

The magazine for members of

**K**M Club

It's RISC OS 2000 Show time at Epsom

Writing games

Looking at search engines



10,000 Photos on a choice of two CDs

Issue 36 — Winter 2000

### **EDITORIAL**

### **Strength In Numbers**

If there was ever a need to justify the existence of The ARM Club it would only be necessary to point to The RISC OS 2000 and The ARM Club Midland Shows. Their appearance once again demonstrates the strength and power which can be harnessed when a large enough group of enthusiasts band together.

The size and diversity of its membership has always been the Club's strength. It is big enough to be able to find someone ready, able and with the right knowledge and experience to take on a job, without inducement of payment, when the need arises. There are technical experts to manage the Club's advice service, an accountant to look after the Club's funds, a journalist to edit its magazine and graphic artists to help on any questions of design.

Mark Smith took on the formidable job of organising last year's RISC OS Show at Epsom to replace the cancelled Acorn event. Other Club members disclosed previously unrevealed talents to make up his team. It was all expertly arranged, step by step to ensure that there was sufficient support from the RISC OS community, without endangering the Club's funds should the project collapse at any stage.

As you know, the Club's day to day affairs are managed by its Committee. In so many organisations this is seen as a faceless collection of bureaucrats so it good that Club members can meet the friendly people who really represent them when they visit a show.

We are not complacent, though. Fresh faces are always welcome. If you are able and willing to take a more active role in the Club in any way (and it doesn't have to be Committee membership) you will be very welcome, whether it is helping to organise a show or writing something for Eureka. You need only offer to do something you enjoy doing and it can be good fun.

#### **Peter Jennings**

All opinions expressed in Eureka are those of the authors and not necessarily those of the Club or its Committee members and officers.

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# **RISC OS 2000 Show**

The RISC OS 2000 Show, which is being held at the same Epsom Racecourse venue as last year's highly successful event, has attracted around 40 companies and organisations, both large and small, A wide choice of software at sensible prices continues to provide RISC OS users with applications to suit all tastes, while continued enhancements confirm developers faith in the market. Internet access is an area

With the RISC OS 2000 Show now upon us, John Sawer gives some final details and reveals some of the new products which have been announced in advance.

who will be presenting a wide range of the best and latest RISC OS hardware and software.

Special offers will give visitors the opportunity of buying new products or upgrading at discount prices.

It hardly seems only two years since Acorn computers quit the scene. The mantle has been taken up by no less than three computer suppliers, bringing a new level of choice and low prices.

A fourth option will be the planned Nucleus flagship machine, designed especially for the specialist graphics market. where improvements are so rapid that it is difficult to keep up.

The new products, which will be the key features of the Epsom Show, are expected to include the release of the long-awaited RISC OS portable by RiscStation, one of the Show's sponsors. The company will also have more news on the posSum point-of-sale project and. of course, the existing RiscStation desktop computers. For earlier information see the website at www.riscstation.co.uk.

Visitors will notice a striking change in the format of the popular RiscStation Village, which will once again give everyone a chance to meet



The long awaited RiscStation portable

the RISC OS market's numerous highly respected small developers and see, try and buy their products.

Another of the Show's sponsors, Castle Technology, is providing a large internet cafe! This will be your chance to surf the web using Kinetic Risc PC systems, the fastest RISC OS systems available, and Castle's Oregano web browser, which was released earlier this year and has since seen substantial development to enhance its already considerable performance. You can check out Castle's website at www.castle.org.uk and remember that Castle are masters at concealing new releases until the last minute — so there may be something unexpected too!

The third sponsor is Acorn User *the* RISC OS newsstand magazine. The June issue of Acorn User sold out completely but

the Show will be a good chance to pick up any other back issues you're missing, including the August one, with its large collection of games, which has seen a great deal of attention on the Internet newsgroups.

Acorn User, who are now making magazines available in bulk to user groups, are aiming to provide a new, totally revamped version of their website to coincide with the Show. You can find the current version at www.acornuser.com/. Chris Hornby is also one of the Show sponsors. We are delighted that, despite the closure of Spacetech, Chris will be attending the Show as Photodesk Ltd, providing the wellknown and highly respected range of graphics and presentation software, camera and printer drivers and more. The website is still: www.spacetech.co.uk

Presentations by leading companies and developers will take place in the purpose-built theatre and there will, as usual, be a substantial Charity Stand.

The complete list of exhibitors continues to grow and the website will continue to reflect these changes at www.armclub.org.uk/riscos2000.

It also contains information on other attractions in the local area, as well as a variety of nearby accommodation. (Book soon to avoid disappointment, all the hotels and guest houses we listed filled up very quickly last year).

Epsom racecourse is well-connected by road and rail. It is a few minutes from junction 8 of the M25 and you can see the route in detail on the following pages. Epsom is less than half an hour by public transport from Waterloo Station's Mainline, International, Underground and bus services.

This year the recommended station for the Show is Epsom Station (*not* Epsom Downs or Tattenham Corner), from which a free minibus service will be available to the Show.

Overseas visitors were much in evidence at last year's Show, the location being easily accessible from the Tunnel, Heathrow and Gatwick. Some visitors from the other side of the world have already booked their flights.

Tickets are only £4 in advance from the Club's Merton Court address (see the contact details on page 80) or £5 on the door and are valid for both days. Children under 10 are admitted free.

Members of The ARM Club, SASAUG and ROUGOL all have free admittance on Sunday on production of their membership cards.

See you there!



### YOUR ROUTE BY ROAD...

• Take the M25

• *Exit at Junction 8* and head northbound on the A217 Brighton Road dual carriageway — signposted: A217 Sutton and London.

• Continue northbound through Lower Kingswood and straight ahead at the next two roundabouts — still signposted: **A217 Sutton and London**.

• *After 2.8 miles* from the M25 take the third exit (straight ahead-ish) at the traffic light controlled Tadworth roundabout — still signposted: **A217 Sutton and London**.

• *After 1 mile* turn left at the traffic lights at Burgh Heath on to Reigate Road. This is immediately before the Shell petrol station and is signposted: **A240 Epsom and Kingston**.

• Follow this road across a set of traffic lights (after which the road starts going downhill) and *after 0.9 miles* turn left on to Yew Tree Bottom Road — signposted: **B284 Epsom Downs**.

• *After 0.5* miles take the second exit at the roundabout on to Grandstand Road. This is signposted: **Grandstand and Ashtead**.

• *After a further 0.6 miles* both the Queens Stand are located straight ahead adjacent to another roundabout. Car parking will be signposted and marshalled.



## Writing Games For RISC OS

Since the days of the BBC Micro, and possibly before, Acorn computers have provided an ideal platform for somebody to begin programming.

I'm not ashamed to admit that I can include myself in this category of person and my first efforts at writing games were on the BBC Micro.

Our ARM Arena columnist, Andrew Weston, offers what he modestly calls a beginner's perspective on writing games for RISC OS computers.

The BBC Micro for example included the in-built and accessible-by-default BBC BASIC together with an easy to follow reference manual provided with the computer. This enabled virtually anybody with an interest to quickly write their first program.

Soon a programmer would be able to start thinking of their own ideas for programs and start using BASIC to achieve this. Some of these programmers would have an interest in writing games, perhaps attracted by the colourful graphics they had generated during their learning and a desire to imitate the growing number of games they had seen elsewhere in the arcades or on other emerging computer platforms. The major appeal of writing a game for me has always been the idea that you can, in principle, create what you want — a new world, a story, an atmosphere etc. Unfortunately, unlike many others who gifted us with many of the classic games of yesteryear, I didn't have the resources and probably not the patience to make the next step in games programming (at least for the games I wanted to write) —assembly language.

In order to use big colourful graphics within a reasonably fast game, BASIC wasn't sufficient and programming in the machine's own language (6502 assembler) was required. However, this time wasn't wasted and I certainly didn't lose any enthusiasm for creating games. I was able to buy a RISC OS computer a number of years after I had stopped using the BBC during my A-levels.

#### A New System

I was aware roughly of what was possible using the 32-bit ARM-based machines as I kept a keen eye on the games advertisements in the Acorn magazines during my time with the BBC Micro and on returning to using Acorns. With a faster machine, maybe high-quality games could be created using mostly BASIC?

However, if I was to create the games I wanted it would be necessary to start at the beginning in certain areas.

Although the user-friendly BBC BASIC had been kept in Acorn machines and indeed greatly expanded, it was clear that there was a lot more to learn, especially regarding graphics creation. The major difference was the inclusion of the pixel editor !Paint which would allow large, colourful graphics to be created but how could they be used within a BASIC program? Also, how could I make music and sound-effects for games?

#### First steps with 32-bits

In order to make use of these facilities it is necessary to learn how to use the operating system calls, accessed using the command 'SYS' in BASIC followed by various strings and parameters. These calls enable the user to access powerful facilities built into the operating system.

I obtained this information from tutorials in old magazines and searched out books on the topic. Although, these resources were and remain highly useful I'm not sure about their relevance to anybody today wanting to start games programming as I imagine they would be very difficult to acquire. Certain books are now out-of-print for example.

Perhaps then, the best source of this information would be a guide to BBC BASIC which may introduce SYScall facilities as well as giving invaluable information on the possibilities available with BASIC. Alternatively, you can look at the beginner's columns in magazines such as Archive, or simply ask for help for example from The ARM Club Technical Help Service.

For greater detail on these calls, one can always look at the programming manuals available for the interactive *StrongHelp* application, available from the web and Public Domain libraries.

For a while I then experimented with drawing simple sprites, moving and animating them, trying to add collision detection so that a usercontrolled sprite could be restricted by other objects on the screen. This experimentation eventually led me onto two quite different aspects of RISC OS games programming sound/music and ARM code. I'll briefly mention each of these separately.

#### Sound & Music

An obvious way to enhance the atmosphere of any game is with sound effects and music.

The sound system of any RISC OS computer is capable of both synthesising and playing sampled sound with relative ease to earlier Acorn computers. Therefore I quickly wanted to find a way to add such enhancements to any experimental game project I was working on.

Although, sound and music is certainly possible using simple BASIC commands, it becomes clear fairly quickly that one cannot achieve the same quality of audio output as that used in high-quality, say commercial, games by this method.

#### Tracker

For a number of years, the *Tracker* format has existed on the RISC OS platform, originally I believe ported from the Amiga. For those who don't know, this is a sample-based sequencing method of music creation, that is a sequence of instrumental samples is defined to create a tune. This greatly facilitates music creation for games and I have made a number of tunes using freely available software.

A key advantage is its apparent invisibility, operating in the background of any BASIC or assembler routines which may be running. In searching for samples, for example on PD CD-ROMs, one will usually encounter sampled sound-effects in addition to the instrumental samples. These may be in the form of so-called 'raw-sound' samples, tracker samples or relocatable modules.

The latter filetype can be used with the BASIC SOUND statement allowing easy playback from BASIC programs. At any rate, there are programs available which will usually convert between these formats with ease. I have included a list of software which I have used up to the present and would recommend to others.

Music started at appropriate times and effects called similarly can therefore make a pleasing addition to a game without too much effort. Modern games are increasingly using MIDIcreated and CD-based music but that's a different story however...

#### Assembler

If the planned game is of a highly graphical nature and in general, fastpaced, it is likely that routines faster than those provided by the operating system will be required. In this event, I have found routines written in assembler to be helpful. These cover tasks such as plotting sprites fast (to enable more and/or larger sprites to be plotted), clearing the screen and redrawing it. The nature of many games demands this fast update and very often, the faster the better.

#### Game Suite

Probably the best source of routines available for this purpose are those written by Andy Southgate in his freely available GameSuite. These have been used in several significant freeware and shareware games releases and greatly facilitate the development of a game for people who do not have the time to focus on developing ARM code routines.

It is arguable however, that eventually one may have to try to develop such routines as eventually these prewritten ones will prove inflexible or a pre-written routine may simply not be available.

However, while you are trying to learn to do this at least you are not restricted from developing your gaming project!

#### **Results so far**

of Using my approach experimentation and borrowing, I have so far managed to produce one game and started to write another which is hopefully a progression of the first. I wouldn't for a moment claim that my strategy is the best way to become an accomplished games programmer, since I know that many others have been cleverer and done better things faster, but hopefully the above will provide a few pointers to people starting right at the beginning.

I realise that I will have to try to work on producing my own ARM code routines but I hope I can do this in parallel with developing a game with the resources that are available at the moment. In addition, there are a couple of initiatives on the Internet to share programming knowledge which will ideally assist those like myself towards this goal. These are included in the list at the end of the article.

#### **Future Plans and Feasibility**

My current project is a multi-stage graphical exploration game similar to my first game, *Overcast*, but on a much larger scale with more interactivity. There a few key differences between this project and its predecessor. I'm using more sophisticated software to design the graphics so in principle they should be better! Also, I want to implement more user interactivity, for example communication with the non-player characters and more complex, defined tasks that the player has to perform. Finally, I want to improve the overall presentation and make the best possible atmosphere I can.

The good news regarding improving the game is that, for the most part, the improving can be done using BASIC which underscores the point I made about feeling obliged to concentrate on ARM code to the detriment of the rest of the game's design.

Don't feel that if you can't write complex and highly efficient segments of code, you should give up! In the worst case, you could simplify the speed-critical parts of your game until you are confident about improving them. Besides, if you are able to develop a BASIC routine with a specific function, you are in a better position to convert it into a faster version in ARM code should this be necessary.



Improving the presentation will undoubtedly require better graphics and, in my opinion, more music! Therefore, the final game will probably occupy many megabytes but, as I have been reassured, in these days of CD-ROMs, this is not an insurmountable obstacle. Besides, compression and no-music options are easily implemented.

At this particular level of games programming, I don't see RISC OS being especially inhibiting as a development platform but in certain areas, I understand there are improvements which could be made to provide assistance.

I have also of late been considering trying out 3D graphics with the possibility of eventually writing 3D games or at least 3D effects. Although a one-man effort could never expect to compete with teams of full-time developers working for software houses, there does seem to be a lack of dedicated software available to the individual compared to other platforms. There is a large amount of 3D graphics-related tutorial material on the worldwide web however so perhaps the best course of action for somebody wishing to enter this area is to tackle this material slowly, a step at a time. Again, there may be something else you could work on in parallel.

Critical readers will have soon noticed that I have spoken only of the 'native' Acorn programming languages, BBC BASIC and ARM assembler, whereas a common choice these days, particularly on other platforms is the language 'C'.



#### Last Night — from Overcast II

Advantages include a high-level implementation (that is, relatively easy to understand) and its ability to be compiled (converted to machine code before being run).

This is in contrast to BASIC, which only has the former feature, and assembler which only has the latter. I have not ever looked into using C however partly out of stubbornness when I have two capable languages already in the computer I use, partly through time availability and because I feel that I would prefer to concentrate on becoming a competent ARM code programmer firstly, at least. However, as Jan Klose of Artex pointed out, if one wishes to make a game compatible with other platforms (for financial reasons maybe) it is necessary to develop it in a shared language such as C. Thus, there are several factors to consider and I'll leave you to decide which paths you'd like to follow.

#### Conclusion

In the present climate, there does not seem to be a huge market for RISC OS games and consequently releases are, at present, sparse but I don't see this as a reason for people to abandon any aspirations of producing their own games whether or not they see their future in the gaming industry.

Many of the best RISC OS programmers have had essentially to abandon RISC OS to concentrate on their career programming (softwareengineering) other systems. However, the fact that high quality RISC OS original games (freeware, shareware and commercial) have been produced on a part-time basis is proof that games development is possible by people who program as a pastime. Working as a group is one tried-and-tested option and the Internet makes this entirely feasible when members are located in disparate parts of the country as is often the case in the RISC OS user-community. This would seem logical, especially for people like myself who see their future in a field distinct from the

computer gaming industry but would like to program for leisure.

My overall message then is that if you are motivated to write games for fun and enjoyment or to try to give something to the platform to show for itself then don't be disheartened by feeling isolated by the current climate or working largely on your own.

Somebody said that becoming a good programmer was done 'the hard way'.

Programming can become difficult but this can be seen as a lot of enjoyment to be had by seeing the results of your experimentation while learning and it is fun if you like a challenge.

A section of code might be all you



Invasion — from Overcast II

need to achieve a range of effects so this is time well spent and makes for an enjoyable distraction. I hope therefore that at some point down the line, I can report that I have continued to learn and have made progress with my game projects and that others are able to find the help they need to write games. Remember, don't be afraid to try out your own ideas and if the programming becomes tedious, take a break. Have fun!

# Recommended Software & Resources

Introductory notes on games programming:

www.acorn-gaming.org.uk/Featur es/Coding/

#### Comp.sys.acorn.games FAQ:

sunsite.doc.ic.ac.uk/usenet/news-FAQS/comp.sys.acorn.games

#### Sound & Music

**SoundCon:** available from the worldwide web.

**PlayIt:** available from the worldwide web.

**APTracker:** available from public domain libraries such as APDL.

#### Graphics

**Paint:** Design of simple sprites or fine pixel editing.

**Intergif and IGViewer:** For creating sprite animations from spritefiles or GIFs and viewing GIFs.

**Textease:** useful for scaling animations.

**ChangeFSI:** Useful smoothing function and various mode conversion and scaling functions. **ProArtisan 24:** For sophisticated effects on titles or advanced image processing.

**TopModel:** For 3D graphics and even 3D titles. However, the planned animation facility is still not ready which limits the package as a tool for creating character animations for example.

**Andy Southgate's Game Suite:** Fast 256 colour sprite-plotting routines

and routines for automated handling of large numbers of game objects.

#### ARM Code

#### StrongHelp assembler manuals:

available from the worldwide web and public domain libraries.

Manuals CD from RISC OS Ltd: Contains both the BBC BASIC guide and Assembler manuals which both contain relevant information and an introduction to the programming language.

**Extractor:** a program for creating datafiles from sprites to plot from ARM code. Also included is the code showing the basics of how to do this.

#### **Further material**

www.riscos.org: This site plans to include a range of material on different areas of programming. www.t-c-r.org: The technology consortium for RISC OS. Contain a set of links for different areas of programming.

#### My current project

www.argonet.co.uk.users/awes tern/overllc.html: Game proposal www.aweston.redhotant.com:

Mainly screenshots.

# **Old Floppies**

It must be left to others to talk about the really old days of the BBC Micro and so on. I never got to grips with the early computers at all. I was so bored by the dreadful familiarisation courses that were run at my college, that I inevitably fell Admittedly I have thrown a lot away, but I have come across one or two items in my collection which I will never chuck out and I wonder how many readers have similar favourites from the Acorn past which you never hear about any more?

Christopher Jarman takes a nostalgic look back at some of the favourite programs from the days of floppy discs and finds that some still hold the same magic.

asleep somewhere around ten am during the first presentation.

In the 1980s I had an utterly unrealistic idea of what computers should be like (like they are today in fact) that I could not get enthusiastic about black screens where geeky people made 'turtles', that didn't look turtles. bit like move а in mathematically neat patterns. So it was only after early retirement from the teaching fray that I discovered ArtWorks on an A4000 around about 1993 and then I was hooked for ever.

I have lately been turning over my vast collection of old floppy discs.

My all-time favourite which I still play regularly is Chocks Away. Being something of a Flight Sim Freak I have possessed many simulators in my time.

Of course all the sophisticated ones are on the PC (The only reason I bought such an object) I love to have the latest MS FS2000 and all the add-ons, upgrades and downloads. But for sheer fun and that elusive quality 'Playability' you just can't beat Chocks Away.

It was written by Andrew Hutchins and released in 1990 by Fourth Dimension. I still have my original



Chocks Away and another enemy plane falls victim to the trusty Tiger Moth

discs, case and Pilot's Flying Manual. It was playable on all the Archimedes in use at that time, and was followed quite quickly in 1991 by a much improved upgrade Chocks Away Extra Missions.

#### **Risc PC**

When I got my Risc PC I thought I would have to abandon the game, but soon somebody sent me a floppy with a version that would play on the RPC and even stayed on the hard disc. I have no idea where it came from but it meant that I am still able to take off from the carrier and swoop on unsuspecting warships and oil tankers, blow them up and then take on ze might of ze Kaiser's best pilots in my trusty, yes, trusty Tiger Moth.

Oh yes, I still think of the tale of the fighter ace Douglas Bader telling the young ladies at Cheltenham about his war 'There were Fokkers above me Fokkers below me and two Fokkers on my tail'. The headmistress hastily sprang up and explained to the girls that a 'Fokker' was a German plane.

"That's true Ma'am" said Bader, "But these Fokkers were Messerschmitts."

I have been trying to up my scores ever since I bought Chocks Away in what? 1993? I still get a thrill if I manage to increase my kills on a mission. And what about those really fast jobs? The Eindeckers? It still makes me leap out of my skin when that particular Fokker jumps me from behind.

#### Perfect technique

I have perfected a technique with the enemy fighters, that is not to chase them first time. If you wait until they have had a couple of goes at you they start to circle. Then you can fly round aiming about 200 yards ahead with your unlimited ammo and keep giving them that unending stream of pixels



Architech came with a sexy black manual

arching back until they are wiped out —yeah! No I'll never tire of Chocks.

Then there is Architech, designed by Tim Humphries in 1994, produced by Aspex Software in Tavistock, described as an advanced 3D modelling system. It certainly was. You could, and still can, make the most complex shapes and animate them. I spent about three days making a complete model of Winchester cathedral which you could move around inside and out looked at from all angles.

I was so pleased with it that I sent a copy of it to Aspex. I believe they managed to sell a couple of programs to some people in Winchester on the strength of it!

I made a yacht and a couple of aeroplanes before I found another program to play with. In particular, I recall rolling and spinning blocks of text and saving them as ACE films.

The great thing about Architech was the manual, which was by far the best Acorn product manual I have ever read. It was written, of course by a primary school teacher.

It came in a beautiful black plasticbound 206-page ringbound file which looks as sexy today as it did five years ago.

If you possess another old favourite, Iota's The Complete Animator, Architech files can be saved out as ACE films (remember those?) dropped in and converted to Animator films which in turn can become animated GIFs in Textease. Hey Presto! An animated web page!

#### Web designers

This is just the kind of software which modern web designers love. But there it still is, perfectly capable of doing what some of the most expensive PC programs do today.

Da Vinci and TopModel came later, but I found them both too complicated for me. Architech was and is a good product, and is probably still available very cheaply. What about an ARM Club competition for Architech creations? Pictures of the best models to be printed in Eureka? (*Certainly*. *Just send them in. -Ed*)

What an exciting time it was in the mid 1990s to have a new Risc PC and to see all the new programs that were still coming out each month. The Big Picture, Compo, and music demos by the score.

Then Sibelius hit the streets and became the Killer App. I was so new to computers then that I did not know what a killer app was. It went around



Christopher Jarman — still flying on Risc PCs Back to my old floppies.

the world carrying all the hopes and prayers of the complete Acorn fraternity at the time. But like so many other good programs, it has had to be converted to Windoze. With what hopes did we join the Acorn Clan and got the ballpoint and the Tshirt?

#### Still ArtWorks

My own old favourite art program is still ArtWorks; I spent almost all my energies in teaching myself how to work it, so could never face another learning curve like that again. As for the next one, Cerilica Vantage, unless someone kindly sends me a review copy, I doubt whether I shall be getting this killer app —the main reason being that I can neither remember the name or pronounce it or spell it.

In any case ArtWorks has gone to Windoze as Corel Xara. and what an excellent product it is too. I think it is still the only vector app that has antialiasing on the PC.

How many people remember that first rate artist who produced wads of ABC clip art? His name was Andy Jeffery from Brean in Somerset and although he has stopped making clip art now, he tells me that Corel bought all those ABC clips and converted them to the PC.

So what do I seem to be saying? That we have gradually conceded almost all the initiatives to the PC community? Yes I believe I am saying that. But I still sift nostalgically through my old floppies and think of the good times now and again.

I still use the Clan T-shirt as a nightie although my wife is no longer impressed.

# 10000 Photos (x2)

Most clip art collections are composed completely or mainly of artists' sketches, which are quicker and cheaper to produce than photographs and can be turned out in quantity at any time and any place. So it is interesting to find two CD-

On Volume 2 there are sub-subdirectories which are numbered, not named. Also, like so many other American clip art collections, all the images are numbered instead of having meaningful names to identify them.

Peter Jennings adds another 20,000 images to his clip art collection. This time they are all professionally taken colour photographs.

ROMs, sold separately, each containing 10,000 photos and available for normal use without having to make royalty payments.

The pictures, originally for the PC market, are supplied as JPEGs but the CDs come with a viewer for RISC OS machines which allows export as JPEGs or Sprites. This is supplied on a floppy and can be copied onto hard disc.

Running it puts an icon on the icon bar and clicking this opens the CD's *Root Directory* containing the titled directories of all the subjects on it, most of which have sub-directories. These are displayed as thumbnails, which can be shown as *Large Icons* (the default) in rows of six images, *Small Icons* which, strangely, are in rows of five to get the maximum number on the screen and (on my Acorn monitor) are far too small to see, or with *Full Info* which displays small icons and the file size of each image.

Clicking on a thumbnail opens a window with a large image and a toolbar allowing it to be shown at whatever scale you wish.

Although the CDs were produced by the American greenstreet (sic)



So, what are the pictures like? Clip art collections are always a mixture of good, bad and indifferent but the variety and quality of the photos on these CDs two are considerably better than many others.

My main criticism of quality is the common fault of clip art photographs of looking rather underexposed (dark) but this can be adjusted if you have the right software.

As to the variety of subjects, you can see for yourself from the

company, which also has a UK address, they are being distributed with the RISC OS viewer by a British software supplier, TNP Software, which will deal with queries by email or post and is offering support information and updates free from its Web site. contents listings on the next two pages and there is a wide selection of each subject.

Note that the numbers shown after some of the subjects on Volume 2 refer to the number of *sub-directories* not images.

### **Contents of Volume 1**

Animals	Rhino	Lillies
Bears	Seals	Mountains
BigCats	Zebras	Mushrooms
Birds	Entertainment	Ocean
Birds2	AirShow	Plants
Buffalos	AmusementPark	Plants2
Butterflies	AmusementPark2	SandSea
Camels	Balloons	Scenic
Chipmunks	Fireworks	Sunsets
Cows	Holidays	Trees
Elephants	Parachuting	UnderWater
Elks	Parades	UnderWater2
FarmAnimal	s Racing	Vegetables
Flamingoes	Recreation	Water
Giraffes	Rodeo	Waterfall
Goats	WaterSports	Winter
GroundHogs	s Misc	World
Hippos	Nature	Architecture
Horses	Agriculture	Aviation
Insects	Cactus	Background
Misc	Caves	Business
MountainShe	eep Clouds	Children
Ostriches	Flowers	Cityscape
Peacocks	Flowers2	Construction
Penguins	Food	Effects
Pets	Fruit	Emergency
Primates	Garden	Flags
Rabbits	Ice	Industry
Reptiles	Landscapes	Landmarks

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#### Volume 1 continued

Nautical People **Sports Textures** Trains Transport WildWest Travel California Catalina ChicagoLA Denver FarEast FloridaHawaii GodsGarden Germany Jamaica LasVegas LatinAmerica Mesaverd Misc NewEngland NewYork Portland SanFrancisco SantaBarbera **SeatleWaters USCities** WashingtonDC

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The examples I have chosen are some of those that will reproduce reasonably well in black and white. All the photos are in full colour and some are really stunning.

A small irritation is that the windows do not have a toggle-size icon in the top right corner and so have to be dragged fully open to display their contents.

The lack of image titles makes it necessary to carry out a visual search for the picture you need, although it is usually easy to decide which of the named directories is most likely to house it.



It would have been good to have an illustrated catalogue to make up for this but it would have added substantially to what is the very reasonable cost of 10 pictures for 1p.

Volume 1 is said to have more pictures of objects rather than scenes while Volume 2 has a greater



proportion of photos suitable for background images and textures. There is £1 discount if you buy both. Full details and quarter-size sample pictures from both CDs can be found on the company's Web site.

10000 Photos (Volumes 1 & 2) Price: £9.99 each or £18.99 for both, including post and packing Supplier: John Whitington TNP Software 617 Fox Hollies Road Hall Green Birmingham B28 9DR Email: john@tnpsoft.co.uk Web: www.tnpsoft.co.uk/

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### **Search Engine Shenanigans**

The Internet is, at first glance, huge. In truth, it's actually much larger than that. Which is why finding information on it, or at least finding the information you *want* to find, is an absolute nightmare.

*Dialog*. Developed at Lockheed in the early 1960s as part of a NASA contract, it was for the searching of bibliographical references, and was later extended to full text.

Darren Grant, who has answered a query about search engines sent to our Technical Help Service, adds a few more details to provide a fuller account of them.

Right, now you can breathe a sigh of relief that it's not just you. This article, however, is going to tell you how you can really start making the most out of your web usage. We're also going to look at a fundamental security flaw of the web which is intended to let you realise the dangers of the Internet and make you think twice about online shopping in future.

Back in the dark ages, lost in the midst of history when world domination was only a twinkle in the eye of a Seattle-based hacker, and ARPAnet, the militarist experiment that became the mess that is the Internet was still nearly 10 years away, the daddy of all engines great and small was borne: A bit later there were a couple of hundred thousand servers on the Internet and *Archie*, an 'Archiver' was created in 1990 by Alan Emtage, a student at McGill University, to index ftp sites. Three years later, Veronica catalogued much of Gopher (the precursor to the Web, if you like).

The first truly automated Web index was the *World Wide Web Wanderer*, which created the index *Wandex*. Created by Mathew Gray, a student at MIT, it first indexed only servers but, later, web pages as well. The first modern search engine was created the same year in 1993 by a handful of Stanford students. Called *Architext*, it later changed its name to *Excite* and is now a multi-billion dollar company, with the five or six students who created it driving BMWs and going on holidays to Hawaii. Bastards!

Nowadays, things are somewhat more sophisticated with all manner of different techniques available for sifting through the mine of information available out there. Recent estimates put the goalposts at 7,500 terabytes (1 terabyte = 10,000 gigabytes) of data on the whole of the Internet (although a slightly more manageable 19 terabytes make up the 'surface data' that's not generated by computers).

But in truth, the basic, generic concepts havn't changed. What happens with search engines is that a 'robot', literally a program that has the ability to trawl the web itself, is given a list of URLs to visit and, also following any links it chances upon, it records pretty much everything it sees as it goes.

There is a theory (actually I just made it up but it's pretty obvious) that every page on the public web can be visited by starting at one point and following enough links. Well, in fact there are going to be a few pages here and there that really aren't linked to by anything (and yes, you've guessed it, those are the useful ones...) and the only way those pages can be indexed by search engines is by the owner (or any enthusiastic Joe) entering their URL into a search engine's submittal form.

You may be thinking that some pages aren't intended for public consumption, but as we'll see later, pretty much any page that can be found, will be found, in time.

So, these robots (also known as spiders, trawlers, web-bots, etc. etc. etc.) go about recording a mother of all lists of web pages and their contents. Then, Fred Everybody trots along to that search engine's homepage, enters in a few keywords into an input field (Web-speak for writeable icon), hits 'Go' and a few thousand URLs are helpfully given to him.

So, which search engine to use? There are probably several thousand search engines out there, ranging from the very specific (eg a catalogue of types of water-snakes) to the most general and it is in these that you will find the best results. Something to be wary of: it's all very well going to a specialist engine but if these engines are run on a low budget, or by mere enthusiasts, often they will be out of date and even subsumed by the greater searching capacity of the more general engines.

There is some amount of dispute as to how much of the web is actually indexed by search engines. Estimates vary from as little as 6% to a whopping (!) 30% of the web for a single major search engine. However, it is practically impossible to know at this stage in the development of the web because a huge proportion of 'the web' is generated dynamically from raw data files by CGI scripts and the like. This is done without the user ever knowing about it (eg online shopping sites, such as Dabs or Amazon, which generates pages of information about its products from its own databases, or less obvious sites such as Microsoft, which generates nearly all pages from segments of headers, footers, menubars and the main content of the page).

The best search engines, in rough order of my personal preference, run as follows:

AltaVista: www.altavista.co.uk/ Yahoo: uk.yahoo.com/ Google: www.google.com/ Lycos: www.lycos.com/ Excite: www.excite.com/ Hot Bot: hotbot.lycos.com/ MetaCrawler: www.metacrawler.com/index.html

An example of some more specialist engines, or simply useful founts of information:

About.com: www.about.com/ The Encyclopaedia Britannica: www.britannica.com/ Deja News: www.deja.com/ Deja News Usenet: www.deja.com/usenet/ Ingenta.com: www.ingenta.com/ Fast search: www.alltheweb.com/ Ditto.com: www.ditto.com/ Yellow Pages: www.yell.com/

Incidentally, all of these resources and many more can be found on my bookmarks page, linked to from www.minimalism.org.uk/

The search engine that I have found most powerful, flexible and easy-touse for my general searching needs has to be AltaVista. This is purely a personal preference but I will outline some of the features that you can use with AltaVista. Incidentally, this search engine was one of the first major engines and consequentially a number of newer engines have taken their syntax from AltaVista's, I do believe.

The primary means of searching for information follows the standard enter-keywords-in-input-field procedure. Special characters, however, give special meanings to keywords. Probably the most useful is the plus character: +. If a keyword is prefixed with + (for instance '+music') then all pages returned by the search will have to have the word (in this case, 'music') somewhere in that page. Note, however, that if the page has changed since AltaVista last scanned it, then AltaVista's records may be out of date. This is the primary problem facing most of today's search engines.

So, a search for +*music pop* will search for all pages containing the word 'music', and of these pages, the ones containing the word 'pop' will be listed first. Similarly, +*music* +*modern guitar* will do a fairly decent search for pages about modern music and ones mentioning guitars will be listed first.

To search for subsequent words, that is strings of words, enclose those words in quotes. For instance:

+ "modern music" pop + "electric guitar"

will find pages about modern music (pop if possible) which talk about the electric guitar.

Likewise, the - character will eliminate words from the search. For instance, if I was looking for pages about modern music but I couldn't stand dance:

+ "modern music" +pop -dance would fit the bill nicely.

Another very useful little reason to use the minus sign is for eliminating sexual or pornographic material from searches. A typical search might result in 50 pages of results, of which the latter 10-30 might well have degenerated into return porn sites which use the wholely unfair tactic of containing thousands of random keywords in HTML meta tags in order to attract visitors.

Such is life. I for one don't let it get to me. So,

+ "modern music" +pop -dance porn

will nicely eliminate the unwanted ("-*sex*" is of course an option but how many modern songs are about said subject?)

The other main feature of AltaVista's search is of the keyword:text variety. Best to give an example:

+"unix"+url:microsoft

This will return all pages containing the word 'linux' with the URL of that page containing the word 'microsoft'. Try it; you may be pleasantly surprised.

So, *url:foo* forces 'foo' to be found in the URL (address) of a page. Other keywords exist:

*anchor:foo* Forces the page to have `foo' as anchor (ie, blue links) text

*applet:foo* Forces the page to have the foo Java applet in it

*domain:foo* Used to find a page in a specific top-level-domain (TLD), such as *com* or *uk* 

*host:foo* Finds pages hosted on the computer foo

*image:foo* Forces the page to contain an image with the filename ` foo'

*like:url* Finds pages similar to or related to the specified URL. For example, *like:www.abebooks.com* finds Web sites that sell used and rare books, similar to the www.abebooks site. *like:sfpl.lib.ca.us/* finds public and university library sites. *like:www.indiaxs.com/* finds sites about culture on the Indian subcontinent. (Quoted from AltaVista's documentation.)

*link:foo* Forces the page to have a link somewhere containing the word 'foo' in it

*text:foo* Forces ` foo' to exist in the page, outside of image tags, links or URLs.

*title:foo* Forces 'foo' to exist in the title of a page (ie, that which appears in the title bar of most browsers)

However, all that we have covered so far is of AltaVista's Simple Search. There is an even more advanced search available, which uses so-called Boolean operators to allow a more English-like and advanced search. For instance,

'modern music" AND pop AND
("electric guitar" OR (electro NEAR
guitar))

will search for pages about modern pop music which mention either electric guitars or electro-accoustic guitars.

The full list of operators available is: AND, OR, NOT, AND NOT and NEAR.

Note that the order of preference is from left-to-right, but of course this preference is overridden by + or -. Common sense will usually lead to the best combination of order and forced inclusion or exclusion in the search pattern.

The Advanced Search section is linked from the main page and is fully documented in online help, so don't be afraid to experiment. Personally, however, I rarely find use for it, such is the power of + and -. But try it out; it may be just your cup of tea.

A quick look at a couple of other of AltaVista's features. Firstly, it

supports a text only view; great for getting rid of all the graphical clobber once you are familiar with it's layout (and works well with text-only browsers such as Lynx, of course). It also supports returning results of pages in select languages (choose out of 32) and even has 'family filters' for excluding undesirable content, although this is pretty much just doing what we looked at earlier with the '-sex' technique. What's more, all of these 'preferences' can be 'saved' in a bookmark, meaning a complete customised search engine interface is only a bookmark away.

Finally the most powerful feature of all, a language transalator! Find it at babelfish.altavista.digital.com/

It's not perfect and it certainly doesn't quite measure up to it's namesake transalator fish but it's enough to turn a web-page of gobbledegook into readable English. The currently support languages are French, German, Italian, Portugese, Spanish and Russian — in various combinations of one to another. What's more, this transalation feature is available for your own text. I personally have quite easily turned
English into far-more-than-passable French using it and vice-versa. Incidentally you can also download the transalation engine, *SysTran Personal*, for use offline.

AltaVista also supports searching for various forms of media (that is, pictures and sounds) and has some support for web-page categorisation.

So, that's AltaVista covered. What about the others? Well, if your search falls into an easily-definable category, the one to try is *Yahoo*. Apparently standing for 'Yet Another Hierarchial Officious Oracle', it specialises in having predefined categories into which hundreds of thousands of pages fall. Select one of the top-level categories at the start and browse your way deeper and deeper into the network.

There are thousands of categories, and importantly, each URL is added only once it has been checked over by a real person (unlike most search engines where additions are done automatically). Of course, you can also do ordinary searches much in the vein of AltaVista or any other search engine. Google is a relatively new search engine, and certainly fast and minimalistic. It generally gives very good results and doesn't need any kind of complicated syntax (although therefore it is not quite as powerful). It does claim to have the largest database of any search engine at 1.06 billion web pages, although it does have as many links or URLs in its records which it hasn't visited yet. What is does have, however, is the ability to present two useful JavaScripty buttons for your browser's button bar (if it has one, Netscape and IE certainly do; others may do as well), one of which pops open an input-field for immediate searching and the other is a great function taking you to a random page which lies along the lines of your current page.

I remember the first time I used this button. I was looking at WINE, a Linux API for Windows programs (basically allowing you to run wellbehaved Windows programs in Linux). I clicked on the button and I was transported to the other main contender for the Linux-runs-Windows-programs battle, VMWare (if my memory serves me correctly, this one's for running two operating system's simultaneously on a single computer. Amazing stuff but it costs and WINE is free). Clicking on the button again took me back to the first one. Great fun.

The other main advantage of Google is that you can actually access cached pages of any link Google comes up with. The idea of this is to eliminate the annoying times when you click on a link from a normal search engine only to be presented with an 'Error 404: Page not found' message, or simply to find the server hosting the web page is down. You are notified of the date of the cached document, so this is a great opportunity for looking at pages which don't depend on being up to date for being useful. Of course, this is the bane of all site designers, as it will allow users to view data that is out of date, or even data that has been deliberately removed from the main site because it is incorrect or harmful to remain available.

#### Submission

Just to briefly cover submission, most search engines provide a means to submit your own URL. Usually this is just a matter of filling out a simple form with the details of your URL (and sometimes a password registration for maintaining the record in the future). In the case of Yahoo it's a little more complex you have to choose a category and lay out a description of the site and reasons for having it where you want it etc. Not more than five minutes' work, though, and it's well worth it.

As for additions or amendments to the HTML side of a page you wish to submit, there are none needed, although it will certainly help by inserting a couple of meta tags into the <head> section of your page:

```
<meta name='keywords'' content="
music, pop, guitar, classical, blues,
rock'>
<meta name="description"
content=''A site devoted to all kinds
of music''>
```

The *keywords* are used for indexing the page in search engines. If they don't exist, the main text of the page will be used instead. If they do, the main text will probably still be used, but possibly at a lower priority to the keywords you supply in the <meta> tag. Be careful not to use duplicate words in the keywords section; the indexing of your page may be cancelled at the point the duplication occurs. So 'funk, funk guitar'' is a bad idea.

The description may be used as, well, the description of the site that appears next to the URL of your page in the search engine results. If not, the first few lines of the text of the page are usually used.

#### robot.txt

An interesting little concept is the robot file, robot.txt, which should exist in the root directory of your web directory (that is, not the root directory of the computer your web directory is located on, but the directory where the top-level index.html is to be found). This file simply contains a list of additional files for any web spider to index and also files that it shouldn't access. Don't, however, rely on this to stop sensitive data from being found. To find, out, read on...

#### The Big Security Matter

Finally I want to take a look at a security flaw (or rather, a lack of good system administration) that has come

to light in the last few months. Recall something I mentioned earlier. When it comes to the web, if it can be found, it will be found. There have been a number of companies who have been caught with their trousers down storing files with sensitive data on their website, the latest of which being Woolworths. The simplest way to let you understand the problem is simply to show it to you.

### Go to AltaVista, and type in: +'*index of*"+*customer*

Hit 'go' and you will get many, many results instantly. What is this cryptic search pattern all about? Well, many http servers, when asked to return the page for a directory x but cannot find an index.html file in that directory x, will return a page containing an index of the files in that directory (just as if you'd typed 'cat' at the command prompt). This page is usually prefixed with the title 'index of x'. So, the said search pattern searches for pages stored in AltaVista's records which are indexes of directories, crucially containing the word (ie, the file) 'customer'.

For example: 'customer.dat', 'customer-cards.data' or *'customer-credit-cards.txt'*. No, it's not usually *quite* that simple, but it really doesn't take long until you find telephone numbers, credit card numbers and quite often a lot more, even addresses.

#### Sensitive data

Using a little of the old grey matter will uncover even more sensitive data. Using +url: keywords to limit searches down to files already indexed, or use HotBot's 'extension' field in the advanced search limits searches to files with dat, sorry that, extension. You will be surprised.

Now, I'm not telling you this because I want you to go out and start collecting credit card numbers. I'm telling you to make you aware of just how insecure the Internet is. None of these security 'flaws' are actually flaws —they are simply the result of bad system administration and people who, quite simply, do not know what the bleedin' heck they are doing.

#### Think twice

So think twice before you clicketyclick-click your credit card details off to some anonymous secondhand book dealer in the US. The very least you can do is to have a browse around a few search engines specifying only to search pages which have his domain or address in the URL (eg, 'url:joessecondhandbooks' alone, in AltaVista).

And, of course, make sure you never make the same mistake again in your own site. If your site is stored on a Unix system, make sure you set the file permissions correctly with chmod, if stored on a Windows or Netware volume it's done through a load of easy-to-use dialog boxes.

I've covered a lot in the last few pages, and certainly getting the best out of the web takes time and a little energy, but don't be put off by just how much there is to explore.

Take it a bit at a time, stop working when your shoulders are killing you and go and play with the kids. You won't regret it.

Any problems? The Club's Technical Support Team exists to serve and I can be reached through darren@armclub.org.uk for matters relating to this article.

## Living With A PC: Networking

A s a long-term Acorn User (since 1986) who has also had to use PCs at work for more than 10 years (the first was a DOS machine) I also prefer RISC OS. However, I am finding it increasingly useful to have a

When I got a Risc PC, it seemed only right to get a PC card. At that time, there were so many excellent CD-ROMs which were Windows only. In addition, my interest in family history, as well as a need for

In response to our previous articles on working with a PC, Peter Brunning explains his reasons for adding one to network with his preferred Acorn computers.

PC for access to software and data which are only readily available in PC format.

One of the main reasons for needing a PC is the prevalence of its applications and data. From very early days, I had a Master 512 expansion for running DOS programs and I used the PC emulator on the A410/1.

Neither of these were used very much as, due to the rapid pace of PC development, it seemed they were obsolescent when they were released! However, they were handy for moving data from one world to the other. compatibility with the office, made it highly desirable to have PC applications as well as CDs. In fact, I bought a second-hand Risc PC with a basic PC card included and then found I needed to upgrade the memory (and hard drive) to run anything much. In spite of my experience with both systems, I found it fairly challenging to make it all work.

Incidentally the seller of the Risc PC had found it necessary to switch to a PC in order to do his Open University course.

Eventually I upgraded the PC card to a 586 and Windows 95. For the first

time, I felt that the PC was in the same league as the Acorn. Upgrades to PCPro were also purchased in an attempt to run the latest PC software effectively —but it seemed quite a battle for much of the time!

#### Network

At some point, I installed a network between the Risc PC and an older Acorn which worked well. I started thinking about adding a PC to the network. The offer of a second-hand PC (no monitor) from a colleague clinched the decision. The setup of the network was not too hard and the Acorn (Philips) monitor allows a second input.

So now the PC card is hardly used and the real PC has taken over. It can simply support things like DVD and CD-RW drives and USB peripherals. It can share the Risc PC printer fairly reliably using SMBserver on the Acorn.

The PC drives, including the CD-RW, can be accessed from the Acorn using LanMan98 thus enabling me to deal with all those PC attachments more easily.

#### Internet access

The Acorn is used for all the many applications it does well but now I'm wondering about Internet access. Voyager is nice and simple but it's falling behind. Browse was good but it's no longer supplied, so I use Fresco for the more difficult sites. However, it crashes so often that the PC is gradually seeing more service. I have to admit that Internet Explorer and Outlook Express seem a lot better than the Acorn software. I wonder about continuing to pay for Argonet when there are good free PC ISPs.

As a footnote, my son went off to Uni last year. His machine is used mostly for the Internet and for running some software for coursework. In spite of a lifetime's use of Acorns, he felt he had no choice but to choose a PC. It's just a pity that Windows needs to be reinstalled once a term or so —and we still haven't figured out an easy way to get the sound card working again!

If you have any comments on this or the previous articles or if you would like to share your experiences of working with a PC beside your RISC OS machine please write to the Editor. See page 80 for contact details.

## **DrawWorks New Millennium**

With the first year of the Millennium not yet gone (or even arrived, if you want to be pedantic), iSV have celebrated the year 2000 with *two* new editions of the DrawWorks CD-ROM.

The main ones are DrawWorks (version 2.15 dated 2 May 2000), Mr Clippy (2.00 14 January 2000), FontFiend (2.45m 24 February 2000) and Professional Typography Expert 2500 (1.10 23 February 2000). There is also a collection of PD programs

Another Millennium version of DrawWorks adds three pages of new features and enhancements to the CD-ROM collection. Peter Jennings checked them out.

The original Millennium version was reviewed in Eureka 33 but the DrawWorks New Millennium Project has so many additions and enhancements to an already feature packed compendium of graphics related programs (*see the three pages at the end of this review*) that it well merits an update.

As before, DrawWorks itself is a bolt-on addition to Draw which adds an additional toolbar containing its extra features. The CD contains full, updated, versions of associated applications for graphics and fonts, all complete with online, illustrated, printable manuals. which can be bolted on to DrawWorks bolt-on, as well as the mandatory collection of clip art and the VIVID graphics enhancers for extended screen modes on pre Risc PC machines.

The major change in these is the addition of FontFiend in place of its little brother, Dr Fonty, as the font editor to supersede Acorn's FontEd. This has an automatic character builder, including the Eureo symbol, and can export PostScript Type 1 font with hinting.

FontFiend comes with a lengthy tutorial, a dictionary of appropriate definitions and the manual which

## Kerning

Kerning is stored in the "Intmetrics" part of a font. Kerning is the adjustment of gaps between letters. It allows the computer to alter the width of a letter (the amount the caret moves after printing the letter) depending on the next letter to be printed.





### Two of the tutorial aids to help you tackle fonts — an explanation from the FontFiend manual (top) and an entry in Dr Fonty's Font Dictionary

accompanies all the programs (although as a series of PDF files rather than the customary iSV format).

The manual, updated in February this year, starts with a 10-page chapter defining and explaining what a font is and comparing their construction to Drawfiles. Thumbnails illustrations help to clarify the definitions. This is a very useful tutorial to give you a good grounding in the basics before tackling the actual use of the application.

Also included is Dr Fonty's Font Dictionary, which defines all those obscure terms you are going to come across.



The collection of public domain and freeware bolt-on tools

### Typography 2500

Professional Typography Expert 2500 adds to and replaces the previous 2100 version —the figure refers to the number of ready-to-use typefaces supplied.

As before, they come in 13 categories: Decorative, Designer, Digital, Eastern, Gothic, Non Latin, Open Face, Sans Serif, Script, Serif, Symbolic, Uncial and Western and there are again accompanying collections of tools and utilities and a cataloguer to display and print out complete font families.

#### **Bolt-ons**

An interesting new addition is the collection of public domain and freeware bolt-on tools which can be individually dragged on and added to the DrawWorks toolbar (which is, of course, itself bolted on to Draw!).

These comprise:

*CTEnhance*, to give improved dithering in 256 colour modes. (Not for RISC OS 4.)

*DrawLots*, automatic drawing of a number of useful shapes, including curved, four-sided, triangular, star,

sinewave, Greek key, crosses and square spiral, all with a range of sizes and line widths.

*DrawPersp*, a 3D perspective drawing tool.

*DrawRot* to produce rotated and transformed patterns easily and quickly.

*Gamma* a Gamma setting tool for Risc PC monitors, with a photo of Sigourney Weaver to test them!

GrphPaper produces graph paper.

*SpiroDraw* which easily makes up spirograph type patterns. (*See examples on right.*)

*TextDraw* a scripting language for Draw.

*XChars* an improved version of the !Chars application.

*Draw2WMF* which convert Draw and DrawWorks files to WMF format.

*Texture Garden* an algorithmic texture generation program to produce background textures.





#### **Mr Clippy**

Mr Clippy, the clip art manager with the (mercifully) optional song and funky colour scheme, is now fully ImageFS2 compatible and has automatic conversion of upper case file names from CD-ROMs. It now supports background font blending in drawfile clips. There is a conversion program to transfer existing clip art groups from old versions of the program.

It comes with a big collection of more than 800 new PD clips, which can be left on the CD-ROM but still displayed by Mr Clippy in thumbnail form, viewable in succession as fast as you can click the mouse button.

# For a complete list of the new features see the follow three pages.

DrawWorks New Millennium Price: £40 + postage Site licence: £80 + postage (Upgrades are available) Supplier: iSV 86 Turnberry, Home Farm Bracknell, Berks RG12 8ZH Tel: 01344 455769 Email: atimbrell@aol.com Web: www.isvproducts.co.uk

## The main new features of DrawWorks New Millennium (Compared with the previous DrawWorks Millennium version)

## New Features List

On screen anti-aliasing. Background font blending Set the default line width for Draw. User selectable Grade and Interpolate levels. Line width scaling nudge buttons. Preferences option for Draw's default grade & interpolate levels. Writable options for grid spacing and divisions. Colour coded on screen manuals. New 'Copper' or Standard RISC OS window templates.

## **Toolbar features**

Autoscrolling toolbars that follow the mouse pointer. Nudge buttons for font size, height and line width. Shows currently selected font size and line width ticked on menus. Writable point size & height options on font menus. Extended versions of Draws line width and point size menus.

### **New Tools**

24 bit TIFF export at up to 1200dpi.
OLE editing of Sprite & JPEG images.
OLE editing of text areas.
Bolt-on toolbar, allows other apps to be integrated into DrawWorks.
Metaliser tool to shade objects with metallic tones.
Object spacing and positioning tool.
Set the leading (line spacing) for text objects.
FontFiend replaces Dr Fonty as font editor.

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### New Tools continued

Tracing of Bitmap images to convert them to vectors. Replace any colour with any other colour. Keep one colour intact while replacing other colours. Colour fitter - convert colours to their nearest named or Puretint equivalents. Object rotation dialogue box. Nudge buttons to rotate in 1 degree steps. Flip objects in both X and Y Axis. Object scaling dialogue box plus 5% nudge buttons. Scale an objects line widths without altering its size. iDesigner font suggestion tool now integrated into DrawWorks.

## Improvements to existing features

Soft edged shadows.

Use PureTint and named colours for shadows.

Use PureTint and named colours in the lining tool.

Automatically produce darker shades of named colours.

Control over grey component replacement when producing CMYK separations.

Anti-aliasing of JPEG images.

Export of sprites and GIFs at up to 1200dpi.

Import bitmap images as either 8 or 24bpp.

Import ArtWorks files as bitmaps.

## EPS (PostScript) improvements

Improved EPS importer. Adobe Illustrator 7 PostScript previews. Include sprites in Illustrator EPS files. Produce PostScript Type 1 fonts with full hinting. Integrated PostScript compatible font names database.

## Additional features (using supplied bolt-on applications)

Improved on screen rendering & dithering in 256 colour modes.
Drawing of other shapes such as polygons, stars and crosses.
Simple perspective drawing tool.
Produce rotated and transformed patterns from objects.
Gamma colour control for Risc PC monitors.
Design on screen graph paper.
Produce spirograph type patterns.
Text based scripting language for producing Drawfiles.
Export as WMF files.

## Mr Clippy

Now fully ImageFS2 compatible. Auto conversion of upper case clip names from a CD. More than 800 new high quality clip art examples. New ClippyCopy —transfer clip art groups from old versions of Mr Clippy. Background font blending in drawfile clips now supported.

## Typography 2500

More than 350 new fully hinted and kerned fonts.

## FontFiend

PostScript Type1 font export with hinting. Automatic character builder with EURO symbol support.

Improvements list last updated 2/5/00 iSV Products

## **ARM** Arena

Welcome to another look into the current Acorn/RISC OS gaming scene, this time reporting on the major events, of which I am aware, that have happened over the usually quiet summer period.

must for emulation enthusiasts containing many of the games releases for the BBC Micro, from well-known names (at least at the time) such as US Gold, Ocean and Imagine. Also contained here are the Level Nine adventures both in their

Andrew Weston looks at the latest action on the games scene, checks out the problems with some reissues of old favourites and reports on new developments.

Last time round, I reported on two releases —Overload from Paradise and The Chaos Engine from RComp Interactive.

At the point of writing, there have not yet been any brand new games released but the scene certainly hasn't been devoid of activity.

The major event which I looked forward to last time is the release of the Acorn User CD10, the 'games' CD. This contains an extensive array of formerly commercial leisure software together with many PD games and the archives of the BBC Lives! site. The latter category is a original form and in the form of data-files which can be used by an interpreter to play the game on modern Acorn machines. Several other BBC and RISC OS adventure games and development applications are available. Also, there is a demonstration version of perhaps the definitive BBC emulator, !6502em from Warm Silence Software.

#### **Ex-commercial games**

The inclusion of many formerly commercial games, many from Krisalis (who subsequently abandoned RISC OS to work on other platforms), has generated the most discussion on comp.sys.acorn.games. The principal reason is due to compatibility problems with machines and versions of the operating system released often much later than these games. The magazine seemed to imply that patches were included to allow all the commercial games to run on RISC OS 4/ StrongARM machines as well as their predecessors. However, the author of many of these patches did not have RISC OS 4 at the time and so obviously could not guarantee this! Consequently many people found that the games simply crashed their machine or would not load.

Fortunately, Gareth Moore has collated information on his 32-bit Acorn Gaming pages regarding patching these games for normal operation on recent machines hopefully solving most of these problems. The games include Gods, Alone in the Dark, Interdictor, Xenon2, Pacmania, Lemmings2 and Premier Manager. Also is the legendary Karma space simulation which works fine on the RISC OS 4/ StrongARM combination which is a great bonus for today's games players as the game had virtually ceased to be available and would have no doubt been virtually forgotten. One gripe I had with the game was that the included manual was in Impression format which essentially stops people without the Impression desktop publisher from understanding the game. Following a request on the newsgroup however, I am told that one Karma-enthusiast, Andy Bourne, has converted the manuals into textual format and the original author, Ian David Robinson, has even offered to put the files, once converted, in HTML format on his Karma website (see below).

At the time of writing, Andy tells me he is waiting for Ian Robinson to reply.

#### Problem with older games

The AUCD10 problem highlights the ever-present issue with older games. As the hardware and operating system move forward, the likelihood of games written for earlier versions working usually tends to decrease so if you have upgraded it is probably advisable to keep hold of your old machine, if possible, if you still want to be able to play the older games. Overall, however, the CD represents outstanding value for money and reflects a considerable amount of work, mainly by Paul F Johnson who sought permission for the inclusion of this large amount of software and its organisation on the CD.

I don't know how long stocks will last at Tau Press, the publishers of Acorn User, but several Acorn dealers around the country may well stock the magazine and have back issues available.

#### New version of Quake

RComp announced on the 13th of August that they have just released a new version of Quake for high-end RISC OS machines. This is based on a more recent version of the Quake engine from producers of the game, ID software. Interestingly, included in this version is a one tailored specifically for ARM7500FE-based RISC OS machines i.e. the A7000+, RiscStations and Mico machines.

This version takes advantage of the floating-point hardware built into the processors of these machines. Such hardware performs mathematical functions which would otherwise have to be dealt with by software, thereby boosting performance on a machine with a processor clock speed slower than a StrongARM for example. As said on Acorn Arcade, this development shows RComp's commitment to optimising Quake and besides may well prepare a sound foundation for later Quake conversions, for example when faster RISC OS hardware is released. Such a development must be good news for the future RISC OS conversion scene at least. Quake is available for £23.

#### Interesting proposals?

David Bradforth, the man behind various RISC OS-related projects, such as ProAction and RiscAction/Smash magazine recently made the startling request on the Acorn newsgroups for interest in conversions of various PC games such as Tomb Raider and Zool2.

Since this announcement was made I've seen no feedback on this scheme despite David thinking that the actual conversion process should not be difficult in general. Presumably, the financial considerations of converting such games are more important and maybe if these are resolved we'll hear more of this ambitious plan.

#### Stunt Racer2000

For several weeks now, Simon Challands (maintainer of the Acorn Elite pages —part of Acorn Arcade) has been organising a league of results for owners of the classic 3D racing game, Stunt Racer 2000. The producers of this game later proceeded to produce perhaps one of the best ever Acorn-native games — Starfighter 3000 (now undergoing redevelopment by third parties).

The idea of the league is to enable fans of the game essentially to compete against each other. Primarily, this involves downloading a course and attempting to get the fastest possible time in between league updates. The player then has to post a recording of the race to Simon as proof. Another planned idea is to compete against computer-controlled cars by downloading a saved-game file and racing to achieve the best finishing position. The league seems to be a great way to extend the life and expand the scope of this popular game and could possibly be extended to other games if there are any takers? The URL of the league is included at the end of this article.

I maintain a website dedicated as a tribute to the renowned 8-bit BBC Micro game Exile, hailed by some as one of the all-time best Acorn games. This may be of some interest to users of current Acorn or essentially Acorn-derived machines who are able to play the game under emulation using emulators such as !6502em.

The site contains information on the history of the game (including an interview and comments with its coauthors), the whereabouts of game assistance and later conversions amongst other material. I hope this makes for an enjoyable visit and I have also included the URL at the end of this column.

#### More from Acorn User

Paul F Johnson, the Acorn User CD editor is attempting to include the racing game Lotus Turbo Challenge II, converted from the Amiga in the early '90s, on the next (November) cover CD. I haven't played the game but those with long memories may remember it as the game featured in the television adverts made by Acorn at around the time when the A3010 was released! I understand it is quite



#### A screenshot of the lower price Destiny

enjoyable and so should be worthy of inclusion if possible. Another notable development in Acorn User is the reduced price of the RISC OS-native 3D-walkabout Destiny released in 1998. The game was vastly improved following feedback on its initial release and at only £8 for subscribers and £10 for others, it is surely a bargain for any fans of the Doom/Quake genre.

#### The near future

At the time of writing, I have not heard any further news on TEK 1608, the real-time battle-strategy game from Artex Software. I mentioned in the last column that the game was given a release time of Summer this year but this remains to be seen. I will hopefully bring more news, or even better a release date, in the next column. The Greek games group Fantasia recently made a rather unpredicted posting onto comp.sys.acorn.games regarding their own developments. They state they have been 'working hard' on an original RISC OS game and continue to describe quite impressive technical details of the game engine mentioning such advantages as good compatibility through the various **RISC OS** machines, expandability and multiplayer support. In an email, Bill Kotsias from Fantasia explains that they wish to release the game 'sooner rather than later' but the group have 'a few more MBs of graphics to be designed' before any screenshots are available.

This makes for an intriguing, if unrevealing description and again, we'll have to wait to see if this project sees the light of day.

Once again therefore, there's something for RISC OS games players to consider acquiring, look into or at least something to anticipate. I'll seek out news wherever possible and of course, keep you informed. Until next time, enjoy yourselves!

## Contacts

### Warm Silence Software

www.wss.co.uk P.O. Box 28 Woodstock Oxfordshire OX20 1XX Tel: 0585 487642

32-bit Acorn Gaming

www.acorn-gaming.org.uk

Acorn Arcade www.acornarcade.com

#### Karma

www.argonet.co.uk/users/inspire (Follow link to Karma pages)

### **RComp Interactive**

www.rcomp.co.uk 22 Robert Moffat High Leigh Knutsford Cheshire WA16 6PS Tel: 01925 755043

Exile Tribute Pages exile.acornarcade.com

Stunt Racer 2000 League www.3dfrontier.fsnet.co.uk/srlea gue

## **Textease Studio & Spreadsheet**

Textease, which made its debut six years ago as a cheap and simple to use desktop publishing program for Acorns only, has gone through a steady evolution becoming multi platform and more sophisticated as it added more and more components

The Multimedia version of Textease was reviewed last year in Eureka 31. Texteast 2000 has now added the following major enhancements:

**Cropping**: Photos can now be cropped. Just move near the edge of

Yet another enhanced version of Textease appears, this time also adding spreadsheets and databases to its word processing, DTP and multimedia features.

(and picked up some awards on the way).

The latest version, succeeding its Multimedia editions, is Textease 2000 and it also comes as part of a big new package on CD-ROM, called Textease Studio. This has added a spreadsheet and database to its features and so now competes with that well established series of programs, produced by Colton, culminating with Fireworkz.

As before, the CD-ROM is multiplatform with all files completely transferable between RISC OS, PC and Apple machines. a selected object until you see the cropping pointer, then click and drag. (At present, the RISC OS version does not crop JPEGs.)

**Word bank:** This can now contain pictures as well. In fact, wordbanks are now Textease documents and so can contain anything and be made to look very attractive.

**Polygon tool:** This new tool can drag irregular polygons. The polygons can be easily edited after creation to have lines added and removed and to have beziere curves added and removed. Right clicking on the polygon tool brings up a bank of predefined shapes. The polygon tool also features 'snapping', to make lines easily horizontal or vertical and to make symmetrical shapes by snapping when horizontally or vertically aligned to another point in the same polygon.

**Record sound directly in:** This is great for recording voices directly for teaching, or for multimedia. This feature is not yet available for RISC OS but will be added in the Autumn for the RiscStation.

#### The new spreadsheet

In this review we are concentrating on the new spreadsheet which, like the database, can be bought separately as well as being part of the Studio package. The full version of the database has not yet been released so we will look at that in our next issue.

By then, there will also be some additional features for the spreadsheet (supplied free to those who have already bought Studio) and Textease will have added French and German language packs which will turn all the messages, dialogue and spell checking into the foreign language. If you think that spreadsheets are all a bit complicated to set up and use you will be pleasantly surprised at some of the short cuts that have been built into this one to simplify it, while still making it a powerful application.

Running it, by clicking on the icon bar icon, opens an empty spreadsheet with a button bar and information line along the top. Column widths and row heights can be changed by putting the mouse pointer on the right hand or bottom line and dragging to the required size.

Columns and rows are added by placing the pointer in a cell and clicking Ctrl+Tab for a column to be added on the right or Ctrl+Return for a row to be added below. They can be deleted by selecting columns or rows to highlight them then pressing *delete* or moved by selecting and dragging.

Sub-tables can be formed by selecting and copying the required cells.

All very simple but the feature which first grabbed my attention was the ability to create a spreadsheet from the menu. Click on Table-Create and the pointer turns into a cross. Place

	а	b	С	d	е	f	g	
1	PUPIL							
2	Name	Age	Height	Oldest	Youngest	Tallest	Shortest	
3								
4	Bob	12.	1.52	Oldest		if( c4=\$c12, "Tallest", "		."")
5	Mary	11.1	1.8			Tallest		
6	Sam	10.2	1.24		Youngest			
7	Alex	11.1	1.65					
8	Brian	11.5	1.16				Shortest	
9	Joe	10.6	1.77					
10								
11	Average	11.083333	1.523333					
12	Maximum	12	1.8					
13	Minimum	10.2	1.16					
14	Total	66.5	9.14					

### Clicking on a cell (f4 in this example) shows the formula entered in it. This can be dragged to other cells and the references are automatically changed for each new position. Here f5 fulfils the formula's conditions.

the cross where you want the top left corner to be then drag right and down to open a spreadsheet which automatically forms as many columns and rows as you wish as you drag it to size. How delightfully simple.

A unique feature is that a spreadsheet is an object in a document rather than a document itself, which means you can have as many small spreadsheets as you wish (subject to space) and other objects, including clip art and other graphics, all in the same document, within or outside the spreadsheet itself.

The next thing to impress me was the method of entering formulae. Five pages of available formulae (and their meanings) are listed in the user guide but there is no need to look them up when you need to use them. A click on the fx button on the button bar opens a formula editing window with a drop-down menu containing the full list with their parameters, each one ready to be added with a click.



# Interactive bar and pie charts formed from the height data

If you want to repeat a formula in another cell it is not necessary to rewrite it. You can select and drag it to make a copy and any cell references it contains are automatically updated for its new position.

Selecting a range of cells and clicking on the *chart* button will allow the chosen data to be formed into a choice of Bar, Pie, Line or Scatter graphs. These are automatically updated if the spreadsheet is changed. Pie charts can be very simply exploded by selecting and dragging a sector.

Other useful buttons allow the quick addition of figures in a range of cells, data sorting in ascending or descending numerical or alphabetical order, changing the size, scale, orientation (landscape or portrait) and appearance of a page and turning on the speech option.

The spreadsheet follows the Textease tradition of innovate and easy to learn and use features.

Textease Studio Studio (including spreadsheet and database) price: £149 +VAT Multi users: £25+VAT each Spreadsheet price: £39+VAT Multi users: £10+VAT each Supplier: Softease Limited Market Place, Ashbourne Derbyshire DE6 1ES Tel: 01335 343421 Fax: 01335 343422 Email: sales@softease.co.uk Web: www.textease.com

## **The ARM Club Midlands Show**

The show this year is again being held at its popular venue in the National Motorcycle Museum near Birmingham with its easy access from anywhere within the UK.

attendance at RISC OS Show 2000 just six weeks before. Also they will have many bargains especially as there will be just over three weeks to go to Christmas.

After the RISC OS 2000 Show at Epsom there's still the Midlands event to look forward to. Ralph Sillett gives the details and tells you where to find more information.

The venue is adjacent to the National Exhibition Centre (NEC) at Junction 6 of the M42 and less than two hours from London, Leeds, Lancaster, Bury St Edmunds, Taunton and Cardiff. Even from as far away as Dundee there is at least dual carriageway or motorway to the Show.

If you can afford the expense of flying or even if you are just taking the train then the venue is no more than ten minutes away from the nearest airport or railway station. In fact a free bus service is laid on from the rail station which is a short ride via the monorail from the airport.

We hope to have as many of the exhibitors as possible that will be in

So rocket down to the National Motorcycle Museum for that upgrade or new computer you have always promised yourself.

As there is no show in Scotland again this year we hope to see many of our Scottish members and other Scottish users attending.

Dont forget to bring your membership card to be able to get a pound off the entrance fee.

Do you have an interesting hobby which uses the power of RISC OS or do you run a business with the use of RISC OS (such as a printer)? Then why not show off at The Midlands event. We will supply you with a table



(or two). Applications and full details need to be with me by the 1st November to be considered for this free space. Only two spaces available.

#### **Further information**

For further information regarding this event you can contact me at: ralph@armclub.org.uk.

To keep up to date on exhibitors see our Web site: www.armclub.org.uk/ shows/midlands.

The Tourist Information centre is a good source for accommodation and

travel arrangements throughout the Midlands. They can be contacted on 0121 643 2514 or 0121 693 6300.

Alternatively look on the Web via a search engine by entering 'accommodation+West Midlands'.

Or check out www.where-can-ifind.com/tourist-information-uk.html.

Travel West Midlands at www.travelwm.co.uk (bus services). www.railtrack.co.uk/travel/index.h tm for rail travel.



## **Airborne With Acorns**

We have been designing and manufacturing gliders (sailplanes to some) since the late 1980s, and after something of a shot in the dark on the basis that I had been using a BBC-B for some years, we opted for an A310 and a couple of A440s for our computing.

laboriously hand cut bits of plywood that one used to have. In addition, it became so easy to cut bits out on the Wadkin that we could make prototypes in cheap material before cutting up expensive aircraft material. Eventually a secondhand AO plotter completed our computing equipment.

Sailplane manufacturer John Edgley explains why he uses a collection of Acorn machines (which started with the BBC-B) to design his successful range of gliders.

Full CAD back then was expensive or slow, or both, so we stuck to the drawing board for assemblies, but used Oak PDT both for setting out the main geometries, which can get quite complex on anything designed to fly, and also for all our individual components.

We had the local Acorn supplier write a customised program for us to postprocessor the data to turn it into NC code to drive a Wadkin CNC router which we had then recently bought secondhand at a machinery auction. This meant that our 'tooling' was the Oak PDT data, rather than the Many a time an initial geometry was done on the A440, and then, on a horses for courses basis, detail added on the drawing board.

Our prototype single seat glider, the EA9, was finished in 1994 and then in 1997 we formed a new company, down in Bideford, North Devon, to put it into production.

We went through the shall we stick to Acorn or go for PCs question. We came to the conclusion that the devil you know is better than the devil you don't, so we bought a Risc PC with a PC card, to add to our by then five

other Acorns —we had purchased a couple of A5000s along the line. Also, our employees one of had considerably improved our post processor program which now loads on the Icon bar (still single tasking), although in some respects this improvement has been a mixed blessing since it is now much more difficult for others, with limited skills in BASIC, to edit —that employee having gone his own way to become a full time computer programmer.

#### 3d CAD

Now we are about to begin the detail design of the EA10, a two seat version of our glider. We have been lucky enough to be able to go for an up to the mark 3D CAD package, to help us avoid the problem of components that don't quite fit. Two-D is OK when everything is at right angles —but inevitably in an airframe hardly anything is —and detailed geometry had turned into a bit of a nightmare on the EA9.

We looked through all the 3D packages on the market and homed in on Catia, on the basis that if it is good enough to design an Airbus (along with a lot else) it was good enough for

us. When we bought it Catia would work only on a Unix box, so we went for a Sun Ultra 10, 300Mhz and 256MB memory, small by Unix standards. I sometimes wonder why one cannot simply stuff more memory in an Acorn but then I don't know much about the hardware. The training on the Catia has been a big expense; they simply won't sell it to anyone unless they agree to the training and backup as part of the package.

The Catia is only the 3D bit. We still have to do all the components and keep a team of two or three engineers busy. So again we had the PC-Acorn question. It was the Catia supplier themselves who suggested sticking to what we know, so as an act of faith in Acorn we went out and purchased a further five Risc PCs.

#### Networkef

We have networked all the Risc PCs. I cannot think why we didn't do it before, we always used to carry floppy discs around from one machine to another. We opted to use one Risc PC as a server with an ancient monitor from the old A310. The others are all new 17"/19"/21". The Sun box is also on the network and files (in the right place on the hard disc) can be accessed by any of the Acorns. We used floppy discs for a time but Acorns don't seem to understand tar (Unix) discs, which was a real nuisance.

We are about to purchase a second Sun Ulta 10. Catia will now work on Windows\_NT. We had a demonstration on an IBM with two Pentium processors inside it (why can't one have two Acons working together to increase processing power?) but we have decided to stick to what we know at slight extra cost.

#### Right set up

I am pretty happy that we have the right set up. We have been working on a customised update to Oak PDT, so in the fullness of time that may be something that we can offer to other people, together with our postprocessor, although at present we are doing all this just for our own use. In addition, we are now tending to make regular use of ProCAD+ as an alternative to the drawing board but then that gets into the whole question of the other software that we use and I have agreed with your Editor to do a follow up article on the subject of all the Acorn software that we use and would like to use if it were available, if that would be of interest.

#### Stable platform

I do get the occasional "Why can't we have a PC" from new graduates and students who come to work here. They seem generally to have been more used to PCs at university, particularly for report writing. However, they soon get used to the Acorns that we have and there is even grudging admission that they can be a more stable platform.

Well, I will finally admit that we do now own a PC, purchased to do our Internet and e\_mail work because I will not allow any of our networked computers to be connected for fear of a virus. Does it work OK? I think that we made a mistake buying a cheap one. I fail to believe that they all give as much trouble as the one that we have. Some of the software is very good though.

For me? I still stick to my drawing board for all concept work. There is nothing to beat a nice new sheet of A0 tracing paper.

## **ArtWorks BMExport Module**

The latest module from the ever active Martin Wuerthner is actually two linked modules called !T\_Spr and !SpoolTool. (The second is a small upgrade from the previous

greyscale, browser-safe and optimized palettes, including errordiffused dithering. You can enter the desired width, height, scaling or dpi value for the bitmap. The module

Christopher Jarman looks at a new module designed to help export your ArtWorks drawings as Sprites or GIF files and make Web design easier.

one of the same name). If you do not have this update then export of transparent bitmaps for documents containing sprites may be incorrect. The new module will run only in RISC OS 3.5 or higher. Also ArtWorks V1.5 is the recommended version. I should imagine that most people will have that now as Computer Concepts development ceased a few years ago.

The full title of the new module is BMExport and it allows you to export your ArtWorks drawing as either an Acorn sprite or a GIF file. It gives a full set of options including export with a transparent background, export in 16, 256, 32K and 16M colours with standard Acorn, uses InterGIF, an application written by Peter Hartley and released under licence. If you do not have InterGIF, do not worry because BMExport contains the parts it needs.

If all this sounds a bit heavy do not worry as the working of the new add-on is simple. After installation you will see no apparent difference in your ArtWorks program. However, when you select Menu/File/Export you will see that two more alternatives have been added to that menu 'Sprite' and 'GIF'. You just click on whichever one you want to save and 'Bob's yer uncle'. You are taken to a version of Peter Hartley's Intergif interface. I am not sure why the choice of Sprite or GIF is given in



the menu as it is also given again here in the interface window. However, this is what Microsoft has now taught us is it not? To have 10 choices where one would do. You may output from this point as a greyscale, interlaced, browser-safe or optimised bitmap. I have tried it out and it works perfectly. It is certainly easier and with more options than snapshotting vour ArtWorks window with Paint. It the first transparent GIF is incidentally that I have found works immediately on the PC when ported across on say, a Textease file.

There is little more that I can say about such a simple yet effective and valuable add-on to ArtWorks except that I shall be using it a lot.

ArtWorks BMExport module Price: £15 by email £17.50 by post Site licence: £30 (max 10) £60 full Supplier: Martin Wuerthner Mannheimer Str. 18 67655 Kaiserslautern, Germany Tel: +49 (0)631 3608205 Fax: +49 (0)7034 928915 Email: martin@mw-software.com Web: www.mw-software.com/

## **Gill's Journal**

Toby's up-and-coming company have recently discovered the downside of running a public website. It's the public. It's amazing how many people join up-and-coming.com giving their e-mail address and details and adding themselves into a

revenge, and have a bit of a laugh at the numerous masses who wouldn't know an ID ten T error if it leapt up and hit them. (Think about it... replace ten with 10 and read it carefully!)

Gill confides to her Journal (and us) her opinion of those ID ten T people from cavemen to the non-spods of today who can't get to grips with technology.

few groups —groups which are, essentially, mailing lists —and then complain, often quite offensively when they happen to get mail. From a mailing list! Some have even accused the company of using some sort of evil software to steal their e-mail address, when the only way the advanced technology can get information about you is if you type it in.

While I know that all of my readers know their mouse from their modem and their bytes from their browsers, not everyone in the world is as fortunate. So, for a change, I'm giving the spods a chance to get their I asked for contributions from your very own Club Committee for this Journal, and was amazed by how little response I got. Maybe they've all been using computers for so long that every error is now dull; maybe they don't want to drop their mothers in it (I'm glad mine won't read this!) or maybe they hang around in slightly more clued up circles than these.

I apologise if some of these stories are old to some of you, but then people have been misusing technology since the first caveman decided to decorate his cave with that nice rounded thing that rolled down the hill. My first contribution comes courtesy of generations of schoolchildren and is probably one most people have done at some time or other. It's amazing how often someone will send something to the printer dozens of times, and then report the printer broken, all without checking whether paper might be a nice idea! Although of course, if you have a slightly more complicated error, and the machine 'can't find' the printer, it might be best to check that they're facing each other - perhaps you could even introduce them politely... you wouldn't be the first!

Of course, that's nothing compared to the problems that some people manage to have with the mouse. For example, once they've worked out that it isn't a foot pump, many people manage to get 'stuck' at the edge of the mouse mat, and can't get the mouse to wherever they were aiming to move to. Still others have problems because the pointer is meant to follow where the mouse moves around the screen but picking the mouse up and waving it around in 3D rarely has quite the desired effect. These mistakes are of course assuming that the user has managed to take the 'dust cover' off —or perhaps just the plastic bag the mouse came in!

I'll assume you've heard the many stories of users who call tech support to find out why their computer isn't working, only to be faced with the complexities of having to plug it in. Others are faced with the fact that the machine doesn't just keep going through a power cut! The 'on' switch is also a good idea, as I watched many fellow Arts students discover.

It always amazed me how few people had worked out that the computer was much more likely to work if you hit that big button on the front. Another popular one is deciding that it isn't working, and switching it off, when that little 'on' switch on the monitor might be worth a try?

More worrying still are the tales that tell of people managing to break their computers —or parts of them through sheer stupidity. I'm sure you've all heard of people complaining that the mug holder broke —you know —that nice little sliding thing that comes out when you press a button? Perfect for a cup of machine dispensed coffee.



Of course there are plenty of older fashioned ways to damage your computer. For example when loading stuff from discs, put in the first dicc and install. When that's finished, put in the second... by the third, it can be really hard to jam it into that small slot! This does of course assume that your disks are still flat —that you haven't decided to roll them through the typewriter to type the labels or pop them on the photocopier if someone asks you to send copies.

A fun trick that a certain spod who will remain nameless used to play on my poor mother was to lift a floppy disk up to the light, slide the metal part aside and then mutter "Ah yes, I can see your problem. Something to



Cartoons by Jan Pearce
do with that letter you've got on there...this is a difficult one..." Not normally a trick to impress your future Mother-in-law, but fortunately she has a sense of humour!

Technical support teams across the world are regularly amazed not only by the filthiness of keyboards but also by the methods of cleaning them. It's amazing how many people appear to share their lunch with the computer, in lots of small bits of course. Others try to clean them off with anything from vigorous shaking (always good, for any computer parts!) to removing the keys and popping them and the keyboard into a tub of hot soapy water. The much easier, safer task of cleaning the mouse — and even mouse mat seems to be too much of a challenge. Many people seem to prefer to run a gritty mouse around a patchy mouse mat, jumping wildly about the screen as they meet these hurdles, rather than attempt any cleansing there.

Others have had fun trying to send a fax, or an attachment. Sadly these cannot be sent by waving them in front of the monitor, or by stapling the document on to the screen. Great fun to watch though...

Of course, the all time classic errors are usually the most common too. The long search to find the 'Any' key may not have been something you wasted time on, but you probably know someone who did. Tell them that's another name for the 'Enter' key, and they'll be fine for life! Of course keyboard problems aren't restricted to users. When the machine can't find its keyboard many produce an error message explaining this, and asking the user to 'press space bar or F1 to continue.'

My absolute favourite example of user error is the distressed caller to a helpline. The poor caller was really upset that the computer was being pretty rude and abusive and, while being aware that they didn't know much about the technology, the user felt this sort of personal attack wasn't on. Why should anyone —or thing tell him that he was "bad" or an "invalid."

I believe the helpline tech did manage to explain that 'bad command" and 'invalid" meant that the user should still be calling for help, but shouldn't take it personally!

## **Question Time**

### What is MIME?

In 1992, a new standard was defined. RFC 1521 and RFC 1522 — collectively called MIME.

MIME is essentially a way of encoding an email so that open to extensions. It builds on the older standards (including the oncecompeting X.400 Message Handling System) by defining additional fields for the mail message header, that describes new content types, and a distinct organization of the message body.

Darren Grant gives detailed answers to some of the questions which have cropped up in The ARM Club's technical support list over the last few weeks.

international characters can be understood by the recipient and not mangled by different character sets belonging to different operating systems and so forth. MIME has the capability to encode in messages: US ASCII text (or other character sets), multimedia (images, audio, video), arbitrary binary data, different fonts and more.

In order to avoid common problems of the Internet, namely, newer or updated protocols not working on new programs, MIME is defined to be completely backwards compatible, while still remaining flexible and Some of the most important innovations in the MIME standard include explicit descriptions of the set of allowable Content-types, subtype mechanism for Content-types (that is, types within types), and multipart types, which are used to encapsulate several body parts within a single message body (such as pictures, audio and text). Also, standardised encoding of non-ASCII data and non-ASCII character sets.

### And PGP?

PGP stands for Pretty Good Privacy. It's a method of encrypting data so that only the intended recipient is able to decrypt it and read it. Suppose you have a message for Fred that you want no-one else to be able to read. You know that Fred has a public PGP key and that key is published on his website. You go to his website, find his public key and use your PGP program to encode the message, using his key. Fred receives the encrypted message, runs his PGP program on it using his *secret* key, and lo, the message is decrypted.

Data that is encrypted with a public key can only be decrypted by the matching secret key. The secret key, however, also needs a password to work, so when Fred receives the message he uses his secret key in conjunction with a password to decrypt the message. If he loses his password (and has not made safeguards against this first), no-one will ever be able to read the message. Well theoretically, as very very large computers working on it for quite a few months would be able to crack it but that's pretty extreme.

PGP is also commonly used for 'signing' texts. This works the opposite of encrypting something for one particular person. A file is encrypted with the secret key and decrypted with the public key which is usually packaged together with the encrypted file. The file can be verified to be from the original author by checking the encrypted file against the public key.

This is a rather brief description of the technology (and I may have got a few details wrong in writing it). For more info, go to www.pgpi.org

## Threads — something to do with sewing?

Not quite. Threads are an incredibly useful way of running several processes at the same time. This is known, of course, as multitasking, and is something the Acorn system has been doing successfully since 1987 (preceded only by the likes of the Mac and Unix, which has been multitasking multiple users on the same network since the early 60s).

On a normal PC or desktop computer there is only one processor and so, although it may seem that many processes are running simultaneously, in actual fact the processor is working on only one task at any one time. It is simply switching between them all so fast it seems they are running all at once. On a computer with multiple processors, of course, more than one task can actually be worked on at the same time. Now, threads are used to separate different parts of any one *single* task into individual units which can be worked on using task-switching or by using more than one CPU.

Example: Java is a multi-threaded language. This means that many different methods (functions in Basic, routines or procedures in other languages) can be run simultaneously. You can instruct methods to sleep for a while, to take priority over other methods, or to stop and start at will.

Now, a great example at this point is the tale of the dining philosophers. The story is told that five philosophers are sitting around a table in a Chinese restaurant but for some strange reason the restaurant has decided to place only one chopstick at each place in the table, immediately to the right of the person sitting there. So, around the table, we have philosopher, chopstick, philosopher, chopstick and so on. So, how are the philosophers going to eat? One way is to wait until both chopsticks (one on each side) are free, grab them, eat for a bit and then release them. This should allow theoretically adequate distribution of resources among competing processes but in actual fact rarely works. What tends to happen is that each philosopher will grab the chopstick to their left, but by the time they reach over to the chopstick on their right, their neighbour has it. This is known as a *deadlock*.

To avoid situations like this, the Java language provides several keyworks or functions, including *yield()*, which yields a running process to the next available process in the queue, and *synchronized*, which instructs the processor to run a method from start to finish without any interruptions.

So that's some of the issues of a multi-threaded language covered. Operating systems can also be multithreaded. Windows is now multithreaded, which means each process can be split down into sub-processes and sub-processes but of course if you only have one processor you certainly won't gain any speed (in fact your code may execute ever so slightly slower), it just helps to program in this manner.

Enough of the diners, on to the...

#### Servers

A server is a very generic term. Possibly one of the first examples of a server was in the case of the X Window System, the windowing interface for Unix machines. In this situation, the server is a program which clients (individual applications) can connect to in order to display their output.

There is no need in this case for the server and the clients to be running on the same machine. It is a common practice in the Unix world for a user to be sitting in Glasgow (or America or anywhere) and running a program on a computer which is sitting in London. The input and output takes place on the computer which the user is sitting at, the 'thinking' takes place on the remote computer.

However, over the years the common meaning of server has changed somewhat. Nowadays we have Internet servers and clients. In this case, Internet servers provide a service which multiple clients can connect to. Some common servers are HTTP servers (sometimes referred to as web servers), ftp servers, telnet servers, SMTP servers ('mail' servers), IRC servers, ICQ servers, time servers, and many more obscure servers exist.

So, to take the most recognisable example, an HTTP server (of which the most common, Apache, written for just about every OS under the sun but mainly Unix, holds about 60% of the market, followed by Microsoft's IIS server with about 20%). A single computer sits connected to the Internet, and this computer runs the HTTP server.

Any other computer on the Internet can connect to this computer by using either its IP address, or the textual equivalent (a fully-qualified domain name, such as www.armclub.org.uk) and by using the correct protocol (in this case, obviously, HTTP), can retrieve information from the server, and sometimes send information to the server.

### PASV mode?

The ftp protocol is a tried and tested method of transferring files from one computer to another but, as with all older technologies, new problems arise which cause new solutions to be found. One of these such problems is that of firewalls, designed to stop incoming TCP connections. This in itself is a good idea but, unfortunately, the way ftp works is for the server to establish a TCP connection with the client computer only once it has been asked to. A firewall will, predictably, block this connection, unless it's a particularly smart firewall (not so easy because once you let in data from one port, it immediately becomes a hotpoint for any hacker to try and break in). So, quick solution to the problem: PASV mode. In this server mode, the client initiates the connection and there are no incoming TCP connections to the client's machine, so the firewall does not know, or need, to block anything.

However, many ftp clients do not support PASV mode, including the down-to-earth DOS *ftp.exe* which even the monstrous (in all respects) Windows 2000 still manages with. Users can send a 'quote PASV' down the line, which will initiate PASV transfer mode, at least from the *server* end, but the client will simply not understand the mode. The only solution is to get a better ftp client.

Any questions? You know who to call and remember that you get a personal reply. You don't have to wait to see the answers in the magazine.

Send your problem by email to: support@armclub.org.uk (this is the preferred way) or write to the Club's Merton Court Address (see page 80).

In emergency, you can telephone the Technical Help line: 07010 708098 (this a higher charge rate line as a portable phone is used).

Please remember, though, that the Club does not have any paid staff. All members of the Technical Help Team are volunteers who have other work and commitments so it will not always be possible to get immediate assistance.

### **RISCOS Ltd 'commitment to future'**

Just before this issue of Eureka went to the printers, RISCOS Ltd issued the following statement in reply to some of the questions which have recently been raised about the company's present situation and future intentions.

There has been much talk on the newsgroups over the last six months about whether RISCOS Ltd is dead and what is the future for RISC OS?

The control of PR is a tricky issue, as if you announce products and plans too far in advance, people get annoyed if you don't deliver on time and you also risk sales of current products falling off if people think there is a new super duper product just around the corner.

RISCOS Ltd is adapting to different market conditions which are affecting all IT related companies at present i.e that there is too much work to be done, with too few people to do it.

We are making a commitment to future versions of RISC OS and are meeting with all the interested parties to talk the development of RISC OS forward for the benefit of everyone. New partnerships are being forged to ensure that RISC OS remains the product of choice for ARM based processors.

RISC OS is by no means dead, but just because you can't play DVD Movies on a Risc PC at present, doesn't mean that no-one wants to use RISC OS.

Pace for example have recently announced the order of 10,000 units of their DSL4000 box which runs RISC OS.

Further announcements will be made when appropriate, but just because there is no news, doesn't mean bad news.

Paul Middleton, Managing Director RISCOS Ltd

# **Coming in Eureka 37**

There are already some interesting articles lined up for the next issue of Eureka, including a look at what was on view at the RISC OS 2000 Show and a review of the latest version of the huge HyperStudio multimedia package, designed for use by everyone from primary school children to professional designers.



A HyperStudio portfolio

We also look at the latest addition to Textease, a database just added to its new Studio package.

Other reviews will include Maths Keywords, from Sherston, which defines and illustrates all those mathematical terms which add to the difficulty when learning maths subjects, and BEEBUG's Hard Disc Companion, a vital aid for backing up and restoring programs and data.

We will hear about the pleasures and problems of being the Webmaster for a thriving computer club and our regular series will be back with more Web Site Seeing, the latest batch of questions and answers dealt with by our Technical Help team, and some more provocative pages from Gill's Journal.

That, and more, will all be in the Spring 2001 issue of Eureka.

In the meantime, enjoy the Show and have a very happy Christmas and New Year (with another chance to celebrate the Millennium —the real one this time — if you want to be pedantic!).

### **Club contacts**

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## Benefits of membership

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



- The Club's magazine, 'Eureka', written by members, is published and sent free of charge four times a year.
- Free software to accompany articles in Eureka is available on the Club's FTP site or can be sent to members on disc.
- Free Technical Help Service. We will do our best to solve any problems which you may have, by email, letter, telephone or fax.
- Special discounts for Club members from well-known companies.
- Regional open days and shows are regularly organised by the Club. Other events can be arranged on request.
- Special offers at shows and open days.
- Regional contact lists of other members, available on request.
- 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 a recent issue of the magazine and software.

Annual membership £12 (+£3 joining pack for first year) Europe £16 and rest of the world £19 The ARM Club, Merton Court, 38 Knoll Road, Sidcup, Kent DA14 4QU Email: info@armclub.org.uk Tel: 07010 709849 (Flextel)