they wish their games could sound and look as good. They were also amazed that it works on such a low memory machine.

The game consists of eight levels where you race against other crafts. You need to finish first or second to go through to the next level. Ten points are awarded for coming first and five for second place. If you want to clear the high table screen 4D will do it for you at a cost of £5.

Sadly, I found that it didn' t come up to the normal standard I expect from 4D. It is a shame that there isn' t a multi-player option or even an option to load in new levels as you can on Stunt Racer and Chocks. These are things which I hope may be added to future versions. I found that after a while the game became repetitive, which is a shame as it seems a lot of work has gone into it. It did, however, keep the younger members of my family occupied and they found excellent.

I' ve always liked 4D games and this one will not change my view of their excellent range.

Drifter
Price: £34.95 inc VAT
Supplier: The Fourth Dimension
PO. Box 4444, Port St. Mary
Isle of Man IM99 7RS
Tel: 01624 836744
Fax: 01624 836745
Email: 4d@rsenter.demon.co.uk

Using The Toolbox From BASIC

The next stage in the development is to add some useful functionality to the program to get it to set up the main window before showing it when the user clicks on the icon bar icon. In order to do this, the program has to

Memory Block & Array Declaration
The first addition to the code is the declaration of memory for doing various time conversions and arrays required to hold the diary events. *(See **Prog A, opposite**).* These follow the

---

The diary begins taking shape as Mark Smith continues his series by adding some functions to the Toolbox shell.

---

know when the window is about to be shown. To achieve this, we can make the action of showing the window deliver an event to the program. We are going to use another programmer defined event for this: event number 1.

If you load the resources into ResEd, double click on Diary and bring up the Main Properties dialogue for the window (from the menu, or Ctrl W), you will see that events can be generated when the window is shown or hidden. Initially, both will be set to 'None'. Click on the 'Other' radio button for delivery of an event before the window is shown and type &1 in the writable icon on the right. Click OK and save the resources. Now we can then get on with the coding.

'Dimension arrays' section at the start of the program.

TimeBlock% points at a 5 byte area of memory reserved for holding current time in standard RISC OS real time format (centiseconds since 00:00:00 1st Jan 1900). TimeString% points at a block of memory to hold a date as a string. OrdBlock% points at a 36 byte area of memory for holding time ordinals for conversion to or from standard RISC OS format. Time ordinals include a selection of useful quantities such as which day of the week, month and year a time is as well as which month of the year, which year and time of day in hours, minutes and seconds.

```
REM Reserve some space for time structures
TimeStrLen%=128
DIM TimeBlock% 5, TimeString% TimeStrLen%
DIM OrdBlock% 36


REM Reserve some space for diary entry structures
MaxEvents%=1000
DIM Start%(MaxEvents%) : REM Event start, days since 1st Jan 1900
DIM End%(MaxEvents%)   : REM Event end, days since 1st Jan 1900
DIM WkDay%(MaxEvents%) : REM Day of week (1-7), 0 for any day
DIM Day%(MaxEvents%)   : REM Day of month (1-31), 0 for any day
DIM Month%(MaxEvents%) : REM Month of year (1-12), 0 for any month
DIM Descript$(MaxEvents%) : REM Event description
```

<div style="text-align:right">**Prog A**</div>

In order to store repeating diary events over a given time period with interval options as given in the event editor dialogue box, 6 arrays are used to store various details of event timing and a description of the event to be displayed for every day that it occurs.

PROCinit

The initialisation procedure now needs to be extended to initialise the contents of the diary event arrays. We also need a variable to hold the number of events currently defined, which is initially set to 0:

```
REM Set default event array entries
Start%()=&7FFFFFFF
End%()=&7FFFFFFF
```

```
WkDay%()=0
Day%()=0
Month%()=0
Descript$()=""  Events%=0
```

By setting the start and end times for undefined events to be &7FFFFFFF (the maximum number which a BASIC integer variable can hold), this ensures that they will never appear in the diary. That number of days after the start of 1900 equates to some time in the year 5885416, well outside the range of dates that RISC OS can cope with! Events% holds the number of currently defined events.

We also need to set up some constants which define component IDs of

gadgets in the windows that the program needs to know and also method codes that we will be using. Methods are a way of controlling the user interface from the program. The ones we need initially are those to get and set a gadget's flags and to set the contents of a display field. We also need to know which flag bit is used to indicate that a gadget is faded.

```
REM Set up constants for methods
used
gadget_getflags%=64
gadget_setflags%=65
displayfield_setvalue%=448

REM Set up constants with
component IDs
diary_today%=1
diary_yesterday%=2
diary_tomorrow%=3
diary_todayevent%=&101
diary_todaylastevent%=&102
diary_todaynextevent%=&103
diary_deleteevent%=&104
diary_editevent%=&105
diary_newevent%=&106
diary_eventdate%=&201
diary_event%=&202
diary_lastevent%=&203
diary_nextevent%=&204
```

```
REM Misc constants
gadgetflags_faded%=(1<<31)
```

Since BASIC doesn't explicitly support defined constants, we are using variables to hold these definitions. The value of these variable does not change once they have been initialised.

PROCfade & PROCunfade

Two new miscellaneous functions are defined to fade and unfade gadgets, given object and component IDs. These functions use two toolbox methods. First, they must read the gadget's current flags using the toolbox method 'gadget_getflags'. Then they set new flags with the faded bit either set (for PROCfade) or unset (for PROCunfade) using 'gadget_setflags'. Toolbox methods are executed using SYS "Toolbox_ObjectMiscOp".

Full details about Toolbox_ObjectMiscOp and the various methods you can use are given in the User Interface Toolbox manual supplied with Acorn C/C++. For use from BASIC, the parameters passed in R0-R7 are specified following

Prog B

SYS 'Toolbox_ObjectMiscOp' separated by commas. Parameters passed back from the call may be placed in variables following a TO keyword, again separated by commas.

Toolbox_ObjectMiscOp requires the following parameters on entry:

R0 = Flags
R1 = Object ID
R2 = Method code
R3 onwards may contain method specific data.

R0 may be used to pass back method specific data.

In the case of gadget_getflags and gadget_setflags, the flags passed in R0 aren't used, so are set to zero.

This may sound strange, but the flags in R0 are reserved for controlling the exact behaviour of the method. The gadget flags are passed into gadget_setflags in R4 and back from gadget_getflags in R0 and it is one of these that controls whether or not the gadget is faded. In both cases, R3 is used to pass in the component ID of the gadget concerned. *(See Prog B above).*

PROCdiary_showing

When the user clicks on the icon bar icon to show the main diary window, the program needs to find out the current time and set up the window accordingly:

```
REM ****** Diary Procedures &
Functions ******


DEFPROCdiary_showing
REM This procedure is called every
time the main diary window
REM is about to be shown.


REM First, work out what the current
date & time is
?TimeBlock%=3
SYS "OS_Word",14,TimeBlock%


REM Set diary window object ID to be
that   of   object   being   shown
diary_objectid%=IDs%!16


REM And update display prior to
showing
PROCdiary_updatedisplay
ENDPROC
```

"OS_Word" 14,3 reads the current time from the real time clock. The ID block pointed to by IDs% holds information about the objects and components a Toolbox or WIMP event relates to. The most important ones are IDs%!16 and IDs%!20 which refer to the object and component ID respectively directly related to the event which has been raised. In this case, the object ID is that of the window being shown and the component ID is meaningless.

In order for this procedure to be called when the main diary window is shown, we need to add a line to the toolbox procedure definition to call it when event 1 is raised:

```
 DEFPROCtoolbox


REM Find out which Toolbox event
has been received
CASE Block%!8 OF

  REM First consider programmer
specified events
  REM These are specified using
ResEd, normally in place
   REM of default events. It is
suggested that events 1
   REM upwards are used for client
specific services and
  REM &FFFF downwards for services
common to many clients
   REM e.g.
```

WHEN 1:PROCdiary_showing

     WHEN &FFFF:quit=TRUE
     REM The quit option in the icon bar menu is always made
     REM to generate toolbox event &FFFF

PROCdiary_updatedisplay

This is the procedure *(See Prog C, pages 56 to 58)* which actually updates the contents of the main diary window when it is shown, or when the user changes the date. It updates the current date display and works out if there any diary events scheduled for that day. If so, the first one is displayed. If there are no events scheduled for the current date, the delete and edit event buttons are faded.

Since the first event is displayed, the button to move back to the previous event is faded. If there isn't more than one event scheduled for the current date, the next event button is also faded. The status of the previous, current and next events is defined in three variables:

PreviousEvent% CurrentEvent% NextEvent%

In each case a value of 0 indicates that there isn't one, otherwise they contain an event number scheduled for the current date.

This procedure makes extensive use of Territory SYS calls. These return information based on the time zone & language for the currently configured territory. This is so that the current date is always correctly identified wherever you are, assuming that the correct territory has been configured and that it is displayed in the appropriate language.

Eventually this procedure will also update the 'Coming up' events, but that is still to be implemented.

With these changes in place, you should now be able to run the updated application. As usual, it is complete on the Eureka 24 disc. You won't see a great deal of difference yet, except for the fact that the main diary window should appear with the correct date in it, and that the event description field will be blank and both the left and the right adjuster arrows will be faded along with the Delete and Edit buttons.

DEFPROCdiary_updatedisplay

REM This procedure is called whenever the main diary window is shown (to show the current date) or when they day being shown is changed.

REM Declare local variables
LOCAL YS1900%,A%
REM Get 'today' in string format
SYS "Territory_ConvertDateAndTime",-1,TimeBlock%,TimeString%,TimeStrLen%,"%W3, %DY %M3 %CE%YR"
REM And display it in the window
SYS "Toolbox_ObjectMiscOp",,diary_objectid%,displayfield_setvalue%,diary_today%,TimeString%

REM Work out current day ordinals
SYS "Territory_ConvertTimeToOrdinals",-1,TimeBlock%,OrdBlock%

REM Get days since 1st Jan 1900   REM 365*Whole years since 1900+Leap years+Days since start year   YS1900%=OrdBlock%!24-1900
DaysPassed%=365*YS1900%+((YS1900%+3) DIV 4)+OrdBlock%!32   REM Correct for 2100 and 2200 not being leap years
IF YS1900%>200 THEN DaysPassed%-=1
IF YS1900%>300 THEN DaysPassed%-=1

REM Get day of week   DayWeek%=OrdBlock%!28

REM Get day of month   DayMonth%=OrdBlock%!16

REM Get Month of year   MonthYear%=OrdBlock%!20

REM Set up todays events   PreviousEvent%=0
NextEvent%=0
CurrentEvent%=0

```
REM Search for first event and make it current
A%=1
WHILE (A%<=Events%) AND (CurrentEvent%=0)
  IF DaysPassed%>=Start%(A%) AND DaysPassed%<=End%(A%) THEN
     IF WkDay%(A%)=0 OR WkDay%(A%)=DayWeek% THEN
      IF Day%(A%)=0 OR Day%(A%)=DayMonth% THEN
       IF Month%(A%)=0 OR Month%(A%)=MonthYear% THEN
          CurrentEvent%=A%
       ENDIF
      ENDIF
     ENDIF
  ENDIF
  A%+=1
ENDWHILE


REM Search for next event
WHILE (A%<=Events%) AND (NextEvent%=0)
   IF DaysPassed%>=Start%(A%) AND DaysPassed%<=End%(A%) THEN
       IF WkDay%(A%)=0 OR WkDay%(A%)=DayWeek% THEN
       IF Day%(A%)=0 OR Day%(A%)=DayMonth% THEN
        IF Month%(A%)=0 OR Month%(A%)=MonthYear% THEN
           NextEvent%=A%
        ENDIF
       ENDIF
      ENDIF
   ENDIF
   A%+=1
ENDWHILE


REM Grey out previous today event button, as it shows first to start with
PROCfade(diary_objectid%,diary_todaylastevent%)
```

```
REM Fill in event description with that of current event.
REM Leave it empty if there is no current event and fade
REM Delete and Edit event buttons.   IF CurrentEvent%<>0 THEN
  SYS "Toolbox_ObjectMiscOp",,diary_objectid%,displayfield_setvalue%,diary
_todayevent%,Descript$(CurrentEvent%)
  PROCunfade(diary_objectid%,diary_deleteevent%)
  PROCunfade(diary_objectid%,diary_editevent%)
ELSE
  SYS "Toolbox_ObjectMiscOp",,diary_objectid%,displayfield_setvalue%,diary
_todayevent%,""
  PROCfade(diary_objectid%,diary_deleteevent%)
  PROCfade(diary_objectid%,diary_editevent%)
ENDIF

REM If there is a next event, unfade the next event button.
REM Otherwise fade it.
IF NextEvent%<>0 THEN
  PROCunfade(diary_objectid%,diary_todaynextevent%)
ELSE
  PROCfade(diary_objectid%,diary_todaynextevent%)
ENDIF

ENDPROC
```

In order to test that an event will appear correctly, you can create a dummy event in PROCinit, following the point where the arrays are initialised:

```
Start%(1)=0
Descript$(1)="Test Event"
Events%=1
```

This will create an event which occurs every single day and should appear in the main diary window.

Next time, we'll add the functionality to step through days and events and also to create an event. Until then you might like to have a go at adding it, or thinking about how it might be done.

The Midlands Acorn Show

At The National Motorcycle Museum

Just off Junction 6 of the M42

Saturday 6th December 1997

10am to 4pm

- The ARM Club
- Acorn
- Akalat Publishing
- APDL
- Argonet
- CSH
- Creative Curriculum Software
- Eesox
- Fabis Computing
- The Fourth Dimension
- Innovative Media Solutions

- Resource
- R-Comp
- Longman Logotron
- Maudens Computer Sales
- Raspsoft
- Sherston Software
- SpaceTech
- Topologika
- Circle Software
- Xdevelopments
- Xemplar

Admission £1.50 (Club members £1). Accompanied children under 16 free.

To exhibit at the show, contact the organiser, Ralph Sillett, at
ralph@armclub.org.uk

Psion Series 5

The first difference between the new Psion Series 5 and the previous Psion/Pocket Book models is external —the slightly larger Series 5 does feel very similar, but has a slightly rubbery touch compared to

applications and a new bitmap drawing program. Psion provide a pen/stylus that slots into the back of the case but fingers, sticks, pen tops etc all work as well. The touch screen is a really serious bonus and after a bit

Toby Smith devotes his column to his new toy — a Psion Series 5 — after a minor repair threatened to stop play for an agonising two weeks.

previous models. It's about the same size though, so should fit snuggly in cases designed for the older machines without any trouble.

On opening the Series 5, most of the real advancements are immediately apparent. The keyboard and screen now pivot differently to slide out a full coverage keyboard, which should definitely be easier to type on, especially for the larger fingered amongst us!

The Series 5 screen, which covers almost all of the available space, is now touch sensitive, allowing easier navigation, easier use of the menus, touch sensitive tool bars in all

of acclimatization, is a real benefit to quick and easy use, especially 'on the hoof'.

The screen is also backlit —in low lighting conditions you can light it up like a watch face, which is very useful, even if it does hum a bit.

The new Windows Explorer style folders-and-files interface doesn't take all that much adjusting to, especially as I've been used to the Acorn filing system, where we've been able to arrange our files as we wish and let the applications catch them on loading for as long as we've had RISC OS.

Early bugs

Time for a few problems though. It would appear that some of the earlier machines did have some obscure-but-annoying application bugs, although most of these have now been resolved. My stylus catch broke after only about four days of use, the annoyance of which was compounded by the two week repair waiting list from Psion —I'd advise buying from somewhere that will swap any faulty machines, as two weeks without your new toy is my definition of sheer hell!

My source, Exportech of SW London (0181 682 3313) happily sorted this out though, for which I am heartily grateful.

Unfortunately most of the existing software won't work on the new machines (the conversion from 16 to 32 bits being the biggest barrier) but we should see Five-capable versions of most applications slowly arrive as the appropriate people upgrade. You can always re-compile the software if you can get the source code anyway!

Continuing on the software front, it is noticeable that most of the supplied Psion applications have been subject to a welcome degree of simplification. Welcome for the average user, anyway. Even simple operations in the Pocket Book 2/3a/3c Agenda/Schedule and word processor necessitated filling out quite complex dialogs and skipping past seldom-used options. These have been reorganised on the Five to make life simpler for less-expert users. 'Power' users may well be slightly disappointed by Psion's direction here but on the whole I don't find this too much of a problem.

E-mail software lacking

One other blot on the software scene is the non-appearance of the promised internet e-mail software and the lack of such will rule out the Series 5 in the short term for significant numbers of people. The sooner this is available the better, as this is the only area in which Psion's competitors with their Win CE machines score points.The availability of free mail and browsed software will make the Five a true 'killer' product, though many stores have reported that sales of Win CE machines have plummeted (often to none) since the Series 5 hit the shelves. The Psion 5 is supplied

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complete with the new-style data transfer cable (gone is the old soap-on-the-rope!) and a CD of PsiWin; conversion software for Windows 95/NT, which will run happily on either of those Operating Systems on a PC card.Unfortunately no native Acorn software exists, or appears to be on the horizon (updates to PocketFS would have this columnist, for one, eating headgear).

Conversion suite

A Psion 5 conversion suite, however, has been announced by Innovative Media Solutions, with a Psion 5 drawing converter already in existence. At the time of going to press, however, I can't say quite how far this project may go. A complete data transfer and conversion suite would be ideal of course but a conversion only program would benefit those with both Psion 5 (or 3c for that matter) and a PC card.

If you are feeling like buying a Psion 5, then I would advise most people to go for it. Those upgrading may wish to wait for any applications they are particularly fond of to be converted. I for one am at a bit of a loss without my accounts software.

Mains adapter

I'd advise buying a mains supply too, as these are always useful, especially during file transfer.

However, Pocket Book Corner has been notified of a problem with the new Series 5 Mains adapters. They've been recalled and replaced, but if you've bought one, Psion are offering a replacement. If you unit has the word 'MAINY' printed in green on the underside, then you are recommended not to use it and to contact Psion on 0800 018 6637, who'll then arrange for a replacement to be sent.

Psion Series 5
Price: 4MB £439.95
        8MB £499.95 (inc VAT)
complete with link cable and PC conversion software.
(Have been seen sold at £480)
Supplier: Psion UK plc
Alexander House
85 Frampton Street
London NW8 8NQ
Tel: 0171 262 5580
Fax: 0171 258 7342
Web: www.psion.com

Around The Clubs

The Oxford Acorn User Group
Reporter: Matthew Bloch

The OAUG has spawned a pretty consistent lot of programmers and we like to think our collective productivity is due to the shared

Advice, tea and (once) champagne come free at Oxford and there are invitations for Acorn users to join a new group in the Manchester area or a club in Germany.

contacts and information we can swap through the group's weekly meetings. Programs written by current and ex-members include: TableCalc, MovieFS, Bloxed, DeskLib, Swarm and the ubiquitous Zap, so there is a large knowledge base to draw on.

Although we are mainly programmers, or people with a knowledge of the subject, we're all fairly broad-minded and welcome all ranges of age and ability with open arms and hot tea. My first experience of it was being introduced to one of the meetings where Julian was leaving and was passing around champagne in mugs; though I stress

this hasn't happened again since! We exchanged ideas and biscuits and found out about the various pieces of software members were working on.

After a while I'd found someone to help me install RiscBSD and now, after two years, I've made quite a few useful contacts and good friends.

Acorn representatives have popped down on more than one occasion to give demonstrations. When the StrongARM was released they showed it off in Trinity College, when we encouraged the Wintel masses to come along and be converted. Before that, they brought down one of the first Hydra boards to show.

There's never a shortage of rumours, conspiracy theories or camomile tea, though we do encourage offerings of food or drink to be brought to meetings to ease the strain on the host.

Last (academic) year's host was Thomas Down, who held the meetings on a Thursday evening in his room in Trinity. This year we're still undecided as to who will martyr themselves for the cause, though people on the mailing list will find out soon enough.

Membership is free, and consists of being added to the mailing list, where we announce meetings. There's no obligation to do anything, though we would appreciate your presence occasionally. Do email us if you'd like to join:

<aug@tailor.linc.ox.ac.uk>

Manchester Acorn User Group
Reporter: Dan Shimmin

The first meeting of a proposed Acorn user group for the Manchester area is to be held some time after Acorn World. The speaker will most likely be Chris Cox from Acorn.

The venue is still being finalised, as we're trying to balance the various advantages of space, convenience for public transport, a central location, and lots of Risc PCs on site!

Those who've offered to visit the group include the Editors of Acorn User and Archive magazines, the author of the forthcoming Acorn game *Destiny*, and a number of other illustrious personalities from the Acorn scene.

Anyone interested should e-mail Thomas Lowe and preferably include details of where they'll most likely be travelling in from (possible venues have included Swinton, Rochdale, and Bury!), and what day of the week would be most convenient for them.

Those who don't have access to e-mail can phone me (Dan) on 01206 853050, but should be warned that that number is nowhere near Manchester, and they may have to be persistent in order to get through.

Thomas and I would also be extremely pleased to hear from anyone prepared to help in organising and generally getting things off the ground.

The MAUG web site is at www.cybernexus.demon.co.uk/maug/

Email: thomas.lowe@btinternet.com

The Arche Acorn User Club
Reporter: Carlos Michael Santillán

The Arche Acorn User Club e. V. is one of two German user groups. The Arche organizes a meeting in Essen, in the west of Germany, every two months. There, all members and guests exchange news and their experiences and problems with the Archimedes and Risc PC.

The meetings are held on the second Saturday of every even month. The next date is on December the 13th 1997. Everyone is invited to the meeting with or without an Acorn computer. The event starts at 1pm at the "Haus des Sports" (Hauptbad, Steeler Strasse 38, Essen, Germany).

The club has a web site with more information, a discussion forum and one of the greatest Acorn link sites within a simple search engine.

If you need more information, then send an email to cm@santillan.de or phone +49 221 97315910.

Web: www.koeln-online.de/inis/arche/

German enthusiasts meet at the Arche Club (a digital camera image).

Web Page Design

At the end of the last instalment in this series I promised to bring you some information of using lists. As you may remember, I left off with the image shown opposite and asked you to see if you could generate such a list.

Andi Flower ends his series of articles on HTML programming with a look at lists and image maps and a tip on how you can learn from other people's work.

Creating this list is not a particularly complicated task but it does require some thought. The ordering of the types of list and the way in which you close off the lists can all affect wether or not you get the exact result shown here or something just slightly different. The HTML code required to produce exactly what is shown is:

```
<UL>
<LI>A single un-ordered list item.
<UL>
<LI>followed by an indented un-
ordered list item
<UL>
<LI>and another layer of indentation
<OL>
<LI>Which is followed
<LI>by two ordered list items.
<DL>
<DT>Then a descriptive list
<DD>
With, first one description
<DT>Another title
<DD>
And another description
</DL>
</OL>
</UL>
<LI>and finally an un-ordered list item.
</UL>
 </UL>
```

As you can see, quite a complex sequence of instructions. Every occurrence of the code <LI> indicates that a List Item is to be included here. The <UL> tags tell the browser to display un-ordered list items and as can be seen in the image, different layers of these items are easily obtained simply by leaving one Un-ordered List tag open and starting another.

Ordered lists (<OL>) are automatically numbered by the browser while descriptive lists have two distinct sections, the title (indicated by the <DT> tag) and the description itself, indicated by the <DD> tag and indented automatically by the browser.

There are many things that can provide useful sources for developing HTML, this series of articles has only shown you some of the most basic tools. I'll just cover a one of the more interesting things that you could look at here. This should be relatively easy to get access to as it is easily viewable on the Club's PDCD 2.

Image maps provide a much more powerful method of linking with pictures. You have already seen how the standard images in a WWW page can be made into links by using the <href=> tag but you can also split a larger graphic into different links as shown by the example on the next page.

The example is taken from the DARC Web pages that are on the Club CD. All of the 'buttons' in the graphic are contained within one image (trust me, they are) and the following section of HTML provides an area to which each of the buttons belongs.

The example given is intentionally, relatively simple. Each button is stored within a 'rect'angle and has a set of co-ordinates within which the

```
<img src="imap.gif" usemap="#clientmap">
<map name="clientmap"> <area shape="rect" coords="172,286,500,354"
href="mailto:D.A.R.C@argonet.co.uk"> <area shape="rect"
coords="329,210,680,286" href="forsale.html"> <area shape="rect"
coords="0,212,328,284" href="links.html"> <area shape="rect"
coords="329,142,658,210" href="diary.html"> <area shape="rect"
coords="0,138,327,212" href="membs.html"> <area shape="rect"
coords="329,66,668,140" href="resrc.html"> <area shape="rect"
coords="0,66,330,138" href="meetings.html"> <area shape="rect"
coords="330,0,659,66" href="discnts.html"> <area shape="rect"
coords="0,0,330,66" href="about.html"> <area shape="default"
href="about.html"> </map></CENTER>
```

link associated with it will be followed. With different shapes and more complex graphics it is easy to use a very impressive picture and some clever buttons that should make a good impression on visitors to your page.

The last thing that I want to cover in this series is some useful sources of information to help you with Web page design.

No doubt, if you have a web browser

and are already connected to the internet, you will have seen some of the documents on the creation of HTML. However, if you haven't, you should get onto the net and use one of the easily accessible search engines to find anything you can regarding HTML.

One of the most useful ways of finding out how anything works is to look at how someone else does it and HTML is no exception. If you use your Web browser, you should be able to find an option along the lines of "show source". This will take the page that you see on the Web in front of you and allow you to either see or save the textual source including all the tags that have been used. Looking at this source is the way in which I gained a significant proportion of my HTML experience.

Well that's all for this series on HTML Web page design. Unfortunately, I currently have no access to the WWW outside work and, as a result, my experience and useful knowledge is lagging behind. When I get back into the world of internet computing I will no doubt catch up and then I'll try to bring you some new developments and more ideas on how to create your web pages.

Feedback

Peter Davies, of Cardiff, has sent the following reply to a query in Eureka 23 by Alan J Munday, asking how to get the PC Emulator working on StrongARM.

By first applying the Acorn PCEMPatch and then turning the Cache off, PCEm works fine on my StrongARM Risc PC. The Acorn Patch was in a subdirectory called 'Patches', already loaded onto my Risc PC 710 when bought new, and the cache can be turned off by typing "Cache Off" at the CLI Star prompt (F12) or by using the PD programs !StrngCche and !AutoCache.

The two PD programs are on the HD version of the Eureka disc.

Worth Reading

The Editor's view

by Richard Hallas

RISC User is the leading subscription magazine for Acorn users. Published ten times a year, it's a professionally-produced B5-sized magazine in a

Although we do cater for all interests and levels of experience, we don't shy away from getting technical when necessary. So, for example, our coverage of new hardware is authoritative, and we are not afraid to cover programming topics (e.g.

In the first of a new series, we look at Acorn magazines, as they are seen by their Editors and by a regular reader. Beebug's magazine is celebrating a century.

---

mixture of monochrome and full colour. We have just reached our 100th issue, which is an important milestone because it also represents the completion of our tenth year of existence.

RISC User is a general-interest magazine for all users of Acorn machines, and we pride ourselves on keeping well abreast of all the latest developments at Acorn. We have regular articles on such topics as programming, photo retouching, DTP and education, as well as reviews, features about specific products and interviews with key Acorn personnel.

Wimp and Toolbox techniques) in some depth, in a variety of languages. We are the first Acorn magazine to feature a series on programming in Java. In other words, we're the ideal enthusiasts' magazine.

Quality is our watch-word: every article we publish is checked thoroughly by at least three people, so mistakes are rare, and we try to employ the best writers we can for each subject. So, for example, our exclusive feature on Acorn's NewsPAD was written by the Acorn engineer in charge of the project. Our coverage of Acorn's TimeCode software was written by its

programmer. Our practical series on 3D modelling was written by the author of TopModel. Our current series on Java programming is being written by the author of Chockcino, one of the two Java Virtual Machines for RISC OS.

RISC User's coverage of many topics over the last couple of years has been unrivalled elsewhere in the Acorn press. For example, our coverage of the StrongARM upgrade (written by the head of Eidos) gave comprehensive benchmarks and performance tables not only for the StrongARM but also for its rivals (Pentium, PowerPC and other ARM chips). Our evaluation of the new A7000+ compares its performance with the A7000, Risc PCs and PC-compatibles. We were the first (and, in some cases, only!) magazine to have in-depth coverage of the NC, the NewsPAD, the CHRP platform, the Hydra multiprocessor card, Acorn's TimeCode software, Acorn's implementation of Bitstream's TrueDoc technology, Java and many other interesting topics.

RISC User has featured several series (some regular, some occasional)

Richard Hallas, Editor RISC User

which have been very long-lasting and which have proved extremely popular and valuable over the years. Series on Wimp programming techniques, programming in C, C++ and other languages, and practical series on DTP, image processing and getting the most from your computer; all have combined to make RISC User build up to form a reference source of really lasting value, as well as being a good read.

In fact, at the last Wakefield Acorn User Show, two individual Acorn employees told me that they considered RISC User to be by far the best Acorn magazine, and the only one worth reading! Why not subscribe, and see what you have been missing?

A reader's view
by Simon Burrows

In the mists of computing history, back in 1982, Beebug was created as a user group and magazine for BBC Micro users. For many years Beebug was an extremely popular and successful magazine. When Acorn launched the Archimedes range of 32 bit computers back in 1987, Beebug was quick to launch a sister magazine, RISC User, catering for the needs of people using the new generation machine. Although no longer published, much of the original magazine's style and philosophy lives on in RISC User.

RISC User, like the old Beebug magazine, is available by subscription only and is published ten times a year. While this may sound a little odd, it does allow for the quiet holiday seasons of the year and minimises the need for RISC User to scrape around for material to fill.

The magazine has remained fairly constant in format and layout over the years, with typically 65-80 pages in each issue. The magazine used to be A5 in size (the same as Eureka), but now uses the slightly larger B5 format which, in my opinion, has improved its legibility. Colour is widely used through the magazine and this adds to its professional look and feel.

RISC User has had three main editors over the years: Mike Williams, Alan Wrigley and Richard Hallas. Each has brought new ideas and approaches to the magazine while the input of Sheridan Williams and Lee Calcraft has given important consistency and continuity.

Professionally written

What about the articles? RISC User has the usual features which might be expected, for example news, hints and tips. letters page and product reviews. There is a significant 'club' feel to the magazine, with readers contributing lettters, hints and tips, as well as being offered member discounts, however unlike Archive magazine, the articles are professionally written — that is, the writers are commissioned to write articles and are paid for doing so. It is arguable whether this results in more impartial and objective articles, however I have always been very impressed by the quality of writing in the magazine.

Specially commissioned

Two types of article particularly stand out in my mind: firstly there are specially commissioned articles of a type which appear much less frequently in other magazines.

These include features either written by, or written about, key individuals in the Acorn market, articles about new technologies in the computer world, and detailed comparative reviews from experienced users of software packages —not necessarily just the latest releases.

For example, several years ago there was an article on the A4 computer written by one of the engineers from Acorn who worked on producing it. There have been interviews with key individuals, in-depth technical articles about Acorn machines and a lot of other distinctive articles.

The following are some of the key features in a recent issue: battle of the font managers, updates to the ANT Internet Suite, educational opportunities at Legoland Windsor, DTP workshop, Instant JAVA, Pocket Book OPL, Wimp topics, How to make Light of HTML, Compiler Corner, In Business with Acorn and a number of other reviews and articles.

The other strength is series of articles which teach readers on technical matters such as WIMP and ARM code programming. These are supported by example programs which can be typed in (yes, it's actually very instructive to do this, bring back the olden days!) or loaded from the magazine disc. Some of these series have been developed into books and commercial discs over the years. It's very refreshing to see the amount of original material featuring in each issue of the magazine.

Comparative reviews

One of RISC User's strengths is its coverage of new Acorn products when they are launched. There are often very useful comparative reviews which contrast similar products describing the relative strengths and weaknesses of each. Articles also cover developments which may not be immediately relevant to the Acorn market but show the way ahead — for example features on JAVA, aspects of the Internet and Truedoc font technology.

The disc

The RISC User disc is published separately from the magazine and single copies, six-month and annual subscriptions are available. The disc may appear expensive compared with other magazine discs, being priced at £5.85 including UK postage for a single copy, however it contains a lot of original material commissioned by Beebug, rather than simply containing public domain software and similar items. There is usually at least one application on the disc which makes its cost well worthwhile.

Subscribers to RISC User are known as members, although technically it isn't a club, and a number of benefits are offered to them. Beebug is one of the largest Acorn dealers and gives worthwhile discounts to members on all of its own products such as the excellent Ovation Pro. There are also frequent special offers, invitations to events and other enclosed leaflets.

I'm genuinely enthusiastic about RISC User. It has its own distinct feel and a lot of effort clearly goes into producing each issue. There is always material which hasn't appeared in any other Acorn magazine. In general I believe the RISC User philosophy is to go for quality of articles rather than quantity. This may mean less complete coverage of all goings-on in the Acorn world, but does mean the articles are generally very readable, original and authoritative.

For this reason, I think that RISC User is best read in conjunction with one of the other magazines. This is not intended to be a criticism but instead a reflection of the depth of coverage which RISC User provides.

Overall I would recommend RISC User to all sorts of Acorn users, from beginners to expert users. Every issue contains news, articles and information of interest to everyone.

RISC User
Price: £24 per year (UK)
Renewals: £22.50 (UK)
Overseas rates on application
Supplier: Beebug Limited
117 Hatfield Road
St Albans, Herts AL1 4JS
Tel: 01727 840303
Fax: 01727 860263
Email: sales@beebug.co.uk

Meet The Club At

As usual, the Club will be exhibiting at Acorn World at Wembley this year from the 31st October to the 2nd November. We will be on stand 8, just inside the main hall entrance next to Beebug and Alsystems.

show. If you're interested in signing up with an Internet Provider, or are thinking of joining a BBS, come along and try it out. Someone will be on hand to answer any questions that you may have about joining the super highway.

The Club's plans for Acorn World, where Acorn are showing their latest hardware, some just to look at, and offering a selection of free software to take home.

This time, we have invited the newly formed Association of Acorn User Groups (AAUG) to join us on the stand, along with representatives of as many local Acorn clubs as possible. AAUG Chairman, Neil Spellings, will be present all three days.

The aim is to put anyone who is interested in touch with their local group. For anyone who wants to start a new group, Neil will be on hand to offer advice and support.

We also hope to have an Internet and Communications demonstration computer which will be wired up to the outside world throughout the

As in previous years, all the Club products will be available including PDCD 2, the latest Club CD full of software, complete with a web front end and fast search facilities to help you locate the software you want. Why not come along and take advantage of special Show offers?

If you have any questions and you want to talk in an informal atmosphere, come and have a chat. Limited tables and chairs will be available for this purpose.

Acorn are offering all visitors to the Show a range of Acornsoft beta software titles completely free of

charge. There are expected to be at least four titles which will subsequently become part of the range on sale. They can all be collected from special designated areas throughout the hall.
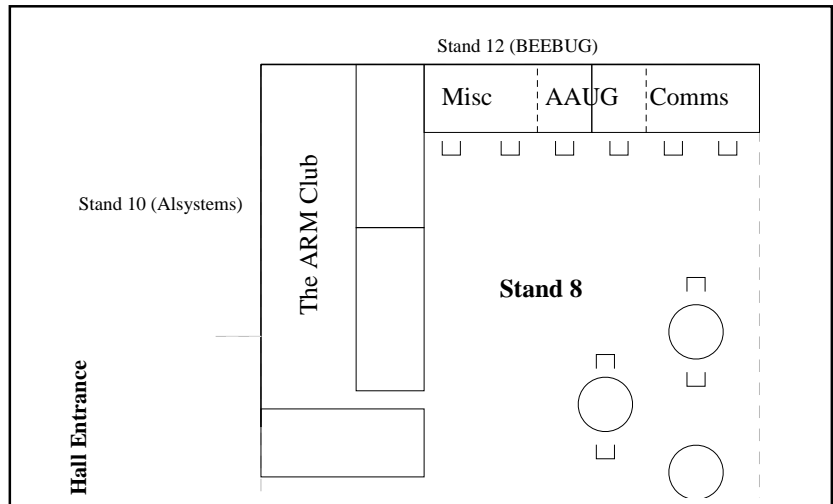
It will not be possible to take home all of the attractions promised by Acorn. Some are likely to be only for looking at and lusting after for a few more weeks or months yet. The most eagerly awaited of these are the new Risc PC II StrongARM computer, the Acorn laptop, the first models of the Network computer and a frames and tables Web browser to make more of the Internet easily accessible.

If you have yet to make travelling plans, Acorn have subcontracted Andrew Bozdan to organise a range of travel packages to allow club members a convenient way to travel to the Show. Your local group may have arranged travel through him, so get in contact with them if you are interested. You can find your closest group from a list on the AAUG web site: www.argonet.co.uk/scs/AAUG

Opposite is a list of companies who've confirmed that they will be exhibiting at the Show, with their stand numbers.

We look forward to seeing you there!

Acorn World 97
Venue: Hall 3
Wembley Exhibition and
Conference Centre, London.
Dates: Friday 31 October
to Sunday 2 November 1997
Hours: 10am - 6pm
Ticket prices:
Adult £9.50 (£6 in advance)
Child: £7 (£5 in advance)
Families £22 (£16 in advance)
Advance ticket hotline:
0181 982 6500
Web:
www.argonet.co.uk/acornworld97/

On The Eureka Discs

The high density disc we're giving to anyone who can read it contains bonus items. The discs are specially formatted to 1.76MB, insteadof 1.6MB, allowing them to carry large items. The HD Eureka 24 disc has a massive 2.8MB of compressed software!

Details of what to do if you receive a DD disc but can read HD discs are on page 46 and in the ReadMe file on the disc.

The material which is on both DD and HD discs has been categorised as follows in the Eureka24 archive:

Apps
We have the latest version of xpdf, the PDF file viewer application as well as a new desktop PCB designer, RiscPCB and the latest version of the popular StrongHelp application.

Program
The programming aids and utilities include the latest version of the assembler ASM which now supports some extra StrongARM instructions. KDUtils is a module of useful routines —including fast memory copy and search. SocketFS is a sockets filing system to aid writing of internet related software.

Utilities
PsionFS can read Psion 5 MBM files and turn them into sprites. LineEditor is a small utility which makes it easy to repeat command line commands.

Eureka
Contains the support material for Eureka 24: the latest !Diary application to go with the Toolbox programming series.

Toolbox
Contains a !System folder with all the Toolbox modules. If you have RISC OS 3.1 or 3.5 and don't have a set of Toolbox modules, you'll need these to use these for:

• The !Diary Toolbox programming application
• xpdf
• ArcWeb (in HD Bonus archive)
* Rename (in HD Bonus archive)

If you have RISC OS 3.1, you'll need to use !SysMerge to merge the modules with your main !System folder. For RISC OS 3.5 owners, there is a SysMerge utility built into the Configure application (double click on !Boot, then on System).

For HD members only, the following bonus items are present in the Bonus archive:

ArcWeb192
The very latest version of the acclaimed web browser, ArcWeb.

Utilties
FasterAct adds buttons to filer action windows for all the options which normally need to be accessed from the menu. SmallDir allows you to selectively show small icons for the contents of directories which contain large numbers of files. AFormat and FDFormat are non standard ADFS and DOS disc formatters respectively. AFormat was used to format the HD Eureka disc to 1760K, but 1804K is possible. Rename is a highly flexible file renaming utility and Smilies gives you a point and click panel of smilies.

Notes for your diary ...

The ARM Club will be present at the following events:

1997
Acorn World, 31 Oct - 2 Nov, Wembley — *See pages 75-77*
Selective Computers Open Day, 16 Nov, Kegworth, Leicestershire
Scottish Acorn Show, 23 Nov, Marriott Hotel, Argyle Street, Glasgow
***The Midlands Acorn Show**, 6 Dec, Birmingham — *See page 59*

1998
Acorn Southwest Show, 7 Feb, Bristol
***Merton Court Open Day,** 1 Mar, Merton Court School, Sidcup, Kent

* Indicates an ARM Club event, with doors opening at 10am

Coming in Eureka 25

Our Spring 98 issue, next February, will report on the hardware, software and future developments revealed at Acorn World, some better alternatives to the RAM Disc will be considered (and included on the Eureka disc) and there will be reviews of Schedule+, Bear Sheet and the Rocks, Minerals and Fossils CD.

Club contacts

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Editor: Peter Jennings
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Benefits of membership

The ARM Club

The national club for all users of 32 bit Acorn computers and Pocket Books

• The Club's magazine, 'Eureka', written by members, published and sent four times a year to members with a supporting disc.

• Technical Help Service — we will do our best to find someone who can provide a solution to any problems which you may have by letter, email, telephone or fax.

• Special discounts from well-known companies for Club members.

• Training courses can be organised on request, regional club meetings are supported through the affiliation scheme and Club open days regularly take place.

• Regional contact lists of other members, available on request.

• Discount Public Domain Library, including unique Club software.

• Special offers at Shows and Open Days

• Opportunities to get involved in the running of the Club itself.

• School and Affiliate Membership available on request.

• Joining pack includes an extra copy of recent magazine and disc.

Annual membership costs only £12
Europe £17 and rest of the world £19
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