

NZ and  
Australia  
Best AMIGA  
Magazine

Issue 5 ■ November - December 1993 ■ NZ \$7.95 (incl. GST) ■ Aust. \$5.95

# AMIGA

## DOWN UNDER

### REVIEWED!

**Pages to Pixels:  
Five Hand Scanners  
Brilliance**

**Blitz BASIC 2**

**Retina**

**Humanoid**

**Caligari BC**

**PC-Task v2**

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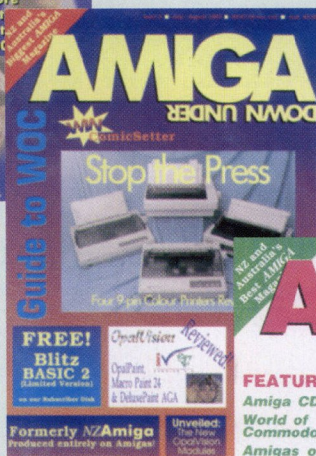
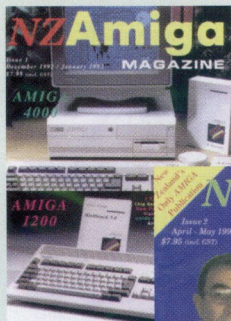
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**Woody's World**

**An Intro to the A1200  
Pyramid Hand Scanner**

**'Tis the season...**





# AMIGA DOWN UNDER

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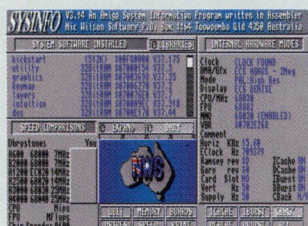
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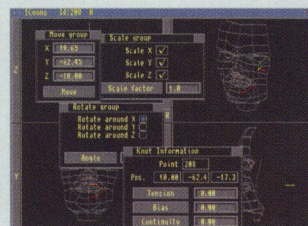
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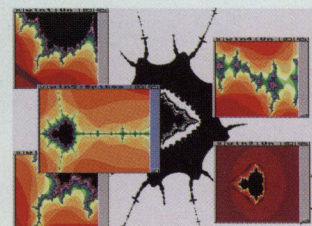
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Tool Manager 2, Snap!  
Plus, VirusChecker 6.2,  
Popup Menu



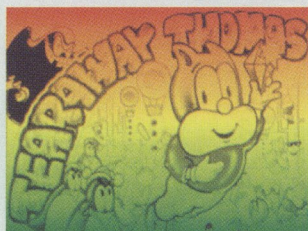
**Issue 3 PD**  
Blitz BASIC 2 Demo,  
ViewTek 1.04a



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Icons,  
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Outlaw 1.4,  
Dire 4.55, Orac Reset



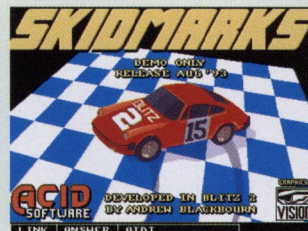
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Post 1.86enh,  
SnooDos 1.7



**Issue 2 Games**  
Tearaway Thomas



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Desert Strike



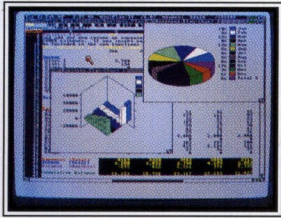
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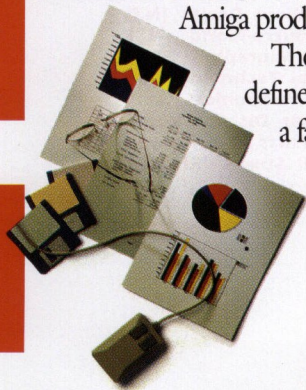
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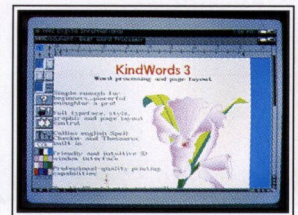


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# Win an A1200 video, Woody's World, Blitz BASIC 2 and a Pyramid Hand Scanner..

## Departments

- 18 Amos**  
Ray Abram's graphic equaliser.
- 42 Assembler**  
Handling interrupts.
- 50 Beginners**  
The intricacies of software installation.
- 34 Blitz BASIC**  
Do the BlitzMan!
- 28 Book Reviews**  
Mastering AmigaDOS Volumes 1 and 2.
- 12 Clipboard**  
Rumours from around the world.
- 38 DTP**  
An introduction to hardware and software requirements.
- 10 Editorial**  
The boss has his say.
- 70 Education**  
The latest news from NZ and Australia.



- 44 Imagine**  
Dudley Storey III does strange things to Cindy Crawford.
- 62 Letters**  
Answers to reader questions.
- 54 Public Domain**  
Reviews of PD software.
- 30 Programming**  
Clayton Hydes introduces an advanced column for, erm.. hackers.
- 58 Scripting**  
Decision-making in Shell scripts.
- 40 Silicon Canvas**  
Reader GFX from NZ and Australia.
- 78 Subscribers**  
What's on this issue's disk and how it works.
- 22 Video**  
Brian Pearse discusses genlocks and storyboards.
- 46 Workbench**  
Commodities: the inside story.



Denotes a product which we feel is worthy of a 90% rating or better...

## Games

- 72 Barty's Games**  
What's Hot and What's Not.
- 66 Games Mastery**  
Hints, tips and cheats for your favourite games.
- 74 The Game Grid**  
Woody's World  
Worlds of Legend  
Goal!

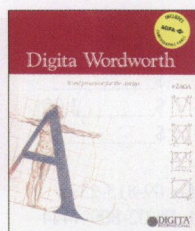


Woody's World ..page 74

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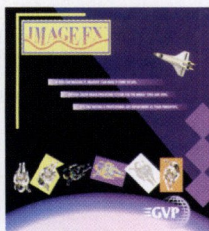


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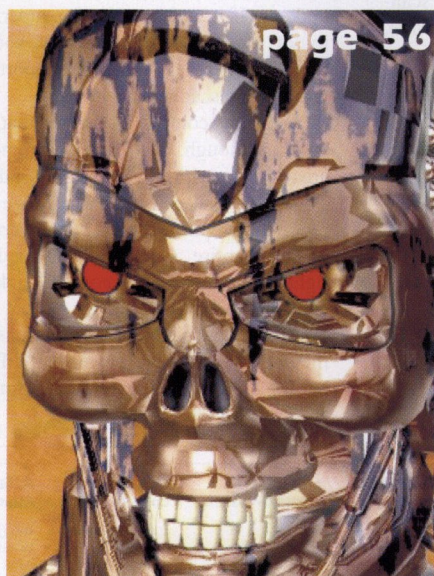
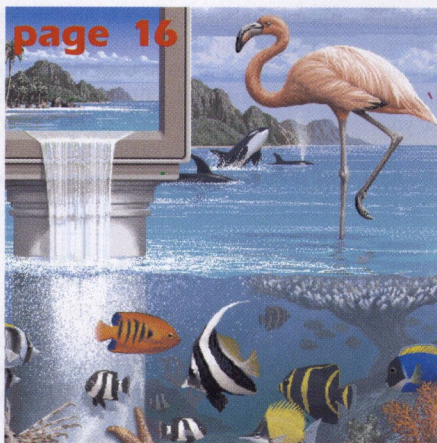
..see page 52!

# CONTENTS

## Features

- 6 Pages to Pixels**  
*The lowdown on Hand Scanners.*

- 26 Micro-World**  
*Inside one of Auckland's newest Amiga dealerships.*






**ADU is produced  
entirely on Amigas!**



**page 6**

## Reviews

- 16 Brilliance**   
*24-bit paint package.*
- 20 Humanoid**   
*Realistic human objects for Imagine.*
- 36 Retina**  
*Hi-res graphics enhancement.*
- 56 Caligari Broadcast**  
*Scanline rendering and animation.*
- 60 PC-Task 2**  
*Software-based PC emulation.*
- 68 Blitz BASIC 2**   
*Super-fast Amiga programming.*
- 24 Productivity**  
*Mini reviews of DeluxeMusic 2, CSA  
Twelve Gauge, DKB 1202, TapeWorm FS,  
An Introduction to the A1200 (Video).*

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**Competition winners .. page 75**



*We pried **Peter Morrison** away from the flatbed scanner just long enough to get his verdict on four slightly cheaper models.*

# Pages to Pixels Hand Scanners

HERE AT THE Amiga Down Under offices, I tirelessly pursue the attainment of ever-better graphics, and higher-quality images for each successive issue of our magazine. Day in and day out, I run our 800 dpi 24-bit colour flatbed Epson scanner over a wide variety of source materials, at times, filling the 700 Mb Graphics drive almost to overflowing with scans and images "we might need." It was only logical, I suppose, that I be given the task of reviewing the various hand scanners that arrived in our office recently.

Their basic concept is that the scanner head and interface module are contained within a small mobile unit, and the user is responsible for tracking this unit over any source material desired to be scanned. The width of the scan

is, naturally, restricted by the trade-off between having a scanner that looks sleek and beautiful, but can only scan ribbons, or having a scanner that can cover a whole page, but looks like a hammerhead shark. In general, you can achieve 105 mm (4 inch) wide scans on any model of hand scanner.

With this in mind, scanning consists of pressing the "start" button on the scanner, when the software tells you to, and moving the scanner steadily down the source image. How does the computer know how fast you are moving the scanner? Attached to the front roller is a set of gears, driving a wheel with

about 100 very fine spokes coming from it. This wheel passes between a photodiode-LED combination. Every time the light is interrupted, the computer knows that the roller has moved by 1/400 of an inch.

The hand scanners reviewed here share several common features. Most obviously their basic shape (since a large majority of the different brands are manufactured by a single company), and, to a lesser degree, the quality of the software. I will attempt to compare the features of each against the other, starting with the basic packaging and form, followed by documentation, software, and final results.

## AlfaData 256-Greyscale

This greyscale hand scanner from AlfaData comes in a similar package to the AlfaColor scanner, with the same cardboard encumbrance inside the box, holding everything together. However, the AlfaData greyscale scanner comes with software support by Migraph, which meant that the manuals provided were high in quality, and comprehensive.

Migraph Inc. have provided a program called Migraph-OCR-Jr, a cut-down version of the popular Optical Character Recognition software package, Migraph-OCR. The program is identical to its larger counterpart, with only the Load IFF option disabled. To import a file for text-recognition, you must use the scanner.

Also provided were the Touch-Up and Merge-It programs, with far inferior icons to the cartoonish OCR icon. To offset my disappointment, the manual cover features cartoons in a similar style for me to enjoy.

The interface unit for this scanner was a simple plastic box, without flashing lights, or screeching buzzers. In fact, the whole scanner set-up was devoid of buzzers of any form. The only indication that you are dragging the scanner too fast is a small LED on the scanner, right under where your hand would naturally go. Fortunately, the scanner is blazingly fast, and can keep up with any reasonable speed of scanning.

The tiny black plastic wheels are there, but these seem to be more useful than those in the

AlfaColor scanner. At least they didn't squeak.

To summarise, the AlfaColor scanner is poor, while the AlfaData greyscale scanner is great. It is hard to believe they are marketed by the same company. I'd rate the AlfaData scanner as second best monochrome scanner, just below the Migraph greyscale scanner, and just above the Pyramid black and white scanner. The only thing in the race is the software, since images produced by all these scanners are much the same.

**Supplied for Review by Micro Dealer**



## Touch-Up

Touch-Up from Migraph is the most powerful of all the scanner programs provided. It runs in a large window on the Workbench screen, (altering the palette to its own set of colours whenever the Touch-Up window is activated), with a full set of menus and hotkeys. If it were not for the superior quality of the Migraph ColorBurst software, I would rate this as the best supporting program of the scanners reviewed.

The only control lacking is that of scan width, although, with only 105mm of scan area to play with, this is not a disadvantage. Touch-Up also offers a large range of post-processing options. You can invert, rotate, or shear entire areas, make them darker or lighter (by adding or removing black pixels), and clear areas of the image.

A complete range of save options include the promised 256-greyscale, in TIFF format, or IFF24, as well as normal Amiga 16-colour IFF files.

	Pyramid Hand Scanner	AlfaData 256-Greyscale	Migraph 256-Greyscale	Migraph ColorBurst	AlfaData AlfaColor
Maximum dpi	400	400	400	400 (200 colour)	400 (200 colour)
Hardware Scan Depth	1-bit	1-bit	1-bit	18-bit	18-bit
Software Package	ScanKit	Touch-Up	Touch-Up	ColorKit	AlfaColor Turbo
Software Conversion Depth	6-bit	8-bit	8-bit	24-bit	18-bit
Output Formats	IFF6	IFF24, TIFF	IFF24, TIFF	IFF24, Ham8	IFF18
<b>Scores (out of 10)</b>					
Hardware	8.5	7.5	8	8.5	5
Software	6	7	7	8	2
Ease of use	9	7	8	9	7

### Controls

All scanners have brightness control (dark to light), resolution setting (400-100 dpi, 200-50 dpi for colour scanning), dot size setting (four presets) and a start button, which must be pressed before scanning begins. In the case of the Migraph 256-Greyscale, this button must be depressed while scanning. The colour scanners have four scanning modes - super-colour, colour, mono and dithering. As a warning, a full-colour 7cm scan will occupy 1.5 Mb of memory!



## Migraph ColorBurst

The ColorBurst was the only scanner packed in polystyrene. All other companies seem to have realised that polystyrene is not a good thing in which to pack static-sensitive components, or equipment whose optical purity would be compromised by having particles of foam stuck to it.

The interface box is identical in shape and size to those of the AlfaData interface, and the other Migraph interface. The power requirements for this scanner were the original US specifications, which meant that I had to connect a few power-conversion devices to the mains to get a correct supply. This should not be a problem as you only need to buy a 15V DC, 800mA power supply.

Installation of the ColorKit software is simple, and there is an update of the asl.library for Kickstart 2+ users. This library isn't necessary for 1.3 users, as the program runs without utilising any of the functions in it (mainly concerned with file requesters).

ColorKit is the best program I have seen for any of the scanners. A

control screen with recognisable gadgets can be turned on and off with the right mouse button to reveal the working screen, much like ImageFX. The program does not attempt to go outside the realm of a simple

scanner-control program and into the arena of image-processing, like Touch-Up. Instead, it simply allows you to control the scanner, get an image, view it, and save it.

In conjunction with the wonderful software is a sleek, black hand unit. Migraph themselves admit that the hardware is identical to the AlfaColor unit, but it seems like a whole new scanner, due to the quality of the software and interface.

The program and manual documentation are of the same high quality. The manual is understandably smaller than that of the Touch-Up program, since the software does not do as much. I also preferred the style of writing in this manual to that of the others. There was, however, one glaring flaw. The manual states that "the power to the computer does not have to be off when installing or removing the ColorBurst interface." This is not true. NEVER connect anything to the parallel port of the Amiga with the power on. This is the most important thing any user should know about peripherals. The CIA chip that controls all external devices is a fragile piece of circuitry, and will happily short itself out in all sorts of violent and messy ways if you follow the book's advice. Take it from one who knows...

Scanning is a relatively standard affair. The ColorKit program provides a timed requester to let you know when the lamp has warmed up (after 30 seconds, for normal use).

In summary to an astonishingly short review (when something works, there's not much in the way of amusing anecdotes you can write), the Migraph ColorBurst hand scanner rates first amongst all the models reviewed. The AlfaColor, although an identical unit, just does not measure up. In fact, I would rate the Migraph black and white scanner more highly than the AlfaColor, simply because the software provided with AlfaColor is so appalling. Strong statements, I know, but these things must be said. Though the hand unit is identical to the AlfaColor hand scanner, the software and interface make the crucial difference. ColorKit is the best of the software packages provided for any of the scanners, and combined with a scanner capable of producing 18-bit colour at 200 dpi, this makes an unbeatable team.

Supplied for Review by Migraph

## Migraph 256-Greyscale

This scanner arrived in a ready-to-go form. There was almost no packing, and nothing to fight with. This is not to say that the production model will not be free of a cardboard maze, merely that the model I was supplied had no such trickery.

As expected with a Migraph scanner, both software and manual were

of excellent quality. The Touch-Up program was identical to the one supplied with the AlfaData greyscale scanner, as was the OCR program. For a description of this software, refer to the AlfaData scanner review.

As a seasoned professional in the art of setting up hardware in minimal time, it was only seconds before I was ready to scan. Software installation took longer. In case you haven't already figured it out, all the software is hard drive installable, and non copy-protected. For such specialised software, it makes sense. If you own the scanner, you own the software, and if you don't own the scanner, what use have you for the software?

The Migraph greyscale scanner is second only to the twin-roller Pyramid scanner, when it comes to ease of use. It has a nice shape, and good quality switches and sliders.

Scanning is, as always, a fast and easy operation. Don't be fooled by the words "greyscale". At the lowest level, a pixel can only be black or white. Any greyscales claimed arise as the result of software post-processing. Thus the job of creating good-quality graphics is up to the software.

This said, I prefer the Migraph scanner over the equivalent AlfaData scanner. It has an identical interface unit, and software, but for some reason, the Migraph appealed to me more, despite the unusual arrangement of having to press the scan button continuously while scanning.

In my opinion, this was the best of the black and white scanners reviewed. The Migraph edged ahead of the AlfaData, due to the AlfaData's inferior hand unit. However, due to the poor quality of documentation and software, the Pyramid scanner takes second place behind the Migraph, despite its superior hand unit.

Supplied for Review by Micro-World

Continued on page 64



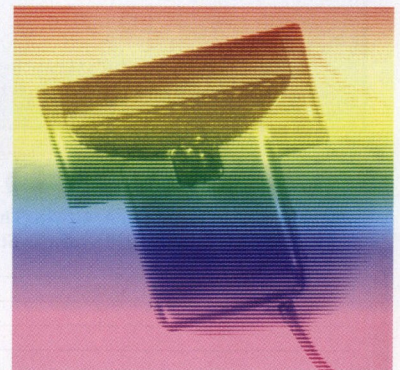
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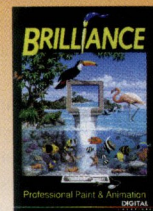
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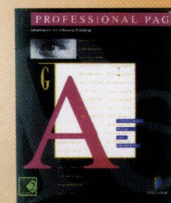
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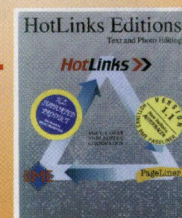
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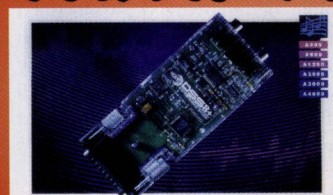
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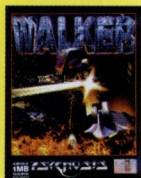
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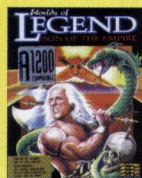
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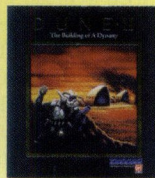
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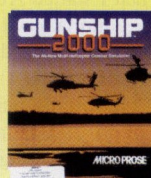
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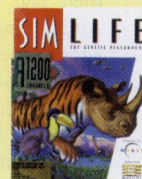
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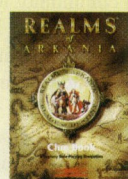
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# AMIGA DOWN UNDER

**ISSUE 5**

**NOVEMBER / DECEMBER 93**

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**ADVERTISERS INDEX .. page 71**

**ISSUE 4 ERRATA .. page 63**

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ADU HASN'T GONE unnoticed out there on the bookstand, especially by that *other* magazine, although I use the term loosely. Have you noticed the rapid facelift and copycat corner stripe? I hope none of you were too dazzled by the new-look cover, because nothing else has changed. It makes our job easier.

It's good to see that we're making waves and you, the readers, are the ones to benefit, of course. Both magazines are now trying harder to attract more readers, so we put more information, more colour and more value into our magazines. Well, at least one of us is trying.

When I started ADU, I used to dread writing the editorial each issue, because other editorials always looked as if they were an effort to fill half a page. I must admit that donning my Thunderbirds uniform and writing half a page of drivel each month would be difficult - I have found writing my editorial interesting and fun.

The biggest problem is finding sufficient space for it. There is enough going on in the Amiga community to write a book, but I guess some people are a bit nervous about putting their necks on the line. What's the use of having this wonderful medium to air one's views, if you don't use it? Just write me a letter, but don't get too personal about anyone - we don't want to get sued just yet. I can't believe that there are 400,000 happy and contented Amiga users down under!

Daylight saving has started and we have another Christmas of new Amiga models - this time the CD<sup>32</sup>, and some add-on CD<sup>32</sup>-ROMs for the A1200 and A4000, if we're lucky. Will this put Commodore on a stronger financial footing? If they don't make money out of the CD<sup>32</sup>, where does that leave the rest of the Amiga range? Alternatively, if the CD<sup>32</sup> does become a hot seller, will remaining Amiga models be neglected, in favour of faster-selling, more profitable games machines? After cutting all PC lines and the

# FROM WHERE I SIT

tried and true non-AGA models from the Amiga range, Commodore now have all their eggs in one basket.

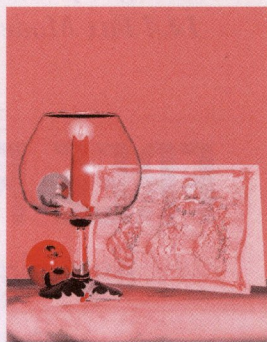
Commodore do themselves no favours by the fact that existing Amigas and monitors have been in short supply for so long. Dealers suffer when buyers opt for the PC alternative, where they can walk out of a shop with a computer. Existing users wonder what is really going on behind the scenes at the company in which they have invested so much time and money.

One of the things killing the Amiga - apart from poor marketing - is the proliferation of software piracy. The Amiga has the highest piracy rate of all available platforms, by a long shot. These statistics may not unduly upset many users (generally selfish enough to rip the system off at any opportunity). But haven't you noticed the lack of new Amiga titles, compared to what's available on IBM? Manufacturers have stopped producing Amiga versions, because they don't sell enough copies to cover costs. Why should they bother? They shouldn't. As a result, there will soon be no games to pirate - then where will the games junkies turn?

Maybe CD games will turn the tide. After all, who wants to copy a 500 Mb game from a BBS? The point is that if you don't support your computer, it won't support you. If you have copied software that you use often, go out and buy the genuine article! Can you imagine the time involved in writing a program like DeluxePaint or Lemmings? In case you hadn't realised, these guys don't do it for fun. They have to eat and pay the rent, too. So, if you find a shortage of software for the Amiga, or better versions for IBM or Mac, don't blame the manufacturers - blame Amiga users.

At last I have some letters to reply to. I hope we receive more. Thank you to those people who took the time to write. Via ADU, you have the ideal platform through which to make your opinions known - be bold and use it.

## COVERSHOT



This issue's cover was rendered by Auckland computer artist David Esther, of Digital Reality. David used Imagine 2.0 to render a 2000x2000 original (it took 23 hours on an A3000), which was subsequently touched up with OpalPaint, and cropped to the correct aspect.



I want to start with a letter from Ivan Millett, who wrote a sci-fi novel and decided on a unique approach to publishing by marketing it himself, and making it available on disk. (We looked at his book *Deus Ex Machina* in the PD column in ADU 3.) It is always a pleasure to promote people using their Amigas in new and unique ways. It works - try it.

Dear Sirs,

*Thanks very much indeed for publishing Thomas Scovell's highly favourable review of Deus Ex Machina in Amiga Down Under, Vol 3. It has already created some interest in my book.*

**Ivan Millett**

*Takapuna, Auckland, New Zealand*

Thanks, Ivan. Being a sci-fi fan, I'm also looking forward to reading it.

We have received many other compliments, a few of which are reprinted below, along with some less favourable comments. We are not afraid of criticism. We believe it's the only way we can continue to improve - so don't be backward in coming forward. We want to keep giving readers what they want. After all, we don't put this magazine together for us to read. A stack of survey cards were returned, which will be sorted, read and replied to next issue. In the meantime, I feel that the following comments need to be addressed.

To ADU,

*I am an Amiga user who does not just "mutter under my breath about my problems". Your magazine is really brilliant and getting better all the time. I would just like to put in my two cents worth. Your articles are well written. However, you cut [interrupt] too many of them and the references aren't always correct e.g. your continuation of the book review was referenced to p47. However, it commenced on p49. You cut the Amos article to put in the DSS8+ review. However, you could have put it at the end. And also the C and Assembler columns are missing!*

*You have put in a lot more colour. Good on you! However, you still go a little overboard on green, and even a little more colour would be good. You are a New Zealand-based company/magazine, as you are quick to point out. However, you have changed your name to Amiga Down Under, which is obviously an Australian name. I propose a compromise: Australasian Amiga.*

*Keep up the good work!*

**Max**

*Northland, New Zealand*

Thanks for the compliments. We did notice the wrong page number in the book review and have severely chastised our proofreader, who now cowers whenever she comes through the door.

However, Max, I think you need to study the printing industry a little more closely, to appreciate why our layout comes out the way it does. I appreciate your comment about Amos, but if you look in this issue, you will

notice that all the colour pages are in the same position each time. This is because the pages are laid up in groups of eight, which have to be in a certain order for the printer to collate with their expensive machines.

Each issue, we juggle articles and pages around to fit everything in, so that the contents flow as smoothly as possible. In this case, something had to suffer as we wanted the DSS8+ review on colour pages. We couldn't "have put it at the end" as you suggest, because DSS8+ would then have ended up in black and white and Amos in colour - not a desirable effect.

The reason C and Assembler were not included in ADU 4 is due to the fact that our C writer unexpectedly sold his Amiga and our Assembler writer moved overseas. Contrary to popular belief, there is not an over-abundance of writers knocking on our door. We would be more than happy to include C in ADU, if another contributor cared to write for us.

The excess of green is also attributable to printing processes. Eight pages of each issue are in two colours - black and another shade of our choice, known in the industry as a "spot colour". In ADU 4 it happened to be green; in

**"...If you find a shortage of software for the Amiga .. blame Amiga users."**

this issue, red. The position of these pages is also fixed - check for yourself. Don't expect more colour just yet. It is expensive and unnecessary to have programming articles in colour. Hence, we are not planning any more colour in the near future.

As for Australasian Amiga, you have to be joking! That sounds more Australian than anything. Down under is not a phrase referring solely to Australia, or indeed New Zealand, but is rather a colloquial term for both Antipodean countries - precisely the reason for the choice.

Dear Mr Cheesman,

*Let me first express my gratitude for producing a quality magazine dedicated to the Amiga. It's great to finally see an Australian magazine portraying the Amiga as a serious, professional computer, rather than a mere games machine. I have recently graduated from college and have had the opportunity of working on IBM machines. To be honest, I was very disappointed with the software and the lack of user-friendly applications on this machine. I am convinced that the Amiga is the best platform for the majority of home and*

*business activities.*

[We agree. It's a pity Commodore haven't informed more people of this fact. -Ed]

*I felt that issue four lacked the presentation of issue three. The front page, in particular, has not got the colour, gloss or impact of a lot of the major overseas magazines. The paper used in issue four is also of a lower standard than the previous issue.*

**Peter Spinaze**

*Buderim, Queensland, Australia*

For ADU 4, we used a web-press print method, which uses paper of lower quality, as you have rightly pointed out. We have returned to sheet-feed printing in this issue, for a variety of reasons, one of which is its superior quality. This explains both the lack of colour and gloss on ADU 4's cover, and hence the loss of impact. Unfortunately, the cost of producing a glossy cover for ADU is prohibitive at present - our colour content is expensive enough and not warranted for the entire magazine. Your constructive comments are appreciated.

Dear Sir,

*Having read copies of such magazines as Amiga Shopper, Amiga Format and Amiga World, I would much prefer to read your magazine, because the format is much less "busy" and so much easier to read. I think some of the overseas publications try to be too clever with their presentation, and the result is a confusing layout which is hard to follow and is distracting. Also, some overseas mags just have too much advertising!*

*I realise you need advertising to pay for the mag, but I hope you will not go the way of their magazines. Keep up the good work.*

**Paul Guile**

*Geraldine, New Zealand*

We put a great deal of thought into our layout which, as you may have noticed, has improved after some trial and error. We believe we have a user-friendly magazine and aim to keep it that way. I agree with your comments on magazines outsmarting themselves with too many overly-fancy layout techniques. As you point out, however, we do need advertising to stay viable. We also need ads to attract readers, who often buy magazines to see what is available. We nevertheless plan to keep the advertising to a respectable level and maintain a high ratio of articles.

Dear Sir,

*I picked up issue 4 of Amiga Down Under last week and I am in some ways impressed, and in others, disappointed.*

*I am impressed by the layout and standard of production. It has to be one of the most attractive and "readable" computer mags on the market and is a credit to the production team.*

[Aw shucks. -The Production Team]

*The ad content is good - I am somewhat unimpressed by the UK mags, that seem to be 50+ % ads and the balance devoted to games,*

*Continued on page 14*



# Clipboard

## LightRave

Debate is rife after an announcement from Warm and Fuzzy Logic that they have released a solution to the Toaster-only LightWave 3D problem.

Named LightRave, their release is a hardware device which mimics the Toaster functions required by the popular LightWave 3D rendering software, eliminating the need to own a Toaster. LightWave 3D has long had the unenviable reputation of requiring "the world's largest dongle" to run. This certainly looks set to change.

LightWave 3D upgrades are available for non-Toaster owners, but whether this hardware/software combination (already advertised in overseas magazines) is a good thing for Toaster manufacturers NewTek, let alone ethical, remains to be seen. Watch this space.



## TypeSmith 2.0

Soft-Logik have announced the release of TypeSmith 2.0, which can load, save, edit and generate bitmap screen fonts. Users can create bitmap fonts from scratch manually, or choose Generate Bitmap to automatically create a bitmap version of an existing outline font.

TypeSmith 2.0 also includes hinting. Hints improve the look of fonts at low resolution and in smaller sizes. TypeSmith 2.0 can load hints in fonts created by other programs, and will save them without changing them. It can also convert PostScript hints to Intellifont format.

TypeSmith 2.0 sells for US\$199.95 and users can upgrade for US\$50 plus shipping and handling. Look for a review in coming issues.

Press release from Soft-Logik, St. Louis, USA.

## Amiga Still Rules Multimedia

Following a win in the same event last year, Jim Merchant and "The Chargers" Total Quality team from Sydney Electricity have taken out this year's competition for the Total Quality team presentation. As Australian champions, they will represent Australia in the international competition later this year in Singapore.

Graphic and sound backing for the team's presentation was created on an A4000/040 with 10 Mb RAM and an OpalVision board. Programs used included Scala MM211, OpalPaint, DeluxePaint IV, ADPro and DSS8. Sound was provided by an internal CD-ROM drive and controlled by Scala.

Jim, who decided to upgrade to the A4000 in August, previously used an Amiga 3000 and CDTV. His one request for Commodore: "Please hurry with an Amiga laptop - my back is killing me!"

## PageStream 3.0

It's getting closer. Soft-Logik have told us that they expect it on sale at the beginning of November.

Some additions to our first Clipboard piece: PageStream 3 now supports the PANTONE® Color System, using this industry standard to provide printed colour accuracy with guaranteed results. In addition to PANTONE® support, it offers support for spot and process colour, and CMYK, HSV and RGB colour models.

Another new feature of PageStream 3 is the ability to translate files from Gold Disk's Professional Page.

Full ARExx support is now included. ARExx scripts can be written from scratch or recorded within the program. PageStream 3 features an extensive ARExx command set to satisfy any power user.

PageStream 3 will retail for US\$395. Upgrade paths are available for existing users for US\$125 if they own PageStream 2.0 or higher, and only US\$95 if they also own HotLinks. Purchasers of PageStream after 15 March 1993 get a free upgrade. Professional Page owners can upgrade for US\$175 (limited time offer). Add shipping and handling to all upgrade prices.

Press release from Soft-Logik, St. Louis, USA.

## Montage

Innovision Technology have released Montage 24, a character generation and graphics composition package claimed to be the first 24-bit titling and graphics application for Amiga AGA, OpalVision, and ImpactVision-24 platforms.

Montage features realtime "click and drag" font scaling, 24-bit graphic display in IFF or FrameStore formats, a range of image processing capabilities, and eye-catching AGA transition effects.



## Multiframe ADPro

A new package which provides a more intuitive front end to many ADPro functions, Multiframe ADPro gives the freedom to set start and end values, customise variables and have the program generate the data between. Features include: automatic frame generation, linear/non-linear motion using splines with adjustable knots for tension and continuity, splined controlled perspective, flat to sphere morphing, spline controlled acceleration/deceleration, rotoscope images using Alphachannels, modify contrast/brightness etc. over time, time lapse and blur motion, direct buffer output to Opal, Retina, DCTV etc. and more. Available now at A\$135.

Press release from GSoft, Australia.

## Warner Bros. at WOC

GVP and Warner Bros. have announced a world premiere for Animaniacs - Warner Bros.' new animated TV series at GVP's booth, during the Pasadena World of Commodore show. Rusty Mills, an animation director for Warner Bros., presented a clip of Animaniacs in a seminar to explain how Warner Bros. have used GVP's ImageFX image-processing software, to create portions of the exciting and technically-advanced animation program.

Press release from GVP, King of Prussia, USA.



## Electronic-Design at WOC World of Commodore, Cologne, Germany, 5-7 November 1993.

At the world's largest Amiga show, Electronic-Design tell us that they will release two new products. Following their slogan "Technology You Can See", Neptun-Genlock - by already using Alphachannel - will set new standards in DTV in a brand-new, attractive design. A high-quality Time Base Corrector will also be launched in an attractive new design.

FrameMachine will again attract enthusiasts, since it will be demonstrated with specially-adapted, 24-bit painting software. FrameMachine, working with the new AGA software will demonstrate the quality, diversity and unlimited possibilities of this multi-functional digitiser.

Press release from Electronic-Design, Munich, Germany.



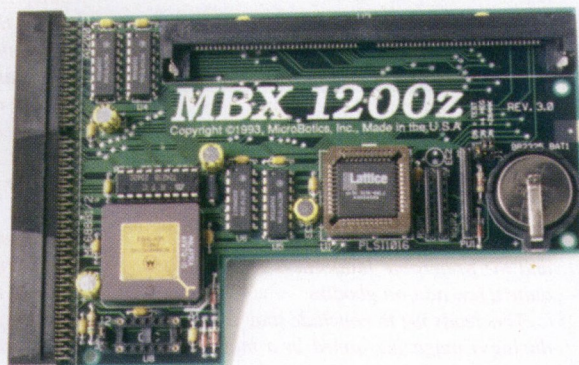


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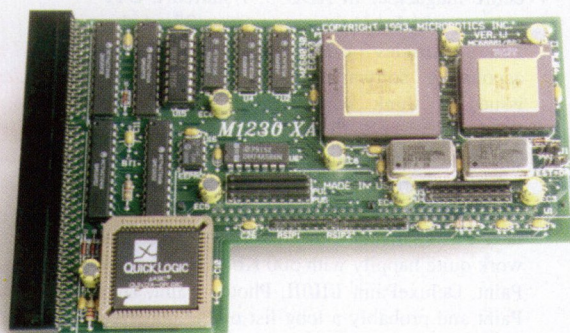
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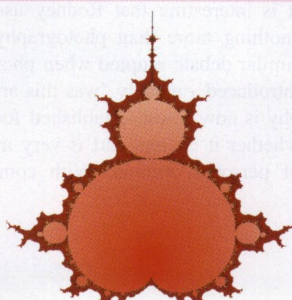


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Continued from page 11

but possibly that is a personal bias!

My disappointment is that your mag has a similar content to ACAR. I had hoped for something other than paint programs! ...they don't really interest me that much....there is more to Amigas than painting. If I understand the platform correctly, the basic A500 and A600 (no HD) will not run a paint program. The A1200 HD will, just, in its standard form and the preferable platform is an A4000 with quite a few add-on goodies.

This leads me to conclude that you are producing a magazine aimed at a minority market and ignoring the majority of users.

My suggestion is the occasional article on DTP, wordprocessing, bookkeeping, astrology, astronomy - anything - just for some variety.

**Dennis Hill**

Beechwood, NSW, Australia

I am somewhat bewildered by your comments about paint programs. The only paint program articles in ADU 4 were Virtual Art and View from the Mullock Heap. Other articles were graphics-related, but these catered to a different audience. Since the Amiga is heavily oriented towards graphics, the majority of new hardware and software products is aimed at that market. We featured three tutorials on programming, and eleven other articles on topics other than paint programs. Not to mention four features and one review, unrelated to graphics. My count is 15.5 pages related to graphics of any kind - less than 20% of the entire magazine. In ADU 3, I started a DTP column which continues on page 38 of this issue. Articles on wordprocessing and accounting software will appear in future issues. I think we'll leave astrology to Woman's Weekly, though.

I remember selling A500s with something called a Starter's Kit. If my memory serves me correctly, this came with DeluxePaint and later Fusion Paint. Other paint programs will work quite happily with 500 Kb of RAM - My Paint, DeluxePaint I/II/III, Photon Paint, Digi Paint and probably a long list of PD material. You could even use some of the early versions on raytracing programs on 1 Mb Amigas, like Imagine. As most of the Amigas sold have been A500s, I think paint-program owners are in the majority. I agree that many of these owners seldom use their paint programs - maybe because they don't know how. Hence a tutorial series.

For those who did not see Issue one, the following letters are in response to a comment made in our office when viewing a raytraced image on screen: "That's not real art!"

Dear Graeme,

I want to join your computer art debate. You say that images created or manipulated by a computer are not "real" art. I say, what a load of bollocks. What you're talking about is restrictive \*craft\* with some artistic input. When talking about art, we enter a limitless

realm in which humans aim to express their feelings or emotions in some way. Art is not just for those with a skilled hand; it is a feature of the mind. The computer is, in fact, a perfect artist's tool, because it makes the creation of art easier, placing it in the reach of those lacking in "artistic skill". That does not forfeit it as artwork, simply because it didn't require messy plaster, poisonous paint or brittle rock. You may argue that low-resolution, bitmapped computer graphics do not compare to conventional art works, but that is simply because the technology has not advanced far enough yet. 24-bit, high-resolution graphics are already here. In the future, virtual reality will create art galleries in a way not possible in real life, and we may see three-dimensional printer equivalents carving out computer-generated 3D objects with lasers maybe. I say computer art is the best art, surpassing even the current conventional methods by its limitless, unrestrained nature.

## "Is art in the inception or in the execution?"

(I'm off to draw some straight lines and circles in DeluxePaint II - now THAT is not art!)

**Benjamin Franzmayr**

Alexandra, New Zealand

Dear Graeme,

You asked for points of view on raytraced vs "painted" artwork in a previous magazine - so here's mine. I believe "painted" computer art can be seen as the digital equivalent to sketched and painted artwork. Raytraced work, I believe, can be most closely compared to sculpting and modelling. If moulded [pre-created] objects are used often, I would consider the pieces nothing more than photography. Lastly, there is also the technique of painting on paper etc., then digitising this. The original "paint and paper" work would have to be the "art" and the computer image would be a facsimile of that, unless significant alterations are made using the computer.

**Rodney Entwisle**

Whangarei, New Zealand

It is interesting that Rodney uses the phrase "nothing more than photography". In fact, a similar debate erupted when photography was introduced - namely "was this art?" Photography is now a well-established form of art, but whether it is "real" art is very much a matter of personal opinion. With computer-created

images and animations, the same is true. When I asked for a definition of "real" art, one of my staff defined it as "the manual re-creation of something seen, either through the eye, or with the mind". This would tend to deem forms of art such as photography not "real", because of the absence of actual manual creation. A drawing tablet attached to a computer thus sits in a rather grey area, but this theory definitely dismisses raytraced images as "real" art. On the other hand, Benjamin states that art is "a feature of the mind", so what better way to express one's thoughts than with the logical and creative power of a computer?

I'll leave you with the following thought, and look forward to further replies. Is art in the inception or in the execution?

Dear ADU,

I would like to make a few comments on the review of the 1942 monitor in the July-August issue. Your reviewer states... "the Amiga 1200 isn't shipped with a deinterlacer" and goes on to suggest that the scan doubling is performed solely by software, which is simply not true. Otherwise, surely, it would be possible to get flicker-free screens on an A600, simply by using the latest version of Kickstart, and WB3.0, which I can assure you will not work.

The scan doubling is performed by the new AGA chips, and thus the original interlaced 15KHz modes are still available for compatibility reasons.

Also, the reviewer states that on the 1942, "the DBLPAL display seemed to start about two inches to the right of where the monitor thought it should start." I, too, had this problem with my 1940, and, interestingly enough, so did my 1960-owning friend, despite what your reviewer says about the 1960 "centring the display perfectly". I found a simple solution - move the VGAOnly monitor into the DEVS/Monitors drawer.

**Matthew Sharpe**

Avondale, Auckland, New Zealand

Peter Morrison, author of the article in question, replies with the following:

Matthew, take a closer look at the article. The actual words were "...the AGA chipset provides for this with a new mode called DBLPAL..." I wrote this, fully intending to convey to readers the fact that it is the AGA hardware which does deinterlacing, and thus no separate deinterlacer circuitry is needed. Running the new version of Kickstart will certainly not be enough - you require the new hardware also. VGAOnly causes all modes displaying at greater than 15KHz to be forced into productivity mode, which the 1942 has no trouble displaying. This includes the otherwise-undisplayable Super72 mode. I still say: "Bring back the 1960!"

That's all folks - see you next time. Merry Christmas and Happy New Year from all the ADU Team!

*Graeme*

**Editor**



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- CalComp Graphics Tablet.
- G-Lock High Quality Genlock
- Brilliance
- Real 3D V2
- Scala MM211 AGA
- Art Dept. Professional
- ADP Tools Professional
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From the creators of DCTV comes a brand new paint and animation package. Will it dethrone DeluxePaint?

Undoubtedly, forecasts  
Matthew Buchanan...

**ADU**  
APPROVED

# Brilliance

AFTER USING BRILLIANCE for just a couple of days, I'm hooked. It is the only package to be released for the Amiga which can rival Electronic Arts' DeluxePaint for animation capabilities, and it is a class act.

Brilliance is actually two separate programs: a register-based version (Brilliance), which supports drawing modes from 2 to 256 colours (2 to 32 for owners of non-AGA Amigas) and Extra Halfbrite modes, and a true-colour version (TrueBrilliance), which supports Ham6 and Ham8 drawing modes and optional 15 or 24-bit internal data representation. Although images can be stored and saved in 24-bit, Brilliance does not directly support any 24-bit cards, limiting on-screen representation of these images to the Amiga's standard display modes.

## The Menu System

What Brilliance does offer is a superb user interface, and several paint and animation tools undeserved by mortal man.

Brilliance employs a system of stackable gadget banks - not a pull-down menu in sight - which can be called up with a right mouse click on the appropriate gadget in the Main menu. Using the numeric keypad, nine configurable combinations of Brilliance's nineteen submenus are only a keypress away. Where possible, Brilliance employs the DeluxePaint hotkey configuration, an added bonus for experienced DPaint users. F10 removes the Main menu completely, as in DPaint, and owners of three-button mice will find that this function can also be carried out using the middle mouse button.

Instead of the "double-sided" draw tool

gadgets found in DeluxePaint, which show both filled and unfilled modes separated with a diagonal line, draw gadgets in Brilliance can hold up to three functions, which are cycled through with successive mouse clicks. The Line tool, for instance, contains Line, Connected Lines and Filled Lines draw modes.

Like Opal Technology's OpalPaint, Brilliance displays the function of each and every gadget under the mouse pointer, not just in its Main menu, but in every submenu also. The current draw tool is also indicated while the mouse pointer is over the canvas. Unlike OpalPaint, a gadget's hotkey is not displayed, but this online help system nevertheless reduces the need for constant reference to the software's useful manual.

## Hardware Requirements

Brilliance requires Workbench 1.3 or higher, and at least 2 Mb of RAM in order to run. The manual's recommended minimum configuration is 4 Mb of RAM, a 68030 and a hard drive - Brilliance certainly runs sweetly with this setup! Full installation to either floppy

disk or hard drive is accomplished with Commodore's Installer utility.

Brilliance requires a software key to be placed in the joystick port in order to run. My only concern is that hardware copy protection of this type will kill one of the Amiga's major drawcards - its multitasking capability.

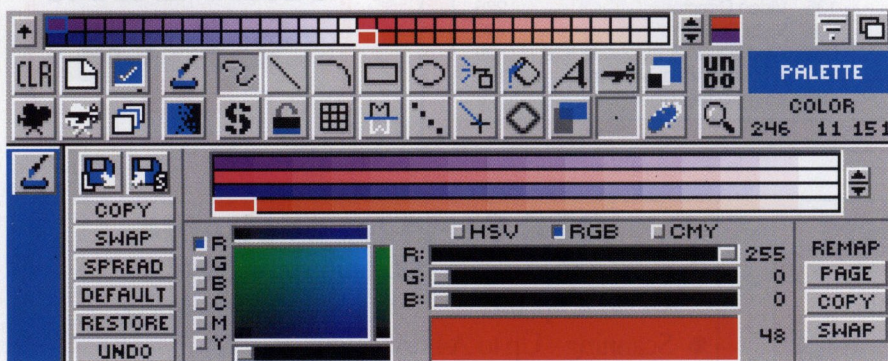
## File Formats

Brilliance has one or two extras in the file department. It will load and save all Amiga resolutions, as well as 15 and 24-bit ILBMs (TrueBrilliance only). Brilliance offers three animation formats, the standard Op-5, and two Op-8 formats, either word or longword encoded. Anim Op-8 saves larger anim files which decompress faster than Op-5 files. Animbrushes are stored in the usual format. Also supported is the Amiga's clipboard, allowing images, etc. to be cut and pasted between Brilliance and any other application supporting this feature.

## The Bezier Curve

Previously found only in structured-drawing programs such as Soft Logik's Art Expression (and in GVP's ImageFX), the Bezier curve tool in Brilliance is a welcome addition to the usual range. Five mouse clicks are required to create a Bezier curve: two set the start and end points of the curve, two set the control points of the curve, and a final, right click draws the curve. All points in the curve remain "alive" (re-positionable) until this final click is made.

For those not familiar with the Bezier curve - named after French mathematician Pierre Bezier - it is a smooth curve defined by two anchor points and two control points (which form tangents to the curve at their respective



Brilliance's Main menu and Palette submenu.





**The Magnify window is resizable - simply drag the central bar to reveal more or less of the magnified image.**

anchor points).

## Brushes and Morphing

Brilliance includes in its Brush menu eight storage wells, each of which can hold either a brush or animbrush. Limited only by available memory, this easy-to-use system removes the need for continual saving and reloading. Brushes are placed into one of these eight wells, which then display a scaled representation of the brush. If you click in a well, your current brush is swapped with the well's contents. With brushes being continually swapped to and fro, however, it is easy to inadvertently lose the odd brush - a configurable swap/replace option would have helped alleviate this problem.

Brush morphing, albeit slow, is another feature included to keep Brilliance on a par with DPaint IV. Any one of the eight brushes in storage (excluding animbrushes, of course) can be used as the source image, and can be morphed into the current brush, over a specified number of frames. The resultant animbrush then becomes the current brush.

## Animation by Tweening

The term tween refers to the interpolation

which allows manipulation of a brush's position and rotation (on all three axes) for start and end keyframes, and includes a host of interesting animation options. Manipulation can be performed either by entering values into appropriate string gadgets, or by on-screen adjustment of the brush's bounding box. Once these keyframes have been set up, variables such as opacity, ease in/out and draw count can be adjusted, and the animation can then be previewed or drawn.

In simple terms, Brilliance's Tweening menu contains everything missing from DPaint's Move requester, and then some.

## Additional Features

Of the endless list of features packed into Brilliance, a few deserve special mention.

Top of the list is a multiple undo buffer limited only by available memory. Every individual brush stroke made, including those made by the Tweening menu, can be undone, and the buffer can be cleared at any time.

Brilliance supports eight separate gradients, each capable of holding a massive 128 colours.

The magnify window is horizontally resizable and features 31 levels of magnification, from 2x to 32x.

Realtime preview is available for several painting modes (the chosen effect is reflected in the current brush) and brush manipulations, such as rotation and resizing, are performed in (almost) realtime as well.

Colour stencils include HSV variance settings, similar to OpalPaint's tolerance values, which allow a configurable degree of leeway between colours in the stencil and in the image. For images with large palettes, this feature is absolutely invaluable.

Brilliance features an interesting variation as part of its Airbrush tool - Shape Airbrush mode. In this mode, the current brush is used as a mask, through which paint is sprayed - thus the "shape" of the nozzle is completely configurable.

## Impressions

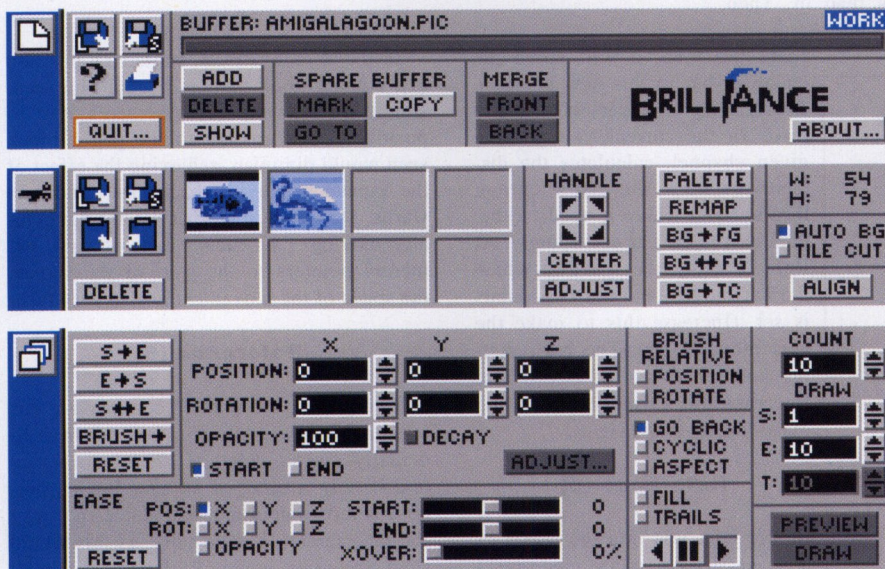
Brilliance is, above all, a usable package. By working through the tutorials in the front of the manual, even a novice user can become familiar with how the Brilliance menu system works, and catch a glimpse of the incredible inherent potential for creative mayhem. In particular, the "Creating Animations" tutorial, based on Jim Sachs' AmigaLagoon image, is an impressive indication of the ease of animating with Brilliance.

Brilliance is comparable in speed to other similar paint packages. Painting with a solid 60x60 pixel brush in Connected Draw mode is as laborious as it is in most other packages. However, some functions, such as scaling an oversized page to screen size, are blindingly fast.

The Brilliance manual is comprehensive, and handles the twin applications well, providing separate sections for Brilliance and TrueBrilliance when necessary, such as in the section on stencils.

One minor irritation concerns the naming of draw modes. To add colour to a greyscale image, you would expect to use Colorize mode, wouldn't you? Examination of the manual, however, reveals that Colorize mode "has no effect on black, greys, or whites", and that Tint mode is instead suitable for such an operation. Perhaps these two modes should have exchanged names.

DeluxePaint, unrivalled until now in the animation arena, finally has a competitor. Brilliance is, without a doubt, the superior package. With its impressive interface and exceptional capabilities, I for one will be making the change. Electronic Arts certainly have their work cut out, if they want to top this little beauty.



Brilliance submenus (from top): Buffer, Brush and Tweening.

## Manufacturer

Digital Creations (USA)

## Supplied for Review by

The Parts Warehouse

## Retail Price

\$NZ495



# AMAZING EFFECTS

# The Graphic Equaliser

by Ray Abram

IMAGINE THAT YOU'RE listening to your favourite piece of music, totally relaxed, with the stereo's graphic equaliser helping you to visualize the theme. Follow these instructions for writing a graphic equaliser program, and the music you play on the Amiga will have the same effect.

## Trade-Offs

The equaliser on a stereo indicates the sound volume in a given frequency range. As the Amiga is unable to do this, my equaliser will show the amount of volume on each of the Amiga's four sound channels, thereby achieving a similar effect.

## Program Description

First, you will need music, (preferably fast), which is loaded in at Program Reference (1). ADU subscribers will find ready-to-go music on the subscriber disk. Ensure that the mouse is turned off, as it is irrelevant here.

## Reference (2)

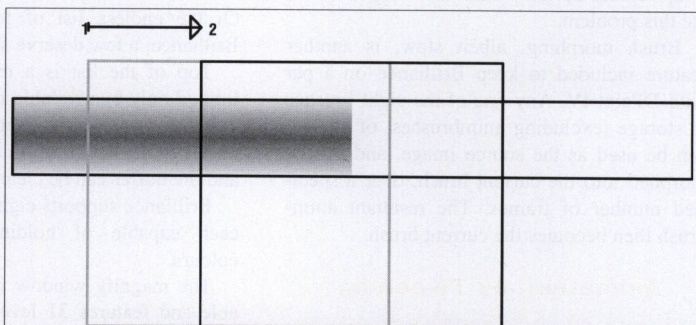
To make the graphic equaliser look more impressive, I added Copper bars over the top of colour 1. (Copper bars are used, as the Copper is capable of changing a pen's colour at every scan line, enhancing a bor-

ing two-colour screen with several colours on top of a pen.) I also chose to colour with the Copper rather than a multiple-pen method, to avoid slowing down Amos, as the amount of processing by the Copper List when drawing such an equaliser would have been tremendous. That way, the graphic equaliser would also have moved slowly.

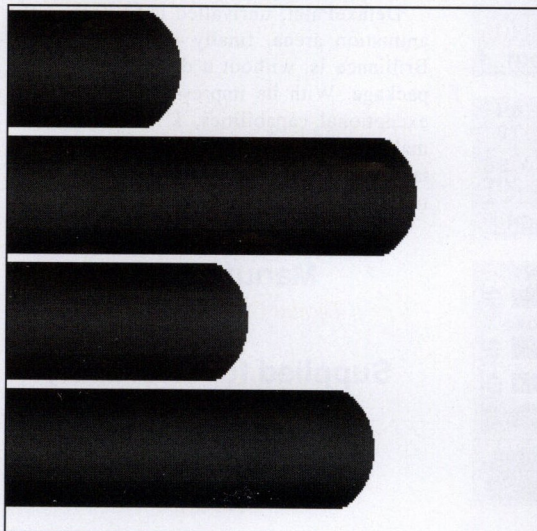
## Reference (3)

Since Amos is not fast enough to move the graphic equaliser bars backwards and forwards at any great speed, I have written a small routine in Amal (Amos's AniMation Language) to move them. Even Amal isn't quite fast enough to fully keep up with the rapid movements required of equaliser bars, so I have used the AUTOTEST function in Amal, which ensures that at EVERY 1/50th of a second, the current volume - read by the Vu(channel) function - at the Amiga's speaker is read in. Then, when Amal can

understand the makeup of a screen. A screen is essentially an area of memory (somewhere in Chip RAM) displayed on your monitor by the Amiga's hardware. Using this analogy, you can see that it is possible to change the position in memory that the screen resides at. The equaliser bar is essentially made up of a screen twice as wide as your monitor (= 740 pixels wide). Half the screen is coloured with pen 1 (the Copper changes this pen to many colours), and the other half is coloured with pen 0 (no Copper colour appears here). As explained above, the starting position of a screen can be varied through the Amal program. The result of moving the start position is to change the size of the pen 1 block seen by the user.



As the screen start position moves, the size of the visible block changes



spare the time, it will move the equaliser bar to this new position. The Amal program itself basically reads in the current voltage at a given channel, calculates the distance between the bar's current location and where it needs to be, then moves the bar accordingly. At Reference (4), the speed at which the bar moves between two points is set. (Increase this to make the bars move faster). The bar's resting position (Vu = 0) is also set. (Increase this to move the resting place further to the right).

## Reference (5)

Before I let you into the secret of how equaliser bars are made up, I must first make certain that you

If the screen's view started at position (1), a long block of pen 1 would be seen. But if we now move the screen's start to position 2, the amount of the pen 1 block seen would diminish, achieving the effect of the equaliser moving backwards and forwards. Due to the fact that we are not actually moving a physical block of data, but merely pointers to the start of the screen, the speed of the movement is also very fast.

## Reference (6)

At first glance, the Wait 10 command at this reference appears to have been put in accidentally, since a delay of 10/50ths of a second is only a blink of an eye. But its purpose is most important. Amos does not wait for each screen to open fully, as this would slow programs down. So before you start manipulating your screens, you need to



## Listing 1

```

Rem =====
Rem =
Rem =           Graphic Equaliser
Rem =           By Ray Abram (C) 1993
Rem =
Rem =====

Rem load and start music
Rem ** Reference (1)
Load "music1.abk"
Music 1
Led Off

Rem turn off the mouse
Hide

Rem make the rainbow effect on pen 1
Rem ** Reference (2)
Set Rainbow 0,1,60,"","", "(2,1,15) (2,-1,15)"
Rainbow 0,1,49,256

Rem AMAL program to animate bar using the Amal Vu function
Rem ** Reference (3)
AML$=AML$+" Autotest( "
AML$=AML$+"           Let R1=Vu(R0)*6; "
AML$=AML$+"           If R1=0 then eXit; "
AML$=AML$+"           Direct Start; "
AML$=AML$+"           )"
AML$=AML$+"Start: "
AML$=AML$+"Let R2=R1; " : Rem keep resetting 'X' to Vu value
AML$=AML$+"Let X=RA-R1; " : Rem find distance to new Vu value
AML$=AML$+"Pause; "
AML$=AML$+"Move R2,0,RB; " : Rem keep trying to move 'X' left
AML$=AML$+"Wait; "

Rem set RA to start of blank screen and RB to move speed
Rem ** Reference (4)
RA=0 : RB=1
Amreg(RA)=350 : Amreg(RB)=35

Rem Initialise 'equaliser' bars
G_HEIGHT=60 : Rem height of an equaliser
Rem Make the Bars and assign an Amal program to them
For SC=0 To 3
  Rem *** Reference (5)
  Rem set up a screen for equaliser bar
  Screen Open SC,740,G_HEIGHT,2,Lowres
  Curs Off
  Flash Off
  Ink 1
  Paper 0
  Pen 1
  Cls

  Rem Position the screen
  Screen Display SC,100,(SC*G_HEIGHT)+50,400,G_HEIGHT
  Screen Offset SC,350,

  Rem put a circle at end of equaliser bar
  Circle 350,G_HEIGHT/2,G_HEIGHT/2
  Paint 352,10

  Rem draw pen 1 body of equaliser bar
  Bar 0,0 To 350,G_HEIGHT

  Rem Assign an Amal channel to an equaliser screen offset
  Channel SC To Screen Offset SC

  Rem Assign Amal string to an audio channel
  Amal SC,"Let R0="+Str$(SC)+" ; "+AML$
Next

Rem give some time for everything to catch up
Rem *** Reference (6)
Wait 10

Rem start up equaliser
Rem *** Reference (7)
Amal On

Rem give Amos something to do
Rem *** Reference (8)
Repeat
  Wait Vbl
Until Mouse Key<>0 or(Inkey$<>"")

```

allow time for Amos to finish setting them up.

## Reference (7)

Now that everything is set up, a call to Amal On will put the graphic equaliser bars into action.

## Reference (8)

At this point Amal is going at top speed - assuming that you typed the program correctly - moving the equaliser bars backwards and forwards in time to the music. Amos is now free to do something else, simply waiting for a key or mouse button to be pressed. To show that Amos is free and Amal is hard at work, place the Direct command on the next line after Reference (8). Now when you run the program, Amos goes into direct mode - commands in direct mode can be executed as normal, and the graphic equaliser bars are racing in the background - proving that Amos is FREE.

## Possible Modifications

- ◆ The Copper bars (made by the Rainbow command) and plain graphics on the equaliser bar screens could be replaced by a vertical stripe, to mimic more closely a stereo equaliser.
- ◆ Blue Copper bars could fade into another colour.
- ◆ Remember: If you would like a working listing and music ready for the equaliser to play, consider subscribing to Amiga Down Under.

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investigates the latest  
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# Humanoid

TIM WILSON BUILT the earliest commercial human figures for Imagine with CycleMan. Since then, many other third-party designers have followed suit - most notably CycleMuscles, reviewed in ADU 4. Tim's reply is the simply incredible Humanoid.

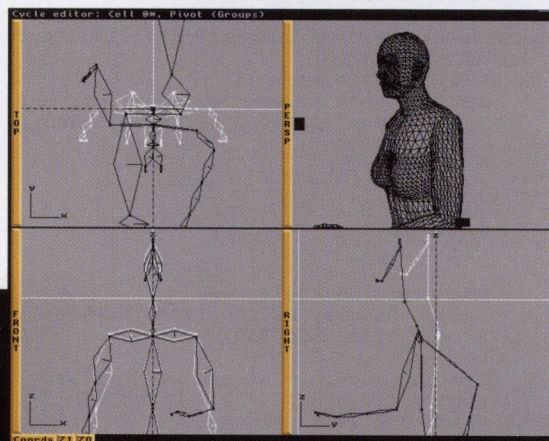
Everything that CycleMan users could wish for has been brought together in this package. The realism of objects has been markedly increased (incredibly, each and every point was plotted by hand - not scanned by a 3D digitiser), to a resolution of one to two triangular polygons per square inch. Three models are available - a male and a female figure, and a more muscular male (although not to the comic hypertrophy of CycleMuscles, as you can see). Each comes in two configurations - a high and low density model. A child model, missing from the original package, will be sent to users when they register.

Not only are the figures prepared for animation in the Cycle editor of Imagine with walk and run poses, but Tim has made morphable poses of the figures for use in animations. Each model has multiple head, hand and body forms which model expressions, ges-

tures and broad movements, so that, by using the morphing capability of Imagine, you can make Humanoid show emotion - smile, cry, show fear and anger, or even speak. Morphing also allows Imagine to simulate the stretch of muscle and skin with arm and hand movements.

Want more? Gold, silver and marble attributes enable you to turn Humanoid into a gleaming robot or statue. An environment map allows you to produce some of the pictures that the Anti Gravity Workshop has made famous. And the package comes with an excellent, 60-page, ring-bound manual which covers all the bases.

The last barrier to creating photo-realistic, human simulations on the Amiga has been removed. I can hardly wait for the spectacular animations which will be produced using this package. Make your own morphing Terminator! It's expensive, but imagine the sheer work that went into this production - far



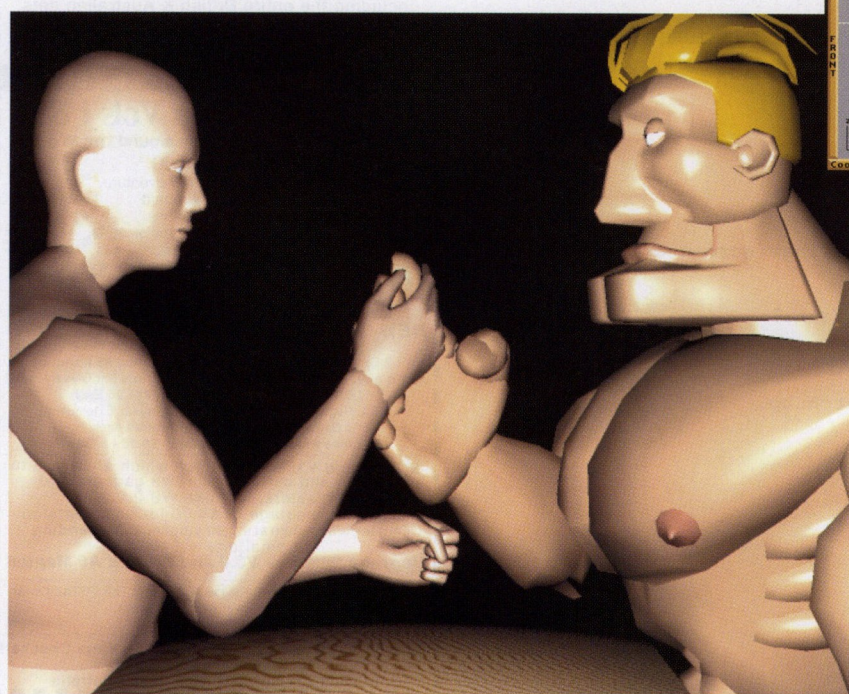
Humanoid as "The Thinker" (top) and as Sylvester Stallone (left, pitted against CycleMuscle Spike). The female model is shown above, in Imagine's Detail editor.

outside the abilities of ordinary mortals. Buy Humanoid, and be prepared to be blown away.

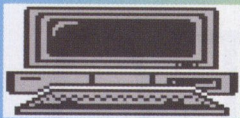
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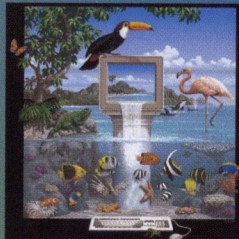




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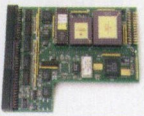
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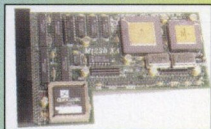
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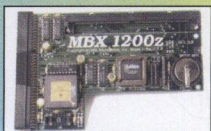


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# storyboarding

by Brian Pearse

# THE VIDEO arcade

DURING THE PAST year, the commercial market has realised the potential of video production by a personal computer, and in ADU 1, I outlined the reasons why the Amiga has a long-term future in desktop video (DTV).

During the last twelve months, we have witnessed the arrival of more new and exciting programs and hardware. The breakthroughs achieved by software programmers today astonish many professionals outside the Amiga domain.

The DTV revolution has escalated on the Amiga to a point where no less than ten graphics cards are now capable of displaying up to 16.8 million colours simultaneously, given a monitor big enough to handle that many pixels on-screen (your standard 1084 in PAL Super Hi-Res Interlaced overscan mode will display a maximum of 872,500 dots). At least two of these boards can, according to their manufacturers, play back full-colour video at up to an astonishing 100 frames per second, and beyond. Several boards also ship with their own versions of specialised paint software, but, in all cases, such programs are only as good as the board on which they are used, an important point to remember. As you come to grips with DTV, you will quickly find that to progress onward, you must also move upward in terms of equipment. The beauty of modern technology though, is that better hardware is continually becoming more affordable.

## Gadzuku Man .. are you sure?

Those of you lucky enough to be in Sydney in July for World of Commodore will have witnessed the world premiere of OpalVision's new modules, including the Video Processor, Roaster Chip and Video Suite (previewed in ADU 3). These modules have been advertised worldwide, and the latest word from Opal Tech is a release date in late November or December.

For those who have not seen OpalVision, it is a plug-in card for the Amiga's internal video slot, so you need a big-box Amiga to use it. An A1200 OpalVision is also on its way. In my opinion, the supplied paint software, OpalPaint (reviewed in ADU 3), is alone worth the cost of the card. For price performance, OpalVision is the best 24-bit release to date, and you won't buy it cheaper

than in Australia or New Zealand. If you own OpalVision and wish to use a third-party genlock with it, be aware that it will have to be a genlock which plugs into the RGB port, and may require an in-line attenuator to prevent colour distortion.

One buzzword currently in the video market is "morphing", and already four Amiga programs can produce such effects - Black Belt Systems' ImageMaster, ASDG's ADPro/MorphPlus, GVP's ImageFX/CineMorph and

**"...no less than ten graphics cards are now capable of displaying up to 16.8 million colours..."**

DevWare's Cocoon. An important point to realise is that these programs perform two-dimensional or image morphing, an effect very different from morphing of three-dimensional objects. The results, however, can be equally spectacular. (Electronic Arts' DeluxePaint IV and Digital Creations' Brilliance also perform morphing, but with very limited user control.) If you have the inclination to morph a family member into the family dog, check out any of these. A word of warning, though. As professional software, such packages usually require large amounts of RAM - make sure you have an adequate system before making your purchase.

If you are looking for some slightly cheaper software, a useful PD program comes to mind. ViewTek, from the writer of ImageFX, is a very handy ILM/GIF/JPEG and ANIM viewer, for all your favourite pictures and animations.

## An Introduction to Genlocks

I am often asked by new users what a genlock is and what can be done with one. Without getting too technical, a genlock is a device used quite often in modern video equipment for the synchronisation of video signals. If a genlock is connected to your Amiga, it will synchronise the Amiga's graphics output with that of either an external video input signal (which you connect to the genlock), or to its own internally-generated signal.

The beauty of owning an Amiga is that you do not require an expensive device to freely mix Amiga graphics with that of the incoming video. Genlock prices range from hundreds of dollars to thousands of dollars, but generally, acceptable quality can be found in genlocks retailing for well under \$1000.

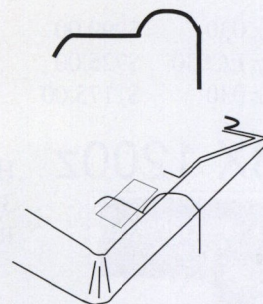
To keep the signal coming out of your genlock clean (i.e., stable, with no colour artifacting), it is imperative that you provide the genlock with a clean input signal. Although a genlock's own internal signal is clean, it is not always exact. By feeding the output of your video camera or VCR into the genlock, you not only provide a clean signal, but also a background image. Through use of a video camera, creative backdrops can be easily produced. For example, crumpled metallic card or corrugated iron, slightly out of focus, provide interesting backgrounds for text overlay.

Another common problem is the occurrence of timing problems when recording from one VCR to another, through a genlock. You may be lucky enough to get away with this, but generally, the recorded signal will be

## Tracing .. the Easy Way

LOOKING FOR AN easy way to trace pictures into your favourite paint package? If so, try this simple trick. Take a paper clip, unfold it and shape it as shown on the right.

Tape this "pointer" to either side of your mouse, as shown, and use it to trace the outline of printed material. It may sound simple, but the best ideas usually are!





a mess. The reason for this is that the stability of the VCR's output signal is reliant on the speed and sophistication of the player mechanism, and unfortunately, no player will provide a steady signal without the use of a stabilising device. This device is called a Time Base Corrector (TBC), and if you intend making any type of commercial video, it's a must. If your videos look as if the operator was under the influence, either avoid recording on a pre-recorded tape, or use a TBC.

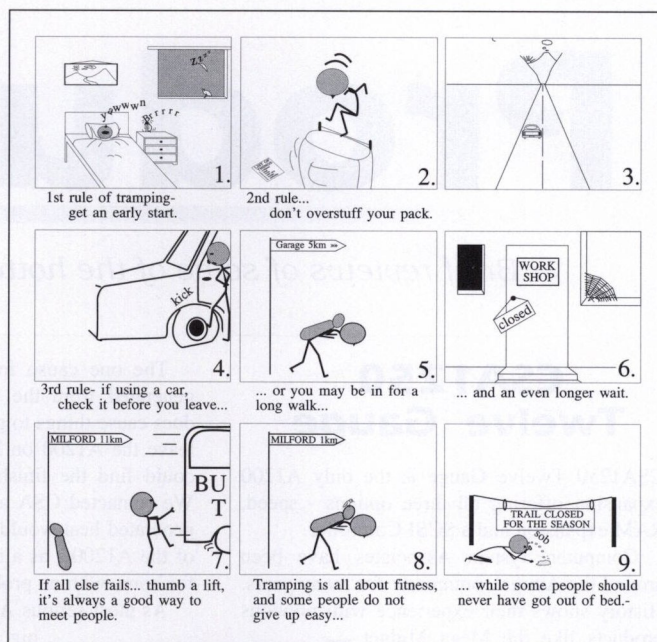
I will be returning to the subject of genlocks in future issues.

## Tutorial Time

This issue, we begin a series of practical lessons on creating static and moving titles and graphics for use in your video creations. Since other departments are dedicated to producing still images and animations, I will concentrate on topics more relevant to DTV, and also show you how such animations can make your home videos sparkle. The tools you require for the following tutorial are paper, a pencil, a ruler and an eraser, your Amiga, and some sort of paint/animation software. By far the most popular is DeluxePaint, and I will often refer to this program during my tutorials.

This short tutorial covers one of the most fundamental aspects of putting together any video you will produce, whether it includes work done on the computer or not. A walk through any movie or animation production house will convince you of the importance of learning the basics, none more so than the art of storyboarding. A storyboard is basically a graphical plan of attack. While taking that walk through Disney Production Studios or Industrial Light and Magic, ask one of the professionals what your plan of attack might be in your next multi-million dollar blockbuster. In reply, they'll ask to look at your script, or better still, at your storyboard! Every production should start out in this way.

To begin your storyboard, draw a number of boxes, or cells, on your page to represent pivotal scenes in your video. In each cell, draw a simple sketch of each event - these can be built upon later, but should give the initial makings of an entertaining story. My storyboard concerns the joys of tramping - you might like to choose a slightly easier subject. If



your artistic talents do not extend beyond stick figures, don't worry. The important thing to remember is that a storyboard is simply a representation of a storyline, to help gather thoughts and ideas for production. In a cartoon studio, your storyboard might then be passed on to the artistic talents of the 'tooners, who will transform your stick figures into an animated adventure.

Before the next tutorial, practise doing the above with other storylines, perhaps from real-life events. Some storylines are easy to predict, e.g., a family wedding, but in an original film, you, the producer, are in control of each event as it happens. ■

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# Productivity

*Brief reviews of some of the hottest new products for the Amiga.*

## CSA1250 Twelve Gauge

CSA1250 Twelve Gauge is the only A1200 expansion offering all three options - speed, RAM expansion and a SCSI Controller.

Computer System Associates have been around the Amiga community for many years. History shows their experience with previous products like the Mega Midget Racer, a 68030 accelerator for the A500/A2000, followed by the Derringer - a revised 68030 model for the A5800/A2000. Next came the 40/4 Magnum, a 28/33MHz accelerator for the A2000, and now we have the Twelve Gauge - it all sounds like the arsenal for Dirty Harry's wardrobe.

If the name Twelve Gauge is supposed to incite thoughts of power, the name fits, for the CSA1250 turns the A1200 into an awesome workstation. The unit we had to review was a full 50MHz version, fitted with an equivalent 50MHz FPU. To support the 1250, we added an 8 Mb SIMM, to turn our stock A1200 into a blazing 10 Mb workstation. The difference was incredible.

To compare the processing speed, we measured it up with the AIBB Version 6.1, to find that in seven of the 20 tests, it ran faster than the A4000 040. The balance of the tests showed it racing past the A3000, to chase the heels of the A4000 - quite staggering for the compact A1200.

The one cause for concern was the heat generated from the trapdoor. The CSA1250 does cause things to get a little warm, so don't leave the A1200 on Mum's best table or you could find the finish marked from the heat. We contacted CSA and were assured that the generated heat would not affect the reliability of the A1200 - as a test, we left ours running for hours with no problems.

As most serious A1200 owners get into the big time, the next cause of frustration lies in use of mass storage peripherals, such as Floptical Drives, removables like SyQuests, additional hard drives, tape back-ups and CD-ROMs, which all require a SCSI interface. Here CSA have again passed the opposition by providing a unique SCSI device - a 25-pin, male SCSI connector has been mounted at the edge of the board, allowing the 1250's cable to be added to give SCSI capability.

Simply remove the plastic fitting next to the mouse ports, feed the cable and connector through and join them to the CSA1250 plug. You will find that the 25-pin fits in very much like a factory fitting on the back of the A1200. We tested the SCSI device with all kinds of systems from hard drives, SyQuests, tape drives and CD-ROMs. We even had a daisy chain of a tape drive piggy-backed to a CD-ROM drive - both worked with ease.

CSA provides an install disk with their

own SCSI tools utility, which operates in a similar way to HDToolbox, allowing the A1200 to recognise and mount any units attached to the external SCSI port. The disk provided also offers the utility DROM, which enables the user to copy the boot ROM into the Fast RAM, noticeably increasing the pace of the already-speedy accelerator.

The Amiga 1200 is becoming a regular feature for a number of multimedia systems, where speed and versatility are required. With the CSA1250 installed, there really is no limit to what you can expect from such a powerful small computer.

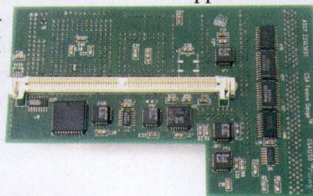
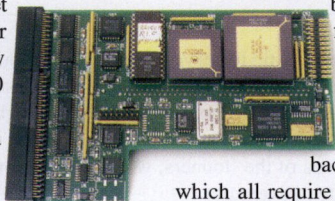
Specifications for the Twelve Gauge are 50MHz 68030 or 40MHz 68EC030, socketed for an optional Floating Point Unit (FPU); supports RAM expansion up to 32 Mb using 72-pin SIMMs operating in Burst mode; optional SCSI controller.

In conclusion, we can truly recommend the CSA1250 for any serious user or multimedia system.

To date, it is the fastest and most flexible A1200 expansion you can buy. The 1200's compact size and 32-bit expansion slot allow users to compete with many serious and costly workstations, for a fraction of the cost.

If CSA accelerator naming is a follow-up from Dirty Harry, go ahead and make my day - give me a CSA1250 Twelve Gauge! **BMF**

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## DeluxeMusic 2.0

Originally written for Workbench 1.3 in 1986, Deluxe Music Construction Set (DMCS) was everything an amateur musician could have asked for at that time. Version 2, renamed DeluxeMusic, includes all those features, and many more. It now sports a much-improved WB 2.x-style interface, its MIDI support has been improved, multiple documents can be stored in memory and edited, and, most importantly, the new release now includes both ARExx support and Macro recording.

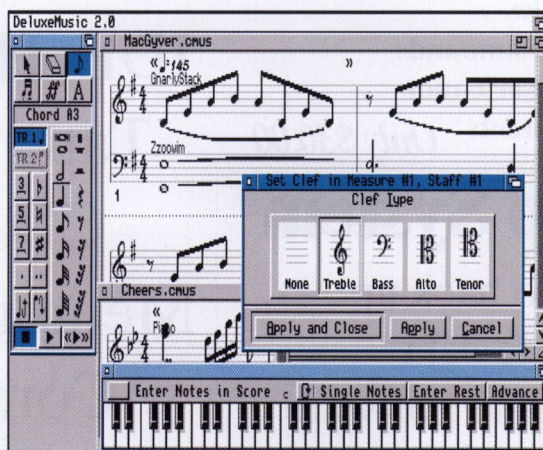
DeluxeMusic, despite its dramatic facelift, still remains faithful to the old DMCS music format (I even managed to dig up a few TV themes, as you can see), and will also load and save SMUS, Music X and MIDI files, along with its own new CMUS format. As

Electronic Arts have done with their popular DeluxePaint, DeluxeMusic also comes with a stand-alone player utility, allowing CMUS files to be played from either the Workbench or the CLI. Unfortunately, documentation concerning any command line arguments (such as a repeat function) was missing.

DeluxeMusic's improved interface facilitates much of what was originally painstaking in DMCS. Clefs, time signatures and key signatures can all be selected and changed graphically - even playing your current score is easier with the new VCR-style controls in DeluxeMusic's toolbox.

In ADU 6, Matthew Grove will hook DeluxeMusic up to his MIDI gear, and give it a thorough hiding. Stay tuned. **MB**

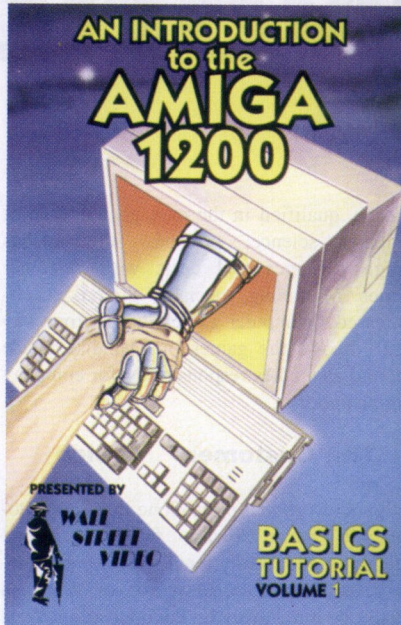
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## An Introduction to the Amiga 1200

Sydney computer training company, Wall Street Video, has supported new buyers of A1200s with a 60-minute beginners' video tutorial - the first of a series in development. Launched at World of Commodore, "An Introduction to the Amiga 1200" is now available through retail outlets.



Presenter Peter McEwen introduces the A1200 system at the most basic level, explaining the keyboard and mouse buttons, and use of the expansion ports, with floppy, PCMCIA and hard disk alternatives. The video also introduces the Workbench, including installation of programs, formatting, moving, renaming and copying disks and files. Care and maintenance of the A1200 is also covered. Cutting between views of the monitor screen and the studio, with useful picture-in-picture shots, the Australian tutor keeps everything at a slow, even

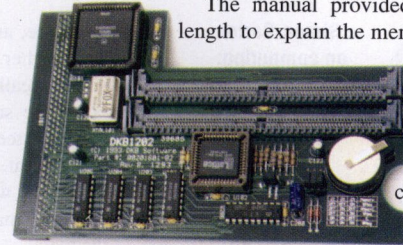
pace - perfect for absolute beginners. While everything in the video is covered by the A1200 manual, the visual version is a bonus for those more graphically-oriented or completely computer-phobic. At A\$65, the perfect gift for new owners of any Amiga model. The Wall Street video - for people who can't set the timer on their VCRs. Now available in NZ from Micro-World. **DS■**

Supplied for review by Wall Street Video

## DKB1202

The DKB1202 is a Ram Expansion FPU and Real Time Clock for the Amiga 1200, manufactured by DKB Software (USA). DKB are known for their A1000 expansions and the popular MegAchip 2000/500. This unit is similar to other A1200 expansion boards, offering a Real Time clock and optional maths co-processor - running up to 40MHz, up to 8 Mb of 32-bit wide memory expansion, using the same SIMM found on the Amiga 4000.

The big difference with the DKB1202 is the memory - DKB have managed to fit two SIMM slots on to the board. Giving the purchaser a wide choice of memory expansion, the board has been designed to allow the user to configure up to 5.5 Mb of 32-bit Fast Ram, when using a PCMCIA card - the maximum possible. The limit of most other cards is 4 Mb.



The manual provided by DKB goes to great length to explain the memory options, outlining the benefits of certain configurations. The biggest advantage of this board lies in the two SIMM slots. If, initially, you can only afford to populate the board with 1 Mb, add another later, or choose a

4 Mb SIMM and keep both, to give a 5 Mb expansion.

Whatever your memory configuration, it is likely you will need to use MagicMem, the software program provided with the DKB1202. MagicMem is set up by dragging the Icon into the WBStartup drawer, so that the program operates automatically, requiring no input from the user. This clever little program checks for the existence of a PCMCIA card, so when more than 4 Mb is installed, it will auto configure the maximum of 5.5 Mb and the balance will be added at a different address space.

The DKB1202 is supplied with a 68881 at 16MHz, which can be upgraded to a faster 40MHz 68882, at the special-offer price of \$125.00(US). The kit includes the FPU and crystal oscillator, with a PLCC chip puller. We tried and tested the DKB1202 and found it compared well with other expansions for the A1200. **BMF■**

Supplied for review by The Parts Warehouse

## TapeWorm FS

Moonlighter Software, manufacturers of Ami-Back and Ami-Back Tools, have just released TapeWorm FS - a program which turns your tape drive into an AmigaDOS Filesystem. A hard drive is now very common for most Amiga owners, and for those tired of backing up on to endless floppies, (who can afford a tape back-up drive), here is a very handy piece of software.

TapeWorm FS allows your tape drive to act like a removable hard disk - for the video professionals, a very economical way of storing animations. The software provides support for SCSI DAT, 8MM and QIC drives, and the list of compatible drives is constantly growing as users experiment with many of the SCSI tape options available.

The principle of the drive is based upon a WORM (Write Once Read Many) system, which means you can access directories, add

and delete files, and copy files as if you were using a floppy or hard drive. However, being a WORM drive system, all data copied to the drive remains on the tape, even if you delete the files. When related to the cost of most tapes, this becomes an option worth serious consideration.

We tried it with our trusty old Viper 150MB tape drive. The software is installed using the usual Install program. Once that is loaded into the drawer of your choice, simply start the program using the TW Config, which will select the device under its SCSI ID, and enter the size of the tape in use. You then have a number of options to choose

from, such as keeping directory on tape, existing files are read only, keep "info" files with the directory, and directory path.

Once the options have been set, click on format, which will request a volume name - ours was "viper". After formatting, we rebooted to allow the system to read all the program settings and there on the workbench

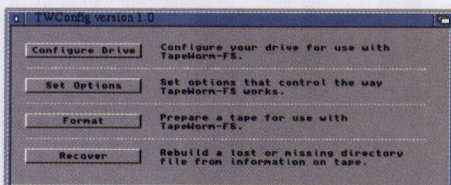
screen appeared "viper". Other units formatted were recognised as normal floppies, upon insertion into the tape drive.

We set about using the system and found it very efficient and an asset for those large animation files. The speed of the program will be reflected in the operation of your tape drive - our Viper150 is not the fastest, but even that was as good as a floppy. If you have one of the new, fast DAT systems, I am sure the speed would be quite acceptable.

Another part of the program is TWCtrl, which allows you to set features like Inhibit - by preventing the filesystem from accessing the tape drive, this allows you to use other programs to access the tape drive, such as Ami-Back and Eject (for drives which support eject).

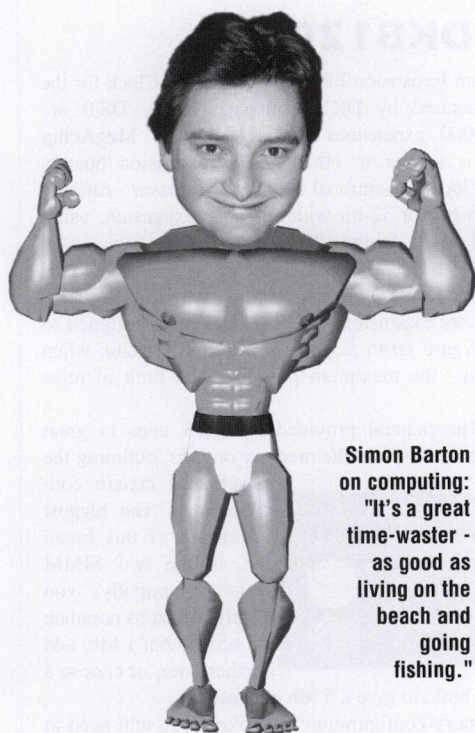
TapeWorm FS is a must for those with a tape drive. The program provides a valuable option at very little cost - an option which could well solve the storage problems facing many of us as we get more serious with our Amigas. **BMF■**

Supplied for review by  
The Parts Warehouse





In the second of our dealership profiles, **Susan Buchanan** backgrounds one of Auckland's newest Amiga retailers.



**Simon Barton on computing:** "It's a great time-waster - as good as living on the beach and going fishing."

IT'S ONE THING to open a retail shop at the drop of a hat - quite another to draw in and sustain purchasing customers. But owners of the Amiga-only dealership, Micro-World, have quickly found their own niche in the market.

Partners Simon Barton (25) and Zane Hemingway (26), say 60% of their sales are mail-order. And that figure's increasing at a rapid rate.

It's not what they initially set out to achieve. But for the new guys on the block - "please don't say new kids," said Simon - the mail-order business has soared, and they're certainly not complaining.

The two BCom graduates teamed up spontaneously last December, to provide a retail outlet in Mt Eden Road for GVP products. Despite the support of friends over the Christmas period, it quickly became evident that changes were necessary if they were to compete with the likes of Dick Smith Electronics and others.

A shop frontage inevitably meant higher rent and a bumped-up insurance policy. To lower overheads and capitalise on the number of out-of-town phone calls they had received, Zane and Simon took the bit between their teeth. After only half an hour viewing alternatives, they locked into a two-year lease on upstairs premises in Symonds Street and decided to take the calculated risk of approaching overseas wholesalers and manufacturers direct.

It was a make or break situation. They did not see themselves tackling head-on established outlets like Hard Disk Cafe or Kompute Systems. But, by the same token, they had to have a drawcard for attracting customers. Fostering the mail-order business was one solution; lowering prices by buying in bulk direct

from the source, and keeping their own mark-ups down, another.

"We were really forced into buying from America," Zane said. "We were a new company, and for three to six months, you have to pay cash up-front. We decided to go offshore and try our luck with importing direct. It was a gamble and many expensive phone calls paved the way."

Micro-World now places an order with US wholesalers or manufacturers every two weeks. Airfreighted immediately, orders take a week maximum to arrive. Said Simon: "It's better to go to the guys who actually make the product, but we have to put a decent order together to make it worthwhile. Otherwise freight just kills it." (Gold Disk, for example, requires a minimum order of 50 units.)

## From Modest Beginnings

Results have outweighed the risks and this business partnership thrives on a challenge. Said Simon: "We're always trying to buy different sorts of stock. It's easy to buy overseas. The hard part is knowing what to buy and being able to shift it."

The Symonds Street premises are in direct contrast to those early days in Mt Eden Road. The partners only have to look to the shelves, representing \$10,000-20,000 worth of stock, to see the transformation in little more than eight months. Pooled resources then consisted of their own two A500s, hard drives and modems, hooked up to demonstrate overall Amiga capability, plus borrowed demonstration software.

The calculated risks they took are slowly paying off. Aware of resistance to expensive prices, the partners buy in bulk (direct from Soft Logik and Gold Disk, among others) and minimise their mark-ups. A monthly newsletter to 600 active members advertises special offers, with a further 4500 names circularised less often.

Zane, qualified in the management side of computer science, promotes the serious Amiga packages and deals with customer queries. Marketing specialist Simon, a self-confessed, "computer games junkie from way back", knows the games merchandise inside out, and also takes responsibility for company administration.

## The Customers' Choice

Both are aware that price alone does not automatically mean loyalty from customers. Although undoubtedly a major drawcard, buyers responding to one attractive offer can equally be lured away by the opposition. Zane likens loyal Amiga supporters to lemmings - "always returning to the same place for whatever they need. Amigans tend to be lemmings. They'll go back and back to the original base. The people you steal on price will never be loyal. It's the people we actually make friends with who are loyal - and we have made a lot of friends."

Accordingly, lower prices are not the only beneficial spin-off for Micro-World clientele. Orders are despatched immediately, freight-free, with no added charge for credit card purchases, nor extra cheque-clearance time. "Mind you," warned Zane, "the first time we get a dud cheque may well change that." Installation of hard drives and upgraded





equipment is free of charge and after-sales service, a priority. Zane also takes time to assess individual needs before selling.

"Personally, I'd rather not make a sale, than put a person wrong," he said. "I don't want to push something in their hand, if it's not going to do the job they want it to. Some don't appreciate that. But, I believe that if customers are satisfied, they'll come back a second time, plus pass on word-of-mouth recommendation."

## "It was a gamble and many expensive phone calls paved the way..."

Simon agreed. "Word-of-mouth publicity can be better than anything else, because Amiga people can be pretty dormant. Many just sit at home and don't come into the shops. They'll know two friends, who'll know two friends... One recommendation says it better than anything else."

Both acknowledge the benefits of their timing in establishing Micro-World, to coincide quite by chance with Commodore's release of a variety of new products ("professional planning actually!" quipped Simon). A happy coincidence, which certainly sparked interest in the Amiga, encouraging upgrades in equipment, particularly from the A500 to the A1200.

### An Uphill Battle

Despite the innovations, however, Zane and Simon are concerned at the lack of promotion on Commodore's part, to lure more participants into the Amiga fold. The bulk of Micro-World sales go to converted Amiga users.

They explained: "The big worry is that Commodore's not converting anyone else. It's not easy, trying to get new people into the market - so the market is shrinking. We've thought about doing massive flyers, radio advertising, and so on, but if we do so, we want Commodore to contribute. Unfortunately, they're not willing to do so. Commodore is a warehouse - what they should be is an advertising company."

"The Amiga might be at a stage for them where they're just milking it, rather than be prepared to advertise new products. There's a big difference between promotion and advertising. Promotion is aimed at people who already have Amigas, whereas advertising is necessary to get new people into the Amiga computer. Without the advertising, the market will shrink to a size where it's not viable."

Thirty per cent of Micro-World customers are over 40 - retired professionals looking for the serious packages. They have money to spend and notions of how to make money, commented Zane. But substantial outlay is not always evidence of a business venture. Said

Simon: "Computing is becoming a serious hobby. If you go fishing, you buy a boat. If you go computing, you buy a decent computer. I think people are starting to spend a lot more money than they expected to spend five years ago. It's like buying a big boat, instead of a little tinnie."

### The Mail-Order Monster

Regardless of motive, Zane and Simon aim to keep Micro-World in the forefront of customers' minds. Regular newsletters and flyers detail products and special offers. A comprehensive catalogue (representing six months' hard labour) and price list (three months' effort), are an impressive follow-up.

Out-of-town orders (notably from New Plymouth and Queenstown, but throughout the entire country), represent the tip of a largely untapped, mail-order market. Customers whose local dealers are hamstrung by small ranges and high prices, have been wooed by efficient, comprehensive, mail-order service, set in motion with a toll-free call from the comfort of their homes.

With more than 100 titles, Micro-World offers probably the widest range of games in Auckland. Not that they are able to capitalise on that selection. "We can't sell them in Auckland - there's too much piracy. Our major games market is down south," said Simon, who believes that software piracy is slowly killing the Amiga. Post-election anti-piracy laws will reverse the trend, he feels, but the problem currently represents "hundreds of millions" of dollars in lost revenue.

Finding the most effective advertising channels has been very much trial and error. Only in certain situations was it appropriate to question customers directly. Certainly not the blatant "where did you hear about us?" format, to put them on a par with the McDonalds catchcry: "Do you want fries with that?" shuddered Zane.

Most successful advertising avenues have been Trade and Exchange (rather than The Herald), Amiga Down Under, their own mail-outs and recently-formed User Groups.

Keeping one step ahead of their competitors is a never-ending challenge. Modems were the hot promotional line the week I talked to Zane and Simon. A considerable number of phone calls requesting bigger hard drives for A600s and A1200s had also persuaded the pair to bring in 2.5-inch hard drives at reasonable prices. "We now have \$5000 of hard drives sitting out the back," said Zane. "We listen to what people want and go out and buy. We take a few gambles, but if something's a very good price, we obviously want to take a risk and buy."

### Down Every Avenue

Micro-World aims to cater to all sections of the Amiga market, from games enthusiasts upwards. Said Zane: "The Amiga is a young machine, even though I say that 30% of our customers would be older than we are."

Simon: "I think if you retire and you have a

computer, it's a great time-waster - as good as living on the beach and going fishing."

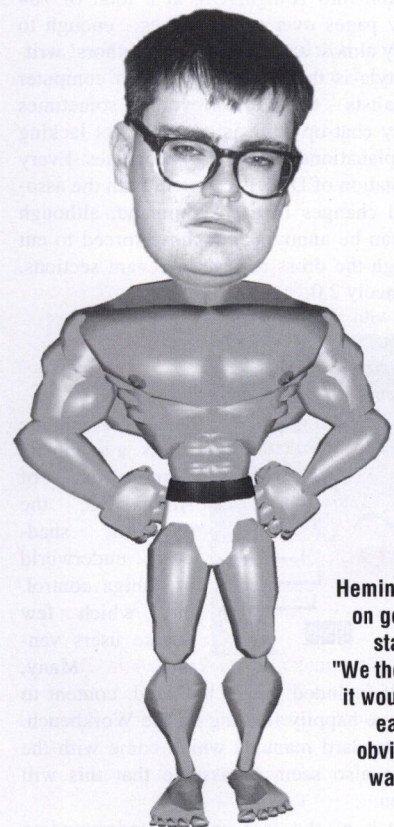
Zane: "But then again, if you're living on the beach and going fishing, AND you've got a computer, you'd be in a bit of heaven!"

Heaven at Micro-World is still some way off - but come Christmas, with the first twelve months under their belt, the partners will start to draw more than a pittance from the business, instead of ploughing all their profits back into stock. It's been a challenging year - a far cry from the simple task this laid-back pair envisaged when they first opened the retail doors.

"We thought we'd be millionaires overnight," joked Simon. "Much of the hard work is in the running of the business. It's not trying to sell. Most of it is getting supplies in, keeping on top of prices, making decisions on what to advertise, where to advertise, how much to spend - it's enormous."

Zane: "We thought it would be easy. It obviously wasn't. I don't know if we would do it again. It's a lot of hard work - much harder than we thought it would be."

Despite the gruelling hours and unexpected workload, the pair who originally met in an enrolment queue at university, seem to have struck several of the right chords. Their success is also testimony to the fact that business partnerships do not always have to kill friendships. "That's probably due to the fact that we are very similar in personality," said Simon. "We're both lazy, laid-back, casual...if we were opposites, we'd be at each other. The only times we don't get on are when the business isn't doing well - and that's not very often."

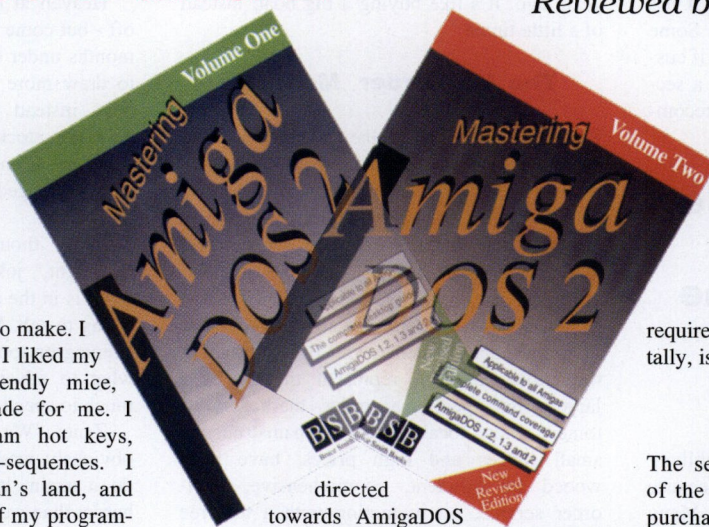


Zane Hemingway on getting started: "We thought it would be easy. It obviously wasn't."



# Mastering AmigaDOS 2, Volumes 1 and 2

Reviewed by **Dudley Storey III**

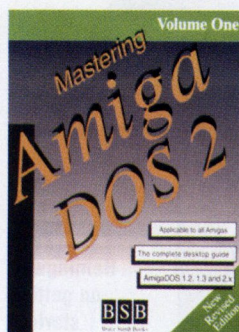


I HAVE A painful confession to make. I was not always a power user. I liked my Workbench and felt user-friendly mice, windows and icons were made for me. I didn't know how to program hot keys, AREXX scripts, or startup-sequences. I treated the Shell as a no-man's land, and endured the taunts and scorn of my programming friends at this weakness.

That has now all changed. I have souped up and fine-tuned my Amiga with customised scripts, until it runs like a Formula 1 racecar - bright, glittery, unique, unmistakably mine. I speak the language of the Shell like a native. The cause of this miracle I assign to two reference guides by Bruce Smith and Mark Smiddy, "Mastering AmigaDOS 2, Volumes 1 and 2".

## Judging the Book

The writers have been exhaustive in their research into AmigaDOS, at a total of 784 heavy pages over two volumes - enough to satisfy almost any interest. The authors' writing style is that unique to British computer journalists - the often irreverent, sometimes breezy chat-up - but is certainly not lacking in explanations of technical processes. Every incarnation of DOS is covered, with the associated changes in each command, although this can be annoying for those forced to cut through the dross to reach relevant sections, assumedly 2.0.



## Volume One

The first volume offers a complete examination of AmigaDOS, the powerful, shadowy underworld of Amiga control, into which few novice users venture.

Many, myself included, never bothered, content to continue happily floating on the Workbench. The standard manuals which come with the Amiga also seem to assume that this will happen.

Much of the fear and misunderstanding

directed towards AmigaDOS

seems to be a cop-out - potential users clutching their mice and joysticks, while exiling the keyboard. Those unable to type more than ten words a minute, however, will be pleased to learn that Mastering AmigaDOS begins at the most basic instructional level. Shortcuts are shown first, so that the novice can be up and running in the Shell in no time. Smith and Smiddy remove the mystique from AmigaDOS by explaining clearly the purpose of each command, initially drawing parallels between Workbench operations (such as copying a directory), and commands in AmigaDOS which actually execute the task underneath Workbench.

In Chapter Six, the focus moves to the Shell. Until I read this book, I thought that the Shell was some sort of poor second cousin of the venerable CLI. Not so. As the authors demonstrate, the Shell is, in fact, more powerful and flexible than the CLI.

Chapter Eight covers wildcards and pattern matching, showing the enormous versatility of using simple patterns to copy multiple files from the Shell, which could take much longer from Workbench.

In addition, the book explains in detail all text editors (ED, EDIT and MEMACS), scripts, file protection, the startup-sequence for each AmigaDOS release, global and local environmental variables, all devices, structured AmigaDOS (wherein scripts can act like a programming language, with GOTO-like functions using SKIP, LAB and BACK, IF...ELSE...ENDIF statements, and evaluating and manipulating user variables), recursive scripts and scripts which write scripts, the Commodities Exchange, BRU, Pipes...the list is as extensive as AmigaDOS itself. This approach impresses, in that every explanation is further clarified by a tutorial - in the case of scripts, dozens of them - creating a useful library of commands.

Virtually the only topic not covered in the books is AREXX. As the authors correctly point out, to do full justice to AREXX would

require a separate volume (which, incidentally, is underway).

## Volume Two

The second volume is largely independent of the first, and, as such, not a compulsory purchase to complete the series. It is mainly an indexed reference to 2.0, from ADDBUFFERS to WHY, with wildcards, in-depth appendices on AmigaDOS error codes, viruses, the IFF standard, the MountList and the Fast File Format. Each command is discussed in detail, complete with working examples. You could buy Volume 2 alone, simply as a reference, but you would lose the clarifying power of its predecessor.

The book's exhaustive research and meticulously clear approach should be emulated by all computer manuals. In simple terms, if you need to learn more, immediately, about AmigaDOS, outside ADU columns like Shell Shocked, Inside the Workbench and the Beginners' Page, purchase this series.

Mastering AmigaDOS 2, while very up-to-date (both volumes have been revised for 1993), will stay consistent - i.e., about DOS 2.1. Aware of the release of new Amiga models and versions of the operating system, the authors have stated their intent to remain at the crest of the wave, for the purpose of enlightening confused Amiganauts. Based on the quality of these editions, I have no doubt that Smith and Smiddy will be at their desks for a long time to come.

## Authors

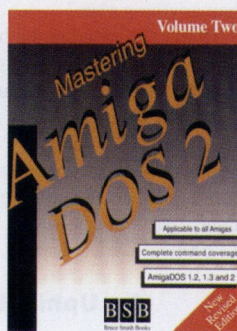
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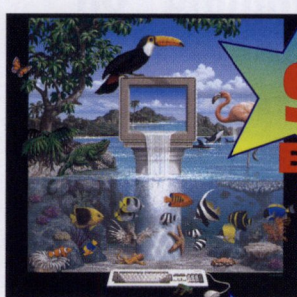
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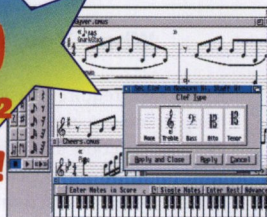
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# HITTING THE HARDWARE

*Clayton Hydes gets serious with the Amiga*

WELCOME TO THE first in a series of articles on programming the Amiga's amazing hardware custom chips using assembly language.

Let me begin by outlining the aims of this column and what you can expect in future issues.

The column will focus in the main on three types of users:

1. Programmers using 'higher' level languages such as Amos, Blitz Basic, Pascal or even C, who wish to learn how to 'directly' access the custom chips using a 'lower' level language.
2. Programmers with limited knowledge of assembly language, who wish to use it in a practical way.
3. Non-programmers, who, nevertheless, are interested in the internal hardware aspects that make the Amiga tick.

Since I am assuming that you have a basic knowledge of the 68000 assembly language, this column is not really suited to the 'beginner' programmer. Experienced programmers in other languages (who fall into category 1 above), should be able to pick up most of the 68000 instruction set as we go along. You will find that the 68000 assembly language is quite easy to learn, due to its near-symmetrical (or orthogonal) instruction set, but I do encourage the purchase of a reference manual. This will provide a more in-depth view on the fundamentals of 68000 assembly and will also help you to understand any tricky instructions that you may encounter. I recommend "68000 Assembly Language - Techniques for Building Programs" by Addison Wesley, which is excellently written and covers a wide variety of topics.

## What To Expect

Future issues will include articles on topics like the co-processor (Copper), playfields, sprites, audio, the blitter, system control and interface hardware. Most will take a couple of issues to explain properly and I will begin with the easier subjects and gradually work up to the more complex and challenging areas.

One point I wish to emphasise from the outset - learning to program the Amiga's powerful hardware does take time. Many people have asked me if I could "teach them hardware programming", expecting to learn every-

thing overnight or within a week! If you have a similar attitude, this column is definitely not for you. I have been programming on the Amiga for nearly two years and am still learning things about the hardware. (I hope I haven't frightened you off!)

One thing you will quickly find is that the Amiga is a 'fun' computer to program. The very cleverly-designed hardware makes it easy to program the Amiga to achieve effects impossible on IBM PCs or Apples. Presumably that's the reason you bought your machine? So, although proficiency does not come overnight, don't forget to have FUN when you are programming.

**"I have been programming on the Amiga for nearly two years and am still learning things about the hardware."**

## What You Will Need

Every task requires basic tools, and programming is no exception. The great thing about learning to code the Amiga's hardware using assembly is that you don't need a large bank balance to get started and keep going. Excellent tools are available, most of which are Public Domain and easily obtainable from PD disks and/or BBSs for little or no charge. Hardware reference books (which are a must) are, however, notoriously over-priced and fairly scarce.

The following list specifies the tools you will need to begin, which will also be required as you progress.

### An Amiga

The most important tool of all! 1 Megabyte of memory and an extra disk drive is recommended, but not essential. I learnt most of my

assembly programming on a single drive A500 - which goes to show that you can begin on even the smallest amount of hardware.

### 68000 Assembler

The assembler must be capable of using macros, include and binary files, and multiple sections. It must also have 68020+ support, as well as a debugger (very handy). I recommend two - Devpac and AsmOne.

My personal choice is AsmOne for its easy-to-use debugger, range of preferences, small filesize and the fact that it is Public Domain! Filesize is important, because if you make a mistake in your source and it crashes your machine (it will happen - believe me!), you don't want to spend ages waiting for your assembler to load in again. Both these models are compatible with each other. i.e., source written in AsmOne will easily load and assemble in Devpac and vice versa.

### Graphics Program

Any graphics/art program will do. I recommend DeluxePaint, but you may prefer another. An artistic friend who can draw imaginative graphics is also a bonus, if your own efforts leave a lot to be desired (like mine).

### IFF Converter

These programs allow you to load in IFF pictures, bobs, fonts etc. and convert them into a number of different formats, which can be used more easily in your source codes. I normally use the Kefrens IFF converter but, as it only runs on Kickstart 1.3 machines, I do not recommend it. There are many others to choose from, which all do basically the same things and which are all also Public Domain.

### Music Program

A music program which can play the Soundtracker module format is what is needed here. Soundtracker, Noisetracker, Protracker, Startrekker and Med all use this format and all are Public Domain. I recommend either Protracker or Med - the latest incarnations of the 'tracker' type program. Protracker, my personal choice, is simple to use, and the source



to the accompanying playroutine is easily inserted into your own source codes. Having another friend who's clever on the keyboard and can create good music is also handy here!

## Reference Books

These are a must, as you'll want to refer to them time and time again.

I recommend:

"Amiga Intern" by Abacus

"Amiga Hardware Reference Manual" by Addison Wesley

Both books contain basically the same information on the custom hardware registers, but different authors convey the information in different ways, and it is helpful to learn from both, rather than one. If you can't afford both, "Amiga Intern" would be my recommendation. It contains most of the information from the earlier books ("The System Programmer's Guide" and "The Advanced System Programmer's Guide"), plus new information on the Amiga 3000's hardware, including the ECS (Enhanced Chip Set) registers.

That wraps up the introduction. Next issue we will dive straight into some serious programming. ■

*Due to the length of the source code for this article, the listing will be printed in two sections. Part two (containing the ending routines and a program using the routines), will appear next issue. The subscriber disk contains the full listing.*

### Listing 1

```

;-----;
;Library equates      ;
;-----;

actiview:      EQU 34
oldcopper:     EQU 38
attnflags:     EQU 297
loadview:      EQU -222
waittof:       EQU -270
supervisor:    EQU -30
forbid:        EQU -132
permit:        EQU -138
closelibrary:  EQU -414
openlibrary:   EQU -552

;-----;
;Macros              ;
;-----;

waitvblank: MACRO
waitvblank@:   tst.b    $dff005
    beq    waitvblank@
waitvblank2@:  tst.b    $dff006
    bne    waitvblank2@
ENDM

waitblitter:   MACRO
    lea    $dff000,a5
waitblit@:     btst     #6,2(a5)
    bne    waitblit@
ENDM

;-----;
;Initialise routines  ;
;-----;

SECTION startup, CODE_C ;force code into chip
ram

    move.l  4.w,a6
    lea     gfxname(PC),a1
    moveq   #0,d0
    jsr     openlibrary(a6) ;open graphics library
    move.l  d0,gfxbase
    beq     exit

    move.l  d0,a6                ; save the old
    move.l  actiview(a6),oldview ; screen view
    sub.l   a1,a1
    jsr     loadview(a6)
    jsr     waittof(a6)

```

```

    jsr     waittof(a6)

    move.l  4.w,a6
    jsr     forbid(a6)          ;disable multitasking
;-----;
    bsr     getvbr              ;get processor vector table

    lea     $dff000,a5

    cmp.b   #$f8,$7c(a5)        ;test for AGA chipset
    bne     saveregvalues
    move.w   #0,$1fc(a5)        ;reset AGA sprites

saveregvalues:
    move.w   2(a5),d0
    or.w     #$8000,d0
    move.w   d0,dmacon          ;save the old DMACON

    move.w   $1c(a5),d0
    or.w     #$c000,d0
    move.w   d0,intena          ;save the old INTENA

    move.l   $6c(a4),oldirq      ;save the old IRQ

    waitvblank ;wait for start of a vertical blank

    move.w   #$7fff,$96(a5) ;disable all DMA
    move.l   #$7fff7fff,$9a(a5) ;disable interrupts
;-----;
;Setup copper addresses ;
;-----;

    move.l   #spritedata,d0      ; put blank sprites
    lea     spriteadd(PC),a0     ; into copper list
    move.w   d0,6(a0)
    swap.w   d0
    move.w   d0,2(a0)
    swap.w   d0
    move.w   d0,14(a0)
    swap.w   d0
    move.w   d0,10(a0)
    swap.w   d0
    move.w   d0,22(a0)
    swap.w   d0
    move.w   d0,18(a0)
    swap.w   d0
    move.w   d0,30(a0)
    swap.w   d0
    move.w   d0,26(a0)
    swap.w   d0
    move.w   d0,38(a0)
    swap.w   d0
    move.w   d0,34(a0)
    swap.w   d0
    move.w   d0,46(a0)
    swap.w   d0
    move.w   d0,42(a0)
    swap.w   d0
    move.w   d0,54(a0)
    swap.w   d0
    move.w   d0,50(a0)
    swap.w   d0
    move.w   d0,62(a0)
    swap.w   d0
    move.w   d0,58(a0)

;-----;

    bset     #1,$bfe001          ;disable the sound filter

    move.l   #coplist,$80(a5)    ; enable the new
    move.w   #0,$88(a5)          ; copper list

    move.l   #newirq,$6c(a4)     ;set the new IRQ
    ; enable the required DMA channels...
    move.w   #$83e0,$96(a5)
    ; ... and interrupts
    move.w   #$c020,$9a(a5)

wait:
    btst     #6,$bfe001 ;test for left mouse button
    bne     wait

```





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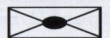
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# Do The BlitzMan!

by Blitz Basic co-creator, **Simon Armstrong.**

THINGS HAVE BEEN chaotic in the office over the last few weeks. This article is way past deadline, the latest Blitz 2 upgrade, BUM5, is still not finished, the release of SkidMarks has been put off until the end of November, due to too many perfectionists and not enough "let's just release it" types...

However, the good news is that Blitz 2 now features GadTools and ASL support, as well as a host of new AGA commands to keep everyone happy. We're launching in the U.K. this month, with what could be termed the promotional coup of the decade. All in all, it's looking as if the long, hard years of work are starting to pay off.

## Dance BlitzMan, Dance!

The Wireframe editor in this month's column is an excellent introduction to using recursion to process two-dimensional linked lists. Wireframe objects are drawn the same way as a fractal tree generator I included in ADU 2. The editor allows you to change the angle of any branch in the object, so BlitzMan can be quickly redrawn in any position. Just select any of his pivot points, such as a knee, with the pointer, then, holding the left button down, drag the mouse left or right. These two directions give you the ability to make either clockwise or anti-clockwise adjustments to his limbs, torso and head.

The seventeen square boxes on the right can each hold a different frame, allowing you to position BlitzMan in a series of postures. I have also included some Med commands to enable you to play a module to accompany BlitzMan strutting his stuff. At the moment it's all manual. When time allows, an automatic boogie mode will be added, to work either with the Med player or with a sampler, so he can dance to the stereo. The ability to save frames, edit number and length of limbs etc. is also rather lacking in v0.0. However, Acid Software is pretty hectic at the moment, so I'm not making any promises.

## The Double Linked List

The .seg NewType has two pointers to other .segs - a kid and a brother. All segs linked by their brother field share the same parent. The kid field is used to link the seg to its offspring (any segs which branch off). Not surprisingly, a diagram of this system looks just

like a family tree (a very patriarchal one at that!). The data field at the end of the listing holds all the information on BlitzMan and his default position.

## Them Bones, Them Bones

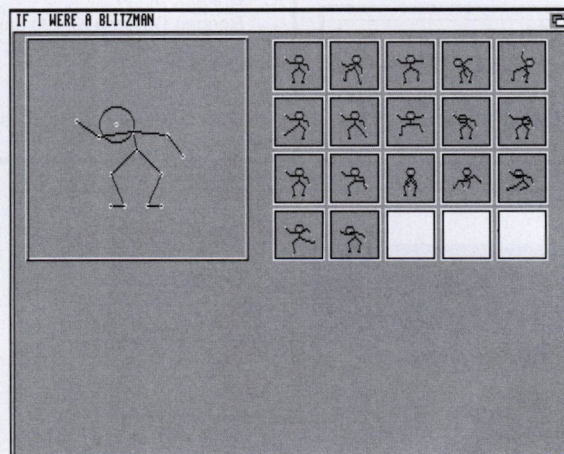
The origin of the shape is the central pivot point, in BlitzMan's case, his torso. If you grab his torso in the editor, you can rotate his whole body around.

The torso's kid field points to a thigh - its brothers are the other thigh and the back.

The readfigure{} routine reads the information from the data table into a series of segs, linking them up as necessary. All the routines in the listing are recursive in nature. If we were to trace through the routine, it would read something like:

1. Read the seg from the data table (angle length and number of kids).
2. For each kid, go back to step 1.
3. Link all the kids added in 2 to current seg, via its kid pointer.

Only three steps seem pretty simple. But



aren't some of the kids going to have kids? No problems - the wonders of recursion will sort that out for us, because each time we go back to step 1, our current position in the logic chart is pushed on the stack. This means the computer can return to that position after all the kids' kids have stopped having kids!

## Putting Pen to Paper

The drawfigure{} routine uses the same recursion method as the readfigure{}, except, of course, that instead of connecting the pointers, it merely has to follow them. The other great thing about recursive routines is that local variables are restored after the pro-

# blitz BASIC'S

gram has gone away and dealt to the kids.

The wireframe models all use delta angles to represent the orientation of each limb. This, in effect, means that instead of recording BlitzMan's foot as pointing up, we reach the same conclusion, because we know instead that his foot is on a 30-degree angle to his lower leg, which is at such and such an angle to his upper leg. The angles are all local, not global (as used in Imagine terminology). As variables in Blitz 2 Statements are automatically classed as local, implementing this system is quite simple.

The variables aa, xx and yy are used to compound the angle and position of each limb. By storing these values in the seg's x, y and a fields, the following editing routine can zip through all the segments, checking where the draw command actually located each point.

## Locating a Limb

As I just mentioned, the drawfigure{} routine also records the screen location of each seg. Thus, the routine to find which seg the mouse is pointing at, simply needs to recursively traverse the list, checking to see if the pointer is anywhere near that location. The only problem I found was how to exit the function once a hit had been recorded.

## The User Interface

A quick explanation of the rest of the program is probably in order. As usual I have attempted to add as many comments as possible, in order to make the code self-explanatory where possible.

The angles 0 to 255 correspond to 0 to 360 degrees. A negative length for any seg means that the editor will draw a circle, not a line, at that position.

Blitz programmers will need no introduction to Menus, Gadgets and Windows. However, I must admit that the use of PropGadgets is somewhat unsophisticated for the frames - a blank BoxGadget has been added in BUM5 for such effects.

Contact me C/- ADU, if you want me to send you the tween{} routine, which draws any inbetween frame, allowing BlitzMan to animate smoothly between one pose and the next. ■



## BlitzMan v0.0

```
; Dancing BlitzMan v0.0 by Simon Armstrong
NEWTTYPE .seg
  *kid.seg      ;points to first offspring
  *bro.seg      ;links offspring together
  x.w.y:a       ;cartesian co-ordinates for editing
  angle.w:length ;polar coordinates for drawing
End NEWTYPE

Dim qsin.q(256),qcos.q(256)
Dim List segs.seg(500)
Dim *f.seg(20)
DEFTYPE .seg *myman

Statement readfigure{*temp.seg}
  SHARED segs()
  Read numkids.w      ;read next entry in data table
  Read *tempangle
  Read *temp\length
  *prev.seg=0
  For i=1 To numkids   ;no loop if numkids=0
    ; (thanks Mark!)
    AddItem segs()      ;get a seg from the list array
    segs()\bro=*prev    ;link to last brother
    *prev=segs()        ;make last brother me
    readfigure{segs()} ;and onto the next brother
  Next
  *temp\kid=*prev      ;now join all the brothers to me
End Statement

Statement drawfigure{x.w,y.a,*temp.seg}
  SHARED qsin(),qcos(),ratio,size
  USEPATH *temp
  aa=(a+\angle)&255 ;add delta angle
  slen=\length*size ;scale length
  xx=x+qcos(aa)*slen;yy=y+qsin(aa)*slen ;polar convert
  \x=xx,yy,aa        ;store for findpart{}
  If \length<0       ;looks like a circle seg()
    Wellipse xx,yy,-slen,-slen*ratio,1
  Else
    Wline x,y,xx,yy,1 ;no it's a line seg()
  EndIf
  Wellipse xx,yy,size*2,size*2*ratio,2
  ;add hot spot for editor
  If \kid Then drawfigure{xx,yy,aa,\kid} ;do the kids
  If \bro Then drawfigure{x,y,a,\bro} ;do the brothers
End Statement

Function.l findpart{x,y,*temp.seg}
  DEFTYPE .l result
  USEPATH *temp
  If RectsHit(x,y,1,1,\x-2,\y-2,5,5) ;if hot spot
    Function Return *temp ;exit
  Else
    If \kid Then result=findpart{x,y,\kid};do kids
    If result Then Function Return result
    If \bro Then result=findpart{x,y,\bro};do brothers
  EndIf
End Statement

; main program starts here

MaxLen pa$=160 ;set path string for filerequester
MaxLen fi$=64 ;set filename string for filerequester
ratio=.5 ;hires noninterlace pixel ratio

For i=0 To 255
  qsin(i)=Sin(i*Pi/128)*ratio;qcos(i)=Cos(i*Pi/128)
Next

Screen 0,10,"IF I WERE A BLITZMAN"
MenuTitle 0,0,"PROJECT"
MenuItem 0,0,0,0,"LOAD MED"      ","L"
MenuItem 0,0,0,1,"START MED"    ","S"
MenuItem 0,0,0,2,"QUIT"         ","Q"
g=0

For y=0 To 3:For x=0 To 4
  PropGadget 0,300+x*64,6+y*32,1,g,60,30:g+1
Next:Next

Window 0,0,10,640,246,$1000,"",1,2,0:SetMenu 0
;big window at back
Window 1,16,14,256,128,$1000,"",1,2:SetMenu 0
;edit window

SetInt 5:PlayMed:End SetInt

Repeat
  ev.l=WaitEvent
  Select ev
    Case 8
      If EventWindow=1 Then Gosub editman
    Case $40
      If GadgetHit<20 Then Gosub selectframe
    Case $100
```

Continued on page 62

## Alternative Data List for BlitzMan's Horse

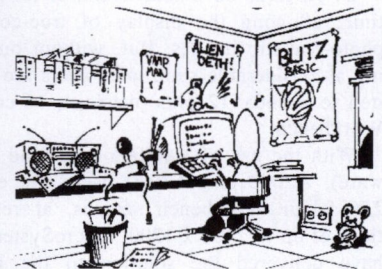
```
.horsedata
Data.w 3,0,0 ;origin (bum)
Data.w 1,32,40 ;back right thigh
Data.w 0,48,40 ;back right calf
Data.w 1,96,40 ;back left thigh
Data.w 0,-48,40 ;back left calf
Data.w 3,0,60 ;back bone
Data.w 1,32,40 ;front right thigh
Data.w 0,48,40 ;front right calf
Data.w 1,96,40 ;front left thigh
Data.w 0,-48,40 ;front left calf
Data.w 1,-32,40 ;neck
Data.w 0,128,-12;head
```



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From MacroSystemUS comes a low-cost, 24-bit display card boasting impressive hi-res graphics and AGA emulation. **Rowan Smith** eyes up...

# Retina



THE AMIGA HAS always been a graphics-oriented computer system. Many will recall the initial response to HAM, when the simultaneous display of 4096 colours was impressive. Nowadays, it is not uncommon to see 24-bit displays of 16.8 million colours. And we have begun to take the visual experience for granted.

24-bit cards have been available for some time, allowing the display of true-colour, photo-realistic images. But, without outlaying a considerable sum, most users are limited to a 640x512 plus overscan, 16-colour Workbench.

With the use of a Retina card (and software), A2000 and A3000 users can enjoy 256-colour Workbench screens, at resolutions of up to 2400 x 1200. MacroSystemUS have delivered the solution to the long-promised, AGA chipset upgrade for A2000 and A3000 owners - with the Retina card, you, too, benefit from dazzling Workbench displays. You must have WB2.0 or greater.

Retina consists of a 100-pin, Zorro II

(Zorro III-compatible) board, Retina software and manual, and a 24-bit paint package - XIPaint.

The board is not as deep as most Zorro cards and, when fitting it to a fully-populated A3000, I had to remove two of the wider cards, in order to insert it properly into the desired slot. After re-inserting my memory expansion card and Commodore networking card, I replaced the case on my A3000 and connected a monitor to the Retina card. Since this card only has a 24-pin (3x8) plug, connection of a 1084S, with its 24-pin (2x12)

plug will require an adaptor.

Software installation was a breeze, following the instructions in Commodore's Installer program. I was asked where I wanted the RetinaTools directory stored - the same with RetinaSystem.

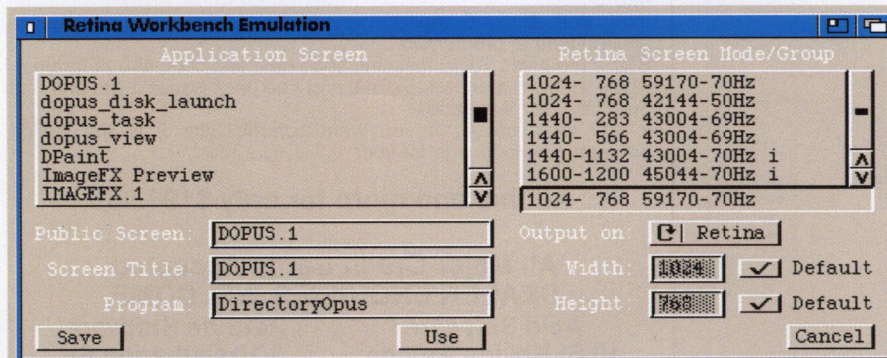
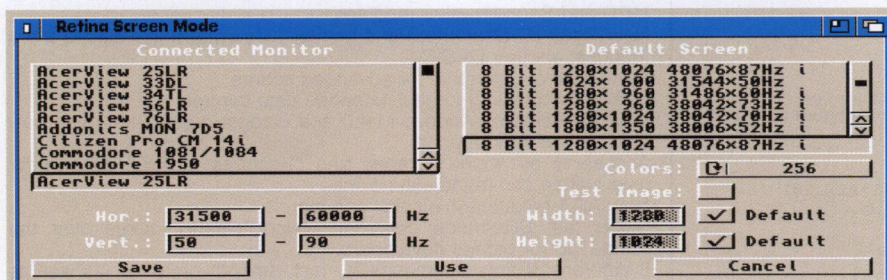
## Operation

Supplied documentation was of little use, the slimline (16-page) manual not even thick enough to prevent the wobble of my desk. AGA emulation was not mentioned. It did, however, tell me how to install the card in my computer, a fact easily learnt from the User's Guide of an A2000.

After turning on my computer, I was faced with a black screen. I was soon to discover that to set up Retina successfully required either a vast understanding of how the Retina software works, or the use of two monitors. Alternatively, a switch box allows the user to switch between Amiga and Retina output - necessary, since Retina will not display the Amiga output through its port. Any programs which open in "Amiga mode", as opposed to "Retina mode", are displayed through the standard Amiga video port.

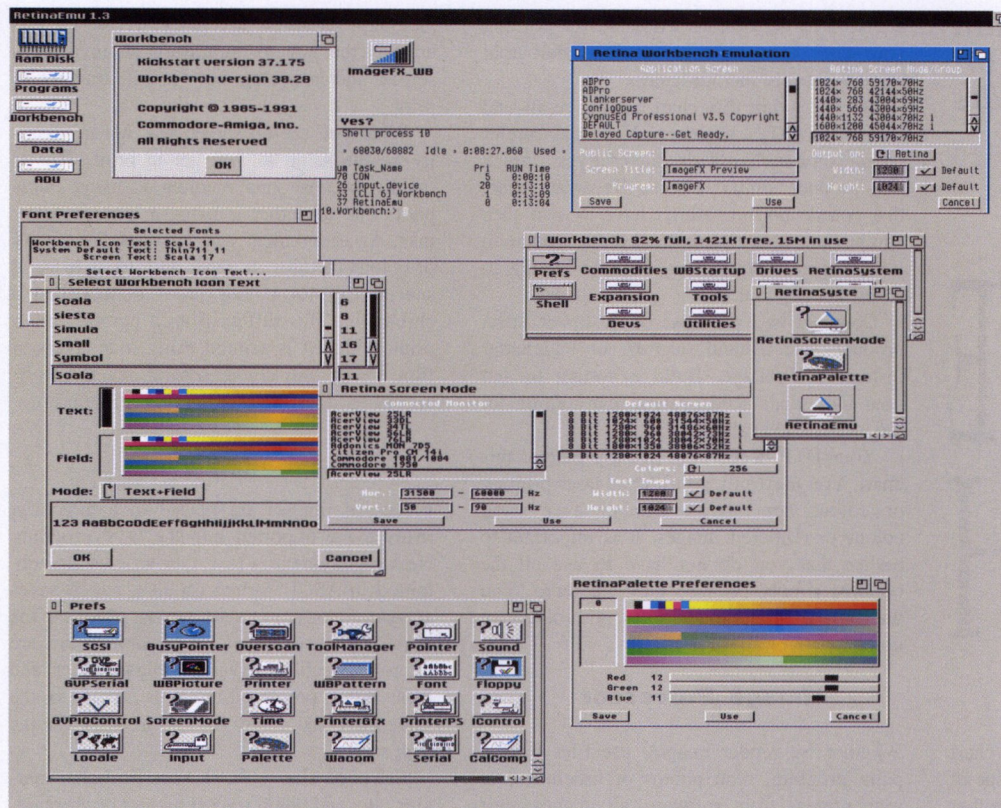
After finally swapping the plug of my monitor from Retina to Amiga, a Workbench was displayed. It seems that if a screen mode is opened by a piece of software bigger than the actual displayed screen, Retina reacts by displaying a black screen, leaving the user at a loss.

When the RetinaEMU software crashed, another problem was encountered. It was one of those crashes when no matter how many times you reset your computer, a Guru message appears. Trouble was, I couldn't see these dreaded flashing boxes, as they were sent through the Amiga output, and not visible on the Retina screen!



Use RetinaScreenMode (top) to define which monitor is attached to your Retina card. Once your monitor is set, use RetinaEMU (above) to configure each of your applications' individual screens, by selecting a new screen mode from Retina's comprehensive list.





**RetinaEMU allows Workbench to run in 256 colours at 1280x1024, on any Zorro-II capable Amiga - you'll need an 040 to make reasonable use of such modes, though!**

## AGA Emulation

Selecting a screen mode for AGA is a simple task, (once you discover the RetinaEMU program has menus). Selecting AA emulation and then using many colours brings up a requester warning that displaying more than 16 colours will be very slow. The ability to display a 256-colour Workbench is one of the main reasons for purchasing a Retina card, and "slow" is not quite the appropriate word. When displaying my Workbench at 1280x1024 with 256 colours, it took a good second before I could move the mouse pointer, while closing a window, and redrawing could be followed around the screen.

Of course, this was pushing Retina to its limits, and by reducing the screen size to that of a standard Workbench, I found the speed comparable to that of an AGA Amiga displaying 256 colours.

## Monitors

Before running RetinaEMU, you must advise the type of monitor in use. RetinaScreenMode, found in the RetinaSystem drawer, includes a wide selection of monitors - from the low-end Commodore 1084 to an NEC 6FG. While experimenting with the different types of monitors, I was soon to discover that I did not have to select the correct monitor to get the best results. Sometimes the image was clearer on another model. For example, after using an NEC 6FG Multisync, I found that the ACER25R gave a better image at 2400x1200 than the supplied NEC driver.

Retina comes with full developer's docu-

mentation, assisting those wanting to make use of the hardware, and maybe write their own 24-bit, image-manipulation software. Assembler and C includes, along with AutoDocs for the retina.library and FDs are supplied.

Four tools come with Retina. With accompanying documentation lacking, however, I could only experiment with MakeRace, DefineMonitor, RetinaComm and RetinaDisplay. RetinaDisplay is a program which, when run, opens a window and allows the user to drop icons of 24-bit images, which are in turn displayed. DefineMonitor seems to allow the user to define his own monitor by requesting extremely technical information. I'm unaware of how the average user would obtain the relevant answers. Details of MakeRace and RetinaComm will, hopefully, be explained in future revisions of the manual, since their purpose eluded me completely.

## XIPaint

This exceptionally user-friendly painting program supplied with Retina, allows the user to create 24-bit images with ease. Since few 24-bit paint programs can be used with different 24-bit cards, MacroSystemUS have done the right thing by including this one with Retina - its main disadvantage, again, the lack of documentation.

The interface is easy to use, with a right mouse button click displaying the control panel. Included are all the usual tools we've come to expect of a paint program, but little else.

## Drawbacks

The Retina's most notable drawback is its inability to display two screens simultaneously - a feature most Amiga users have become accustomed to. Unfortunately, applications such as ImageFX suffer as a result. (For those unfamiliar with ImageFX, this program uses a two-screen system, where the preview screen is displayed in the background, and the toolbox is displayed on another in the foreground, about three-quarters of the way down the screen.) With Retina, ImageFX is forced to bring its screen completely to the front, preventing the user from seeing the preview screen while selecting functions. A right mouse button removes the screen and leaves you with the image. Alternatively, it is possible to run ImageFX on the Workbench screen, at the expense of a Preview screen.

## Impressions

MacroSystemUS have achieved a breakthrough in graphics technology. Other boards claim to have imitated the accomplishments of Retina - when they come our way, we will

put them to the test. I can't help feeling, however, that MacroSystemUS rushed the release of this product, the software for which is still being upgraded at a significant rate. (After being given the board for review, I received three updates to the software within five weeks - all major upgrades. The first version did not allow for AGA support, the second did, and the third enabled screens to be opened which were larger than the displayed Retina size - thus allowing for hardware autoscrolling, previously thought impossible.)

If you are looking at purchasing a board of this type, it might pay to look around. There are now quite a few other third-party graphics cards becoming available (Piccolo, Picasso II, Merlin and the EGS Spectrum are examples). The most important advice I can give is to make sure you see the card in action doing what you want, and what the supplied documentation says it will do - do not rely on advertising alone. Any good store will be more than happy to demonstrate the card. Make sure you can easily install the card yourself or ask your dealer to do it for you.

## Manufacturer

MacroSystemUS (USA)

## Supplied for Review by

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## Retail Price

\$NZ1795



Editor **Graeme Cheesman** continues his series on achieving the best results in Desktop Publishing.

# the CREATIVE TOUCH

IN THIS ARTICLE I have used a flow chart to show what we use to produce each issue of ADU. I have not included any specs on either these products or the Amigas used. Neither have I included details on raw material used, nor the people involved in producing ADU. This article is aimed at briefing Amiga users on the intricacies of desktop publishing.

It might point you in the right direction and help define your particular needs in the DTP field, and the information may also assist you to achieve more professional results. Pay

attention to the options available for printing your work. How far you venture at the output stage is entirely in your hands.

Do not judge this chart as the be-all and end-all of DTP, however. You may prefer other software/hardware alternatives, which will produce similar effects. Be aware, also, that you do not necessarily have to own such equipment. Investigate the avenues open to you to access equipment, without having to invest heavily yourself.

Compromise, perhaps, on a lower spec. product, like a hand scanner, or PageSetter instead of ProPage. Build a system to suit your individual needs, rather than aiming for the ultimate available.

Your DTP needs may fit only part of this chart. You may only go as far as laser printing or colour dot matrix, without ever using colour or rendered images. It is important to realise that you do not have to use all the options, simply because they are there. You will only frustrate your efforts, go broke, give up entirely - or all three!

## Image Processor

Whether we render images, use files from a paint program, scan photos or brochures, or grab screens from software, all images must be processed. We cannot use them "raw" in our magazine. Because we are outputting to full colour print, we also need to take care with the quality of the image used.

Images are scaled, cropped, brightened, colour-corrected, gamma-corrected, convolved, composited, and more, and the qualities of each are as individual as the pictures displayed. There is no set adjustment formula,

although variations are not extreme. Experience is the key to appraising an image on-screen and assessing how it will transfer to print.

What you see on screen will not necessarily be the same as you get in print. This is mainly because one medium is using phosphors and the other is using a load of sticky inks. An economical way to check the quality of colour pictures in paper and ink is to get a special type of colour proof done called a chromalin. This differs from a normal colour print in that it is printed using four layers of film. Using four colour separations as an off-set printer does, gives a fairly accurate proof.

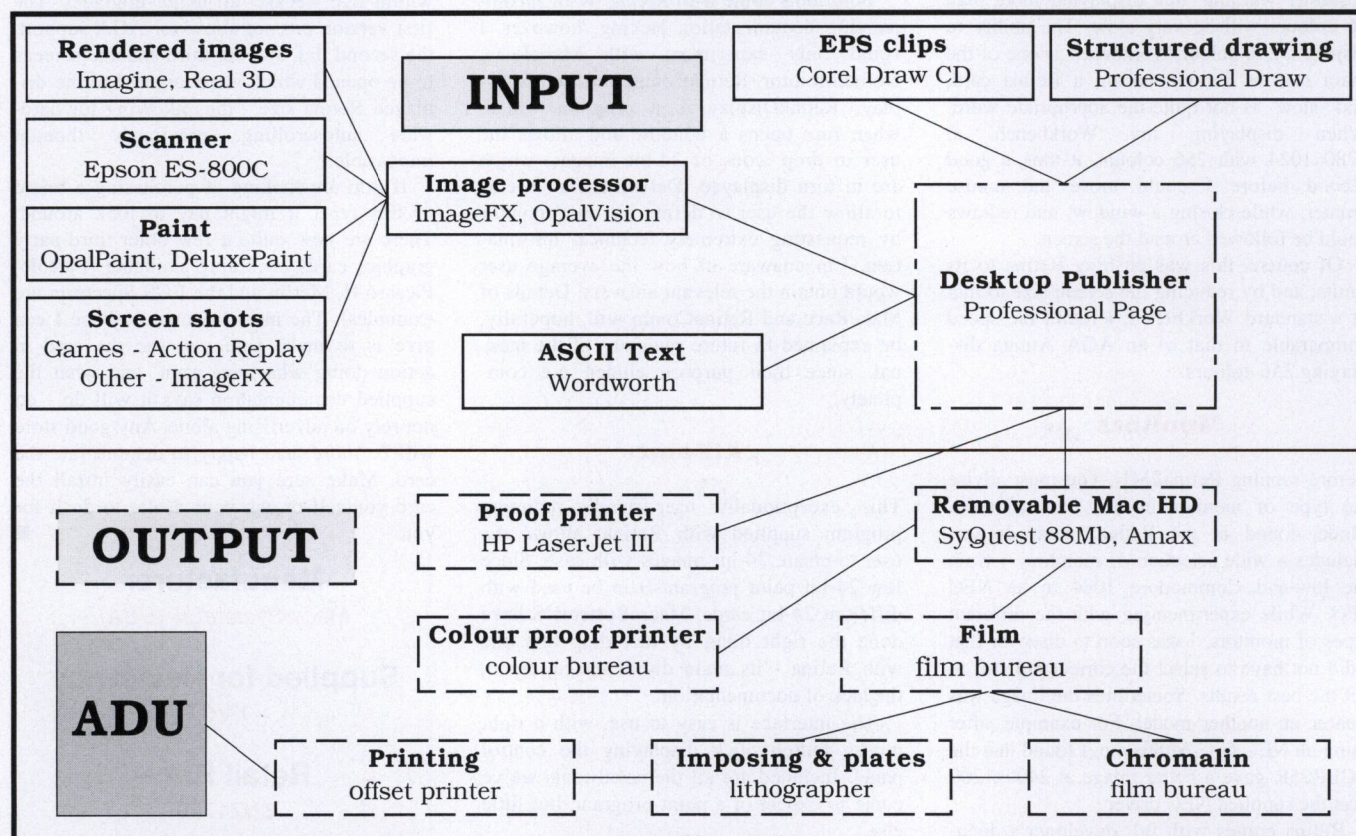
## Text

Processed images are placed in a directory, ready to be imported into the DTP program. Next requirement is text. Our articles are submitted in ASCII format on disk, which saves an enormous amount of typing. Request the same from your clients, if possible - files are inter-changeable between Amigas, Macs and PCs. After proofreading it is saved to the same directory, ready for lay-up, which is the next step.

Set page size, column specifications, margins, etc. and begin importing text or graphics. Another timesaver involves the use of page templates created in advance.

## Structured Drawing

Space is left for headings, and text and graphics inserted appropriately. Most ADU headings are from Professional Draw - one is even rendered. Structured drawing software allows





for extra creativity. Output from such software is normally in the form of clips - images saved as lines and fills, rather than as dots (as a paint program saves its data). Use of clips results in much cleaner images, which can be transparently scaled, although realistic detail is more difficult to achieve.

Although clip art is available in bitmap form, structured clips are recommended for cleaner presentation in logos and icons, as well as headings.

## EPS Clips

Clips in Encapsulated PostScript format (EPS) can be imported from any platform, which opens up a whole new source of material to enliven DTP material. PostScript - a standardised printer language, common on all platforms - is capable of interpretation by most DTP software. Corel Draw offers a vast library of EPS clips on CD, which is definitely worth a look.

## Layout

Familiarity with the features of your software package is the key here. Definite ideas on the appearance of the finished product are helpful, as well as bearing in mind final outputting options.

## Output

As indicated on the flow chart, ADU utilises a number of output devices - a laser printer to proof layouts, and, for colour proofing, a bureau. This is where the Amiga's emulation capability comes into its own. Since few bureaux use Amigas, files must be stored on disk in a format the bureau can read. PostScript is the obvious choice.

## PostScript

This universal printer language is an asset. The one disadvantage, however, is the size of PS files. Our ADU cover alone is usually in the vicinity of 40 Mb. Fonts, bitmaps and clips are incorporated in the one file. On the plus side, text-only files tend to be small - 5-10 Kb. PostScript files compress well, with savings of up to 80 per cent. This is of little value, however, if the bureau is unable to unpack them. An initial test run is recommended, which may let you use floppy disks or modem if they can uncompress your files.

The amount of material is obviously a key factor. If you try to send a 40 Mb file via modem (forget the floppies), you could be there for days, and the bureau would not appreciate your tying up their line. You might also be charged for uncompressing large files.

## Removable Mac HD

SyQuest 88 Mb cartridges have proved by far the fastest and simplest method of moving ADU files around. Most bureaux operate SyQuest units, as well as Macs, which meant our files had to be stored on Mac-formatted

cartridges - a painless process with A-Max II. The combined system works like a dream. In order to use cartridges under anything other than A-Max, you will need to have them formatted by a real Mac. (I believe A-Max II+ solves this problem.)

## Colour Proofs

The SyQuest cartridge facilitates colour proofing, as well as production of magazine film. Access to a dot matrix or inkjet colour printer will enable you to proof your own work. Be aware, however, that the colour from such printers will not match the finished result, if you plan to use offset printing.

Even with a \$30,000 colour PostScript printer, the bureau proofing ADU pages is unable to reproduce the exact shades of the printed publication. Results, however, are normally close enough for us to assess final accuracy. In special cases, as already indicated, a chromalin will provide an exact colour proof.

## Printing

Once all other details have been finalised, we output to colour-separated film. Options for film include printing positive or negative, mirrored or not mirrored, and adjustments for width of roll, depth of graphics.

Actual paper size (not document size) must be set to allow for crop marks and bleed, and the orientation and scale of the printed image.

Numerous complicated settings also allow adjustments in colour separations which I will cover in more depth in a later article. Unfortunately, this is only the tip of the iceberg as far as options for output go.

The film stage is followed by the process of "imposing" (preparation for plate-making) and actually making the plates. The printer takes those plates and completes the cycle. After binding, the finished magazine is delivered.

## Sounds simple?

Theoretically, it sounds simple, but many frustrating hours and expensive mistakes lie behind the glossy covers. And the learning curve is by no means complete. There is no substitute for practical experience - no matter how many books you read.

Whatever your aims through DTP, you will find something applicable in this system. Remember that if the necessary equipment is outside your budget, alternative options are available. Laser printers may be sufficient for your output - limited numbers of colour prints will certainly not warrant offset printing. Inputs and outputs must be tailored to quality and quantity required.

Successful DTP is not just a case of using Professional Page or PageStream, but rather, making use of a wide range of products and techniques.

I will discuss some of these areas in more depth in future issues, and will be pleased to answer any queries. Drop me a line at ADU, (see page 10 for address).

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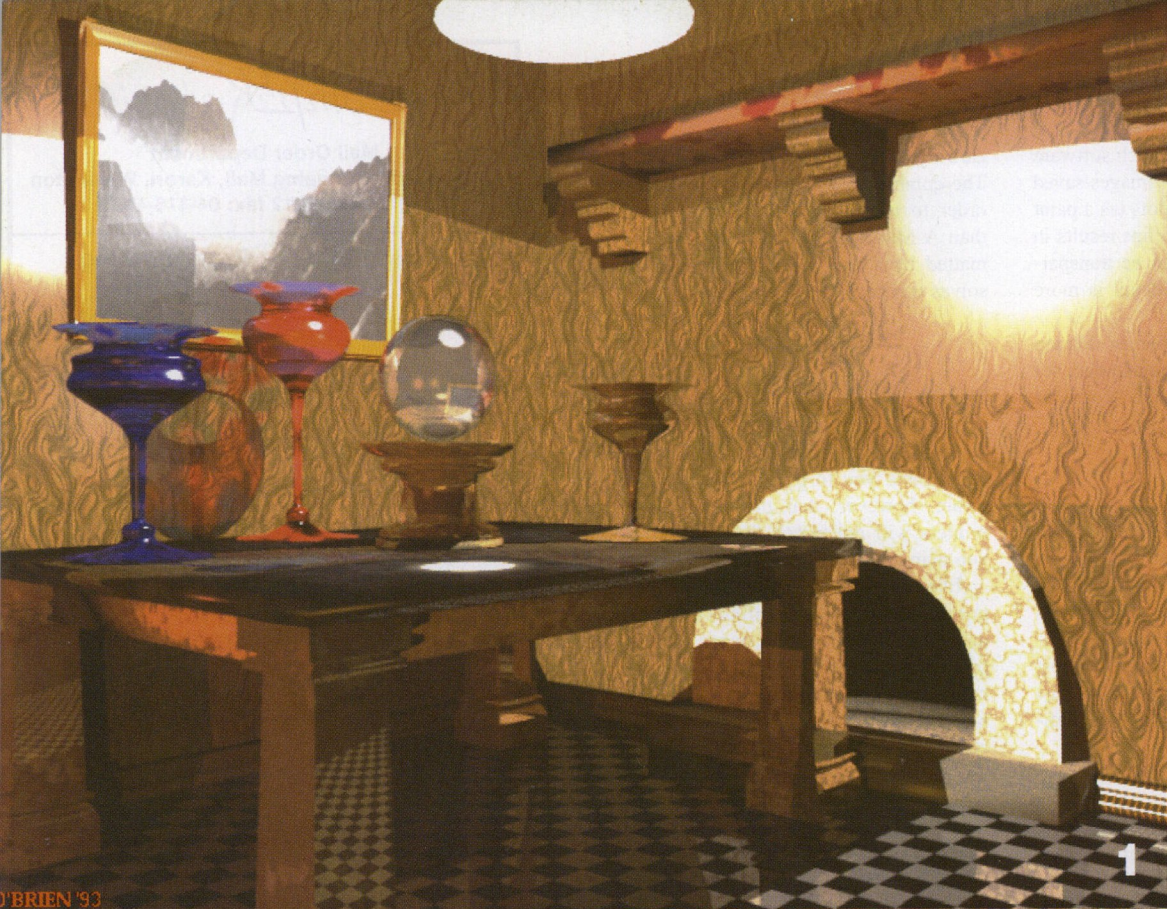
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O'BRIEN '93



3

4



5



2

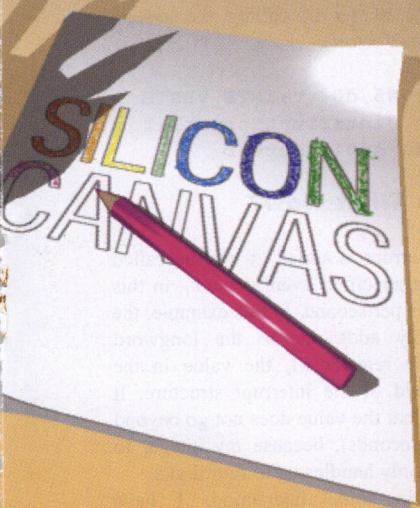


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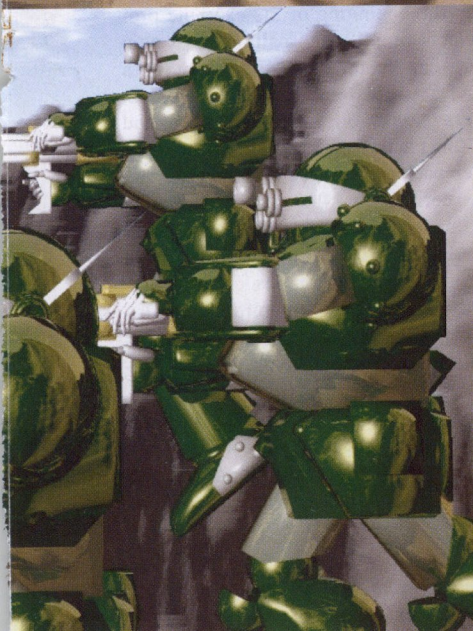
If you'd like the rest of the world to see your masterpiece, send it to us on disk. We accept almost any format, and will return your disk(s) if you include an SSAE.

Becoming famous couldn't be easier .. see pg 10 for address details.





R O'BRIEN '93



- 1 "Room" (736x566), by Richard O'Brien (Aus), was created on an A4000 with Aladdin 4D, Vista Pro 3.0, Imagine 2.0 and OpalPaint. It took 19 hours to render!
- 2 "Three Imaginary Hours" (640x512) was created by Matthew Buchanan (NZ) using Imagine 2.0, DeluxePaint IV and OpalPaint 2.1.
- 3 Matthew Buchanan created this image (550x550) on a 10 Mb A3000 using Imagine 2.0 and ImageFX 1.5.
- 4 "KerPow" (320x512) was drawn by

Rodney Entwisle (NZ) using DeluxePaint on a 3 Mb A500+.

- 5 "ATM Flight" (768x570) was created by Wei Shih Wang (Aus) using Imagine 2.0 and Scenery Animator 2.0, and composited using ImageMaster.
- 6 "Dominion" (736x576), by Richard O'Brien, was modelled and rendered in Imagine 2.0, and modified in OpalPaint.
- 7 "The Temple" (736x576), by Richard O'Brien, was created using Imagine 2.0, Vista Pro 3.0, Aladdin 4D and OpalPaint.



R O'BRIEN '93



# Handling Interruptions

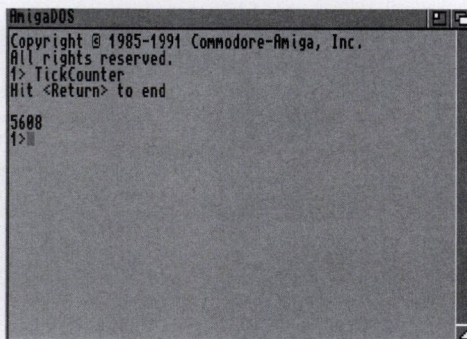
by Matthew Grove

WELCOME TO THIS issue's assembler tutorial, in which we will look at the use of interrupts within programs.

## What is an Interrupt?

It is often necessary to divert a program to perform a special function when certain hardware events occur. The hardware can send a signal, or interrupt, to the processor, which then carries out any required actions. For example, whenever a byte of data is received at the serial port, an interrupt routine must read and store the byte before it is overwritten by the next incoming byte.

Certain interrupts can only be handled by one interrupt routine (a handler), such as the serial port interrupt, but others, like the vertical interrupt, may be used by many interrupt routines (so-called servers). A vertical interrupt occurs every time video hardware finishes updating the screen - in the case of PAL, 50 times a second. This can provide a very steady timing mechanism, accurate to 1/50 of a second.



## Starting Out

How does one set up a vertical interrupt? And how are interrupts added to, and removed from, the system? Exec provides two functions for interrupt servers, `AddIntServer()` and `RemIntServer()`, which both take as input the interrupt number, and a pointer to an interrupt structure. Interrupt numbers are defined in "hardware/intbits.i", where `INTB.VERTB`, the bit number of the vertical interrupt bit used in the hardware, is defined as 5. The second parameter, a pointer to a structure defined in "exec/interrupts.i", looks like this:

```
STRUCTURE IS, LN_SIZE
    APTR IS_DATA
    APTR IS_CODE
    LABEL LN_SIZE
```

The first part of the structure is a standard list node structure, so that the interrupt structure can be inserted into a linked list maintained by Exec. A list node structure looks like this:

```
STRUCTURE LN, 0 ; List Node
    APTR LN_SUCC ; Next
    APTR LN_PRED ; Previous
    UBYTE LN_TYPE
    BYTE LN_PRI ; Priority
    APTR LN_NAME ; ID string
    LABEL LN_SIZE
```

To declare variable space for an interrupt structure with the necessary fields initialised, we can do the following:

```
interruptStruct:
    dc.l 0 ; successor
    dc.l 0 ; predecessor
    dc.b 2 ; NT_INTERRUPT
    dc.b 0 ; priority
    dc.l vertintname
    dc.l counter
    dc.l VertInterrupt

vertintname:
    dc.b "My Vertical Interrupt"
    dc.b 0

counter:
    dc.l 0
```

Let me explain the last two fields of the interrupt structure. The `IS.CODE` field is a pointer to the code to execute when the interrupt code is executed. It is important to note that this routine exists parallel with your main program, and executes under special conditions. Generally, the only system functions which can be called safely from within an interrupt are `Alert()`, `Disable()`, `Enable()`, `Signal()`, `Cause()`, `PutMsg()`, `ReplyMsg()`, `FindPort()`, and `FindTask()`. The interrupt may also overwrite the contents of registers `d0`, `d1`, `a1`, `a5`, and `a6`. The interrupt code must end in an `rts`. The `IS.DATA` field contains any material you wish passed to your interrupt, and this longword will be in regis-

ter `a1` when the interrupt routine is called. In my example, I have made this a pointer to a longword counter, and the interrupt routine adds one to this counter each time it is called.

Adding the interrupt to the system is now just a simple matter of calling the system function `SetIntVector()`:

```
move.l #5, d0 ; INTB_VERTB
move.l #interruptStruct, a1
CALLEXEC AddIntServer
```

## What Now?

Once the interrupt is added, it will be called whenever the specified event occurs - in this case, 50 times per second. In this example, the routine simply adds one to the longword pointed to by register `a1`, the value in the `IS.DATA` field of the interrupt structure. It also ensures that the value does not go beyond 10000 (200 seconds), because my integer to ascii routine only handles up to four digits.

To provide some interaction, I have prompted the user, and waited for the Return key to be hit. A small loop turns the counter into an ascii number, and another removes the leading zeros from these numbers. I then print out this string. This value indicates the number of times the interrupt routine was called, up to that point.

## Conventions

One further point should be made concerning server interrupt routines. There may be several server routines per interrupt, and, if a particular server routine detects that the interrupt was intended only for it, that routine can clear the Zero flag, causing Exec to end the server chain. Vertical interrupts, however, should always set the Zero flag to ensure that all vertical interrupt routines are serviced. Hence the `moveq #0, d0`.

Using assembler is important when writing critical code such as interrupts, because the code should execute as quickly as possible, to avoid delays to the system. If a complex task must be carried out, it is possible to use system signal procedures, so that an interrupt can signal a task to perform the action.

You will notice that I defined a couple of macros at the beginning of the example program, which simplify the calling of system functions. This feature is supported by both HiSoft's Devpac assembler, Public Domain assemblers A68k (on Fish Disk 699) and PhxAss (on Fish Disk 853), and most other assembler packages. These two macros are, in fact, defined in the standard Amiga includes, and I find them particularly useful in improving the readability and style of the source code. Earlier examples of the Interrupt and Link Node structures are also straight out of the includes and use macros to define the offsets of the fields in the structures.

Those interested in obtaining the standard includes for the Amiga should contact Commodore for further information, as they are not Public Domain. ■



## Listing 1

```

*=====
* Vertical Interrupt Counter
*=====

_LVOpenLibrary EQU -552

_LVAddIntServer EQU -168
_LVRemIntServer EQU -174

_LVCloseLibrary EQU -414

CALLEXEC MACRO
    move.l    4.w,a6
    jsr      _LV0\1(a6)
ENDM

_LVRead EQU -42
_LVWrite EQU -48
_LVInput EQU -54
_LVOutput EQU -60

CALLDOS MACRO
    move.l    _DOSBase,a6
    jsr      _LV0\1(a6)
ENDM

_main:
    move.l    #33,d0
    lea       dosname,a1
    CALLEXEC OpenLibrary
    move.l    d0,_DOSBase
    beq       _closedoslibrary

    CALLDOS Output
    tst.l     d0
    beq       nooutput
    move.l    d0,d1
    move.l    #text,d2
    move.l    #endoftext-text,d3
    CALLDOS Write

; add server
    move.l    #5,d0 ;INTB_VERTB
    move.l    #interruptStruct,a1
    CALLEXEC AddIntServer

    CALLDOS Input
    tst.l     d0
    beq       noinput
    move.l    d0,d1
    move.l    #inputbuffer,d2
    move.l    #1,d3
    CALLDOS Read

; turn counter into a string
; assume counter <10000
    move.l    #3,d2
    lea       num,a0
loop:
    move.l    counter,d0
    divu      #10,d0
    ;put remainder in word
    swap     d0
    ;turn into a char
    add.w     #'0',d0
    ;put into string
    move.b    d0,(a0,d2)
    ;put result back in word
    swap     d0
    ;remove remainder
    and.l     #$0000ffff,d0
    move.l    d0,counter

```

```

dbf         d2,loop

;remove leading zeros from string
    lea       num,a0
loop2:
    cmp.b     #'0',(a0)
    ; if not '0' then exit
    bne       exitloop2
    ;otherwise replace
    move.b     #'',(a0)+
    bra       loop2
exitloop2:

    CALLDOS Output
    move.l     d0,d1
    move.l     #num,d2
    move.l     #6,d3
    CALLDOS Write

noinput:
    ; free server
    move.l     #5,d0 ;INTB_VERTB
    lea       interruptStruct,a1
    CALLEXEC RemIntServer

nooutput:

_closedoslibrary:
    tst.l     _DOSBase
    beq       _nodos
    move.l     _DOSBase,a1
    CALLEXEC CloseLibrary
_nodos:
    rts

*=====
* VertInterrupt Routine
*=====
VertInterrupt:
    add.l     #1,(a1)
    cmp.l     #10000,(a1)
    blt.s     endofvi
    move.l     #0,(a1)
endofvi:
    moveq     #0,d0
    rts

*=====
* Data
*=====
interruptStruct:
    dc.l      0 ;successor
    dc.l      0 ;predecessor
    dc.b      2 ;NT_INTERRUPT
    dc.b      0 ;priority
    dc.l      vertintname
    dc.l      counter
    dc.l      VertInterrupt

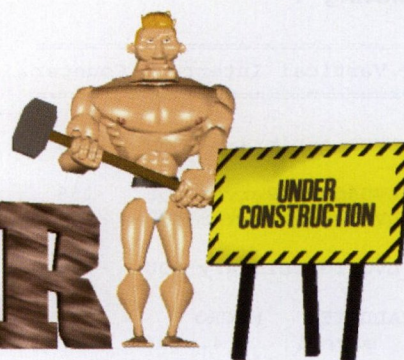
_DOSBase:
    dc.l      0
counter:
    dc.l      0
text:
    dc.b      'Hit <Return> to end'
endoftext:
num:
    dc.b      ' ',13,10,0
inputbuffer:
    dc.b      0
dosname:
    dc.b      'dos.library',0
vertintname:
    dc.b      'My Vertical Interrupt',0
    even
*=====

```



**Dudley Storey III**  
continues his  
tutorial series  
for Imagine users.

# THE IMAGINEER



OVER THE NEXT two issues, I will show you how to produce an entire animation in Imagine, from creating objects to setting up a scene, lighting and camera work. The animation is based on one of my early tests in Imagine - a silver sphere bouncing on a surface and causing a ripple, like a rubber sheet. This will serve as an introduction to three of Imagine's modules, while creating an effective animation with very little work.

If you haven't already done so, fire up Imagine now and go straight to the Project editor - choose Project/New from the menu bar on the title screen. Choose the drive and directory where the project will be stored, type the name of your project - call it BOUNCY - and hit return.

Now you'll see the screen of the Project editor. We don't have to do anything else here for the time being, so let's leave for the Detail editor. Choose Detail editor from the menu or press the right Amiga key together with the 2 key.

## Primitive Objects

Our objects for this animation are simple - just a basic sphere and a flat plane. Both are available in the Functions/Add submenu of the Detail editor. First, create the plane, the surface our ball will be rebounding from. Choose Functions/Add/Primitive, and from the list of Primitives, click on Plane. Accept Imagine's default values for the plane by clicking OK in the requester.

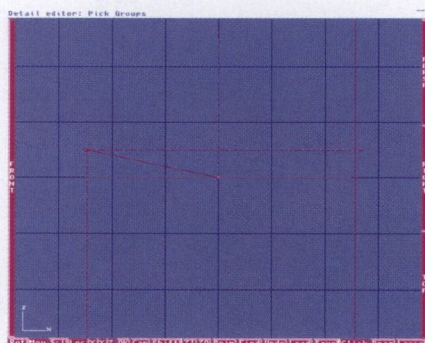
The plane should come straight up on all four views of the Detail editor. You'll notice that it hangs like a painting in front of us, which is not how we want it. So, we have to rotate it until it's flat on the ground, like a sheet.

The plane has been created, but it is not yet selected, so we cannot manipulate it. You should be in Pick Groups mode - look at the menu bar if you're confused. You can select individual objects in Pick Groups or Pick Objects mode. To pick the plane, move the cursor - the "crosshairs" - over the origin of the plane, the dot in the centre with the x, y and z axes branching from it, and click once. The plane should change colour, reflecting the fact that it has been picked. Another way of doing this is by hitting the F1 key. Basically, an object in the Detail editor is one of three

colours - "unselected", "selected", meaning that it will be the next to be picked if the F1 key is pressed, and "picked", meaning that it is ready to be transformed. The colours change depending on the preferences setup of your Imagine program, so experiment by clicking on and off the axis, until you are familiar with the states.

## Object Rotation

With the plane picked, we can rotate it. Note that you can only rotate in one direction at once manually. Take a look at the view windows. Imagine transforms objects according to what I term the "right hand rule". Hold your thumb cocked, in line with your other fingers. Now place it, palm towards you, over the front view of the plane on the screen. Your thumb should be at a right angle to the rest of your hand. Now, imagine that your thumb represents the X axis on the front view, the palm of your hand, the plane. Wave your hand backwards and forwards. You can see that if we rotate around the X axis (your



thumb), one side of the plane will come toward you, and the other will move away. The other axes work this way as well, with objects rotating "around" the selected axis.

Enough hand-waving. Put this principle into practice. With the object selected, hit the r key. The plane should be replaced by a bounding box. Imagine defaults to rotation around Z, but we don't want that. Hit x to choose rotation around the X axis instead. In the front view, hold down the mouse button and move the mouse up or down until the plane is lying flat, with the Y axis pointing up and the ANGLE readout in the top right of the menu reading 90.00. Then release the mouse

and press the space bar, indicating that you're satisfied with this rotation.

The plane is now lying flat, and the perspective view will show a single, flat line - the edge of the plane. Moving the sliders around on the perspective view will give you a better view.

Now things get a little complicated. For reasons that will become obvious later, we need the Z axis of the plane to be vertical. To rotate the axis without disturbing the plane itself, use the Shift-r key combination, and then rotate the object's axis as you did the plane, around its X axis, until Z is vertical - then press space.

## Adding Some Character

Waves from the impact of the ball will be rippling the surface of the plane in our animation, but we can enhance this effect even further. Let's add a brush to the surface that will be distorted with the wave action, similar to effects you've seen on television. With the plane still selected, hit F10 or choose Object/Attributes.

Many individual elements can be used to change an object's appearance, but we'll just take one. Click on the Brush #1 box to the right of the requester. You'll need to have an IFF picture available. Subject matter and resolution are unimportant, since Imagine will stretch the image to fit your plane. Select the IFF file in the supplied requester, and click OK.

We could apply four different brushes of four different types to our plane, but the default settings are fine. Note that we could use a sequence of brushes, such as a series of frames from an animation or captured video footage, cycling on the plane. Note also that the brush will be applied flat to the X and Z axes. If we had not played with the object's axis, this would be across the plane, rather than on its top surface. Click on Edit Axes in the brush map requester to see how the picture is applied. You may have to zoom in or out (Right-Amiga I or O) to get the full picture. See how the Z axis of the brush is cramped up against the plane? If you rendered this, the brush would appear a streaky mess. We have to scale the Z axis of the brush (use Shift-Z to enforce this restriction), then rotate it around

*Continued on page 48*



# AMIGA CD<sup>32</sup>

*From Games...*



# AMIGA 1200

*...To Graphics...*



# AMIGA 4000

 *...To GO!*

**Commodore**

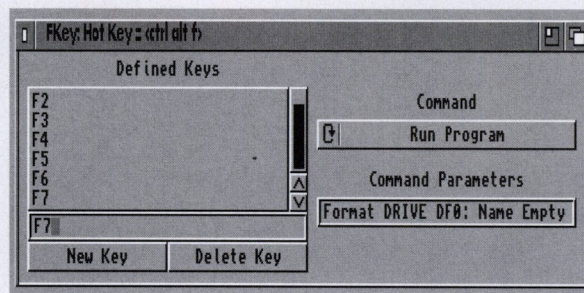
For a supplier near you, call:  
Aust. +61-2-428 7666  
NZ +64-9-274 1105





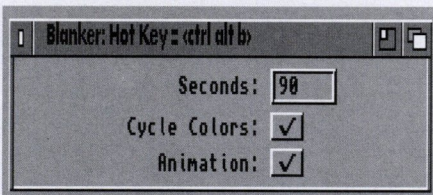
# Inside the Workbench

*Rowan Smith has the lowdown on Commodities.*



SINCE THE DAWN of the Amiga, programmers have distributed a wide range of utilities and tools to simplify computer use, by allowing users to configure various keys and mouse clicks, and combinations of the two, in order to launch applications, for example. Such programs required the complicated configuration of files which, when read by the appropriate program, would be interrupted and, hopefully, executed.

The principle by which such programs ran often resulted in interference with other similar utilities or tools, and frequent interference with mainstream applications made them



exceptionally difficult to use. That principle was based on intercepting events from the keyboard/device. Whenever keyboard or mouse events were generated, they would be captured by the utility and appropriate action taken - not a user-friendly system, when capture occurred prior to the normal intuition pathways.

Commodore soon realised the necessity of allowing programmers to create utilities and tools in a more system-friendly manner. With the release of Workbench 2.0 came the commodities.library, which allowed participating programs to "steal" input events from an input device, while still maintaining a stable system.

Along with Workbench 2.0 came several commodities which can be found in the Tools/Commodities drawer of your Workbench disk. All have tool types allowing user configuration. By single clicking the commodity and selecting Information from the Workbench Icons menu, commodities can be customised to individual needs.

## AutoPoint

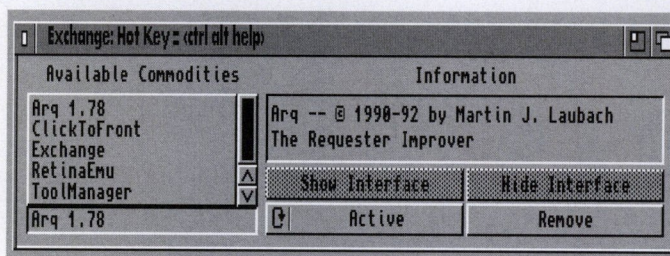
I have never found it necessary to use this tool, which allows the user to select a window simply by moving the pointer over it, eliminating the need to left click the mouse button to activate that window. I find it less than helpful, since a window very rarely has to be

active before its contents can be selected i.e., launching an icon in a non-active window only takes two mouse clicks - (one double click) - not three. The same is true of gadgets. Only one click is needed to activate a gadget, not another to activate its window. However, AutoPoint is still included in the installation of Workbench 3.0.

## Blanker

Continuous display of pictures or text on monitors for long periods of time eventually results in the "burning" of images into the screen. Whenever affected monitors are subsequently turned on, the outline of such images is clearly visible. Blankers were introduced long ago to save monitors from this fate. However, not all computer stations have been fitted with such protection. The University of Auckland's library computer system (until recently) did not have screen blankers on all terminals, and after approximately a month of continual use, outlines of the main menu were clearly evident.

Blankers can be configured to blank the screen after a few seconds (or minutes) of inactivity. They can also display a spline effect with moving lines, to indicate that the system has blanked, rather than crashed.



## ClickToFront

I find this tool invaluable. ClickToFront allows the user to bring any window to the front by any number of mouse clicks and key presses - great if you hate having to find that front-to-back gadget, which is usually obscured by some other window. I have mine configured to a simple double click.

Bringing windows to the front has never been so simple. Be warned, however, that some applications do not open windows with front-to-back gadgets, i.e., if you open one

window, followed by another within and smaller than the first, and then accidentally double click on the larger window, the first window will come to the front and not allow access to the window behind. (Of course, this is only a problem if the first window does not have a drag bar.)

## NoCapsLock

This self-explanatory tool prevents the user from activating the caps lock key. Although the light will turn on and off (controlled by hardware, not software), capital letters will only be typed if the shift key is depressed.

## IHelp

This allows the user to activate various intuition functions, such as enlarging a window, cycling to the next screen, etc. A full list of available options can be found in the icon's tool types.

## FKey

FKey allows the user to define any combination of keystrokes to be performed by pressing a function key or by pressing shift and a function key. With Workbench 2.1 or greater, the available qualifiers have been increased.

Fkey assigns the function keys to specified strings before intuition or any other application software accesses the key. If your application software uses function keys, therefore, you

should disable or quit Fkey when using that software.

## Commodities Exchange

The commodities exchange program allows the user to display and monitor all active commodities. Any program which uses the commodities.library will appear in the available commodities list view. The commodities exchange then enables the user to perform various other functions, such as displaying the commodity's user interface



(if applicable), disabling, or even killing it (removing it from memory).

## Qualifiers

A qualifier is a key which must be depressed before the desired function is activated. Valid qualifiers are Alt, Ctrl, Shift and the Amiga keys. (See accompanying table for a description of qualifiers and their codes). Qualifiers can also be used before function keys, but this is not mandatory. Any combination of qualifiers may be used, but all must be followed by a type-writer or function key. A qualifier need only be included once for any combination - a combination of LAlt RCommand LAlt F10 is the same as LAlt Rcommand F10. Other example combinations are:

Alt F6

LCommand q

Leftbutton Control CapsLock = (Hold down the left mouse button, the Control key and the Caps Lock key, and hit the Equals key.)  
 Numericpad 8 (The 8 in the numeric keypad area must be pressed. The 8 in the type-writer area will not satisfy this combination.)

Qualifier	Key
Alt	Either Alt key
LAlt	Left Alt key only
RAlt	Right Alt key only
Shift	Either Shift key
RShift	Right Shift key only
LShift	Left Shift key only
LCommand	Left Amiga key
RCommand	Right Amiga Key
Control	Ctrl key
Numericpad	Press appropriate keypad key.
Rightbutton	Hold down the right mouse button
Leftbutton	Hold down the left mouse button.

The above are the qualifier codes for Workbench 2.0. With Workbench 2.1 and 3.0, others are available, such as LAmiga (the equivalent of LCommand). Consult your Workbench documentation for a detailed list of the new (equivalent) codes.

You may activate a commodity simply by double clicking its icon. However, you will undoubtedly want most commodities to run every time you start up your system, which is achieved simply by placing the commodity into the WBStartup drawer of your Workbench disk.

## Tool Types

Several tool types affect the way a commodity opens and runs.

### CX\_Popup

This tool type applies only to programs which open a window. Adding CX\_POPOP=NO to the program's Information window will enable the program to run, but its window will remain closed.

### CX\_Popkey

Determines the hot key(s) for the program. When specifying combinations, leave a space between keys. For example:

CX\_Popkey=F9

CX\_Popkey=Shift F4

CX\_Popkey=LShift LAlt Numericpad 0

### CX\_Priority

You can assign priorities to the commodities exchange programs. This priority is only relative with respect to other commodities programs. All programs are set to a default priority of 0. If you enter a tool type changing the priority to a higher value, that program will take priority over any other commodities program. For instance, IHelp and FKey both

allow the user to assign operations to the F1 key - the program which has the highest priority will get the key first. The program then decides whether or not the key is made available to the rest of the system.

If your commodity is running from the WBStartup drawer, three other tool types can be added to assist you.

### DoNotWait

Normally, the Workbench waits for one program to return before executing the next. Placing this tool type in an icon's Information window will allow Workbench to start executing the next program, before waiting for it to return. If DONOTWAIT is not specified and the program does not return, a requester will appear on the Workbench screen, informing the user that the program has not returned, and asking whether or not to wait.

### Wait=<n>

Wait can be used to specify how many seconds the Workbench should wait before opening the next icon in the WBStartup drawer.

### StartPri=<n>

StartPri enables the user to assign a priority to a commodity, forcing it to start up before or after other commodities. The acceptable range is from -128 to 127. The higher the value, the higher the icon's priority.

With these facts at your fingertips, you should be able to configure your Workbench more effectively.

Many other Public Domain commodities are available for the Amiga - small but useful toys, such as those allowing the user to open a shell by pressing LCommand Escape.

Until next time, remember to have fun while experimenting with your Amiga and **always** modify a copy of your Workbench disk - **never** the original. ■



# Amiganuts

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THE AMIGA CODERS CLUB MANUAL. The assembly language manual. This consists of numerous tutorials and examples that cover a wide range of Amiga programming from hardware to system libraries. The manual has been integrated with the ACC assembler to allow the reader to experiment while reading - call up the assembler with the click of a button!

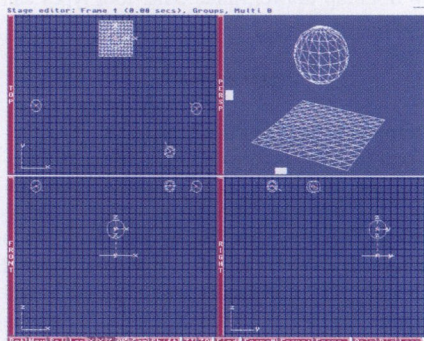
OCTAMED PROFESSIONAL V5.00. This program just gets better all the time. OctaMED PRO V5 received a 92% rating from the top selling English magazine CU AMIGA for a program of this type, which is the highest ever given for a music creation program.

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Continued from page 44

X until the Z axis is flat with the plane, as in Figure 1. Make sure the plane is enclosed in the cube formed by the axes of the brush, with a gap between the surface of the plane beyond



the brush map, and those areas will be rendered blank. Hit the space bar and click OK on the brush map and attributes requesters.

## Saving Objects

The plane is complete. Save it using Object/Save, inside the Objects directory of the BOUNCY.imp directory you created earlier in the Project editor. Actually, it's not particularly important where you save it, as long as you remember where! Personally, I like to keep my objects in directories under categories, such as aircraft, architecture, etc., so that they are available for universal use, and I keep any brushes applied to them in the original project directory.

Now we need a ball. You may recall seeing two methods for sphere creation: one in the Functions/Add submenu and one in the Primitives requester. The difference between these methods is simple. The first is a mathematical sphere, the points of which cannot be manipulated. In the Detail editor's view windows, this sphere appears as a circle, with no faces. The second is a sphere made of faces, which can be modified. Add the first kind of sphere now.

You'll notice that the sphere appears directly on top of the plane, with its centre or origin in exactly the same place. Imagine defaults to creating all new primitives at the origin of its world. You'll have to move it. Remember that your new sphere is selected, but not picked - hit F1 to pick it, then m for move, and drag it (in the front view window) until it is above the plane. Hit the spacebar to complete the move.

The easiest way to demonstrate the properties of this sphere versus the other is to scale it. It's a bit too large for the plane, so hit s for scale. We can "lock off" any of the axes so that the scale transformation doesn't affect that axis. For example, to stretch a sphere into an egg shape, hit x to lock that axis off and scale by dragging in any window.

## A Perfect Sphere

When you press the spacebar, you'll notice

that the sphere has not changed scale. This isn't a bug in the software. Imagine is simply keeping the mathematical property of the sphere. The Perspective window represents it as a collection of faces, but the sphere is actually perfect, a radius around a single point. You must scale it in all three directions at the same time, unlike the other sphere, which is a collection of points, and can be scaled, sliced, and manipulated any way at all. The advantage of our sphere is in its mathematical purity - because it is a single equation, it renders much faster. However, it can look rougher than the faceted sphere. You'll have to decide for yourself which one best suits your purposes. For now, scale the ball again, this time in all three dimensions. Make it the right scale relative to the plane.

Now we'll add some attributes to the ball. If we didn't, the sphere would be perfectly white and featureless, like a ping-pong ball. In the Attributes requester, change the colour of the sphere to Red 164, Green 164, Blue 239, the Reflectivity in each colour to around 40, the Specularity to 250 for every colour, Hardness to about 150, and Shininess to 140. Click on Texture #1, find and select the wood texture, and insert the following values, top to bottom: 180, 180, 239, 4, 7, 0.7, 23. Save the ball in the same directory as the plane.

## Quick Render

The objects are finished. To have a glimpse of what our animation will look like, we'll Quick Render the scene.

Quick Render "snapshots" the scene as it appears in the Detail editor's perspective window and renders a picture with a single default light source. In some copies of Imagine 2, Quick Render is set to render to an OpalVision or Firecracker 24-bit board. If error warnings occur when Quick rendering, such as "presets not found", you'll have to change the options in the Preferences editor.

The Preferences editor commands the look and feel of your Imagine program, and its performance. Many variables can be changed here to customise your program, but for Quick Render, we need look at only three. Look under "Misc. Stuff" for the mnemonic QUIK. Change its value in the text box at the bottom of the screen to "Laced HAM Quarterscreen". For QURM, the rendering method text should be "Scanline", and QUFF should be "RGB8-12 bit". That's all. Save your changes, return to the Detail editor, adjust the view in the Perspective window, and Quick Render the scene.

If you're happy with the look of the still, we'll move on to the animation.

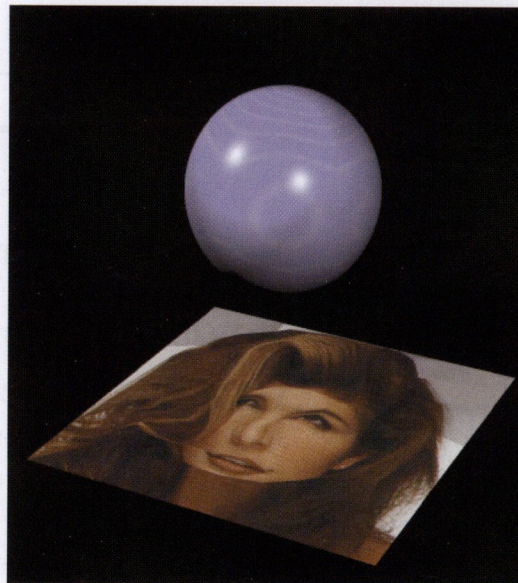
## First Animation

To produce this, we need a rendering sub-project: a sub-directory inside our Bouncy project in which to store the frames. Imagine's organisation of projects and sub-projects makes it easy to make multiple copies of an animation, each one rendered using a different method.

Go to the Project editor, select New in the Rendering Sub-Project area, type in a name - say "Test" - and hit return. A requester for the rendering parameters of your sub-project will appear. If you have the memory and speed (I'd recommend a 68030-based Amiga and at least 4 megs) you'll probably want to produce the animation in raytrace mode (TRACE), using INTERLACED HAM (in the Presets requester of the Pixel and Picture Size area). With that, we can move to the Stage editor, where we will create our animation.

Load the objects you have created - the ball and plane - into the Stage editor. They should appear as you saved them from the Detail editor. In the Display menu, choose Camera View. The perspective from the camera (the line emerging from the double sphere "body" of the camera indicates the direction of view) will appear in the Perspective window. This is the scene that would be produced if you saved the set-up you have now and rendered it in the Project editor. Since it probably isn't exactly how we want it to appear, you must move the camera around, just as you did with the sphere in the Detail editor, to frame the scene until it appears something like figure 2. Pressing the spacebar after the move will automatically update the perspective view. Move and rotate the camera until you're satisfied with the shot. You should also be aware that you can scale the ball and plane in the scene, if you're not happy with their size. You'll have to add lights (Objects/Add/Lightsource) - otherwise the scene will be completely black. Try to restrict your lighting to one or two well-placed spots - more lights increase the workload of Imagine during the rendering phase. Save the changes you've made.

Unfortunately, that's all we have room for in this column. Next issue will include the completion of this tutorial, with wave effects and an introduction to the Action editor. Experiment with what you have, and keep Imagineering!



Frame 22 of the completed animation - Cindy Crawford in peril..





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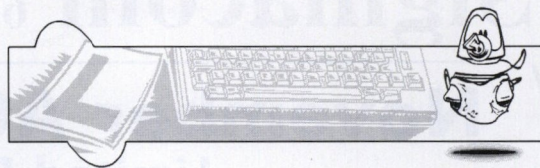
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# FIRST STEPS



*Peter Moosberger lays bare the intricacies of software installation*

WELCOME TO ANOTHER feature article aimed at helping you operate your Amiga more effectively.

This issue we look at the subject of

## Installing Software

Be it to floppy disks or hard drive, installation of software can be defined as the process of preparing a software package to run in a computer.

Although the procedures involved in installation of different programs will vary, the desired result is always the same - an efficiently-running machine and software combination. With any software, it's highly likely that there will be many variations to the way it may be installed and yet still have the application run. The trick is to install it the way the software developer would, given your particular hardware. Once it has been properly installed, you, as a user, can set about learning to harness that combination.

## The Easy Way

Many modern packages come with special installation or setup software, enabling the installation of the package to proceed with minimal user input. Typically, files will be copied from the package diskettes to the hard drive, decompressing if necessary. The user may be asked to identify the types of devices attached, so that appropriate drivers for a particular display, printer, etc. can be linked in. One can often specify the directory or directories to receive the files. The program may also request certain identifying details in order to, for example, customise the application's startup screen. This is the automated or semi-automated approach.



One way to tell if it's going to be "the easy way"...

## The Hard Way

However, often the process must be accomplished more or less manually, with dubious help from poorly-written documentation. The trickiest processes are those involving a degree of customisation within the installation software. Until you develop a knowledge of your machine beyond the beginner level, avoid choosing the "custom" or "user specified" installation options. Go for the "express"

whether this is the case. Under these circumstances, you have no option but to "risk" the original disks.

Installation can be conveniently divided into two main types.

## 1. Floppy Disk

This involves the setting up of one or more floppy diskettes that will contain all the necessary files for smooth running of your applica-



The customised "Install" program from Commodore standardises software installation

or "standard" types. Even if you are prompted for information to be entered, generally there is a default value or action built in, so simply press <RETURN> or <ENTER> to proceed. A good tip to follow with a new installation is to jot down each prompt, together with your response. You will then have background notes, should you need to re-install your program in the event that it did not run correctly.

The crucial thing to emphasise at this point is that the original package diskettes are precious. Treat them with respect, reserving them for one task only - to make a set of "work disks". Before doing anything else, write-protect the originals and make a copy of them.

Put the originals away safely. Now protect the copy disks. Use these "work disks" to proceed with installation. The foregoing discussion refers to the usual, albeit ideal, case. Of course, in some instances you will be unable to make a backup set, due to the developer's inherent copy protection - your documentation should indicate

tion. It may or may not include setting up a separate data disk, destined to carry files you eventually create when using your installed software.

Note that interest in floppy disk installation need not be restricted to those with floppy disk-based Amigas. On the contrary, there are occasions when users of hard drive models may want to install to floppies. Be aware, however, that there may sometimes be no choice in the matter. Some software - in particular, many games and entertainment / recreational software - comes on "ready-to-use" disks with copy inhibit protection, the data on which cannot be installed to your hard drive (or, normally, even copied to a backup i.e., disk-copied). In this case, the only "installation" you will have to do is write-protect the disk (unless the instructions ask specifically that it be left write-enabled for, say, score writing), and slip it into a drive. Sometimes a master disk has to be in a write-enabled state for the first session only, allowing registration and user details to be saved on to it. If this is so, make sure you protect the disk as soon as this has occurred.



Reasons why you may elect floppy disk installation, even though your Amiga has a hard drive fitted, include:

- ◆ Conserving hard drive space. If you use the software only occasionally or on a trial basis, you may not want to commit precious hard drive space for it.
- ◆ Using the software with a different operating system configuration. Some software requires that it be used under special, non-standard, operating conditions, in which case you may have to install to floppies. In other cases, you might elect to set up a special Workbench operating environment, thereby specially customising your program's abilities. Installing to floppies allows the flexibility of having different operating environments for particular purposes, so that you can enjoy operating the software under your own individual conditions. That way you can leave your hard drive operating environment set up to cater for an everyday standard "look and feel", and use your floppy-based programs for other tasks requiring specific conditions.

## Drawbacks

One of the main drawbacks of using software installed on floppies is, of course, the relatively slow access and data transfer speeds and, for this reason alone, you may prefer to install to the hard drive. Another drawback is the possibility of frequent disk-swapping. You will realise that modern software files are often quite large and there may well be many making up your application - hence the need for multiple disks. Except for those with the very latest specialist models (which, incidentally, will have good-sized hard drives), the vast majority of us will be using machines with drives formatting to 880K capacity ("double-density"). Dual floppy drives are virtually essential for any sort of "sane", disk-based operation and a third is preferable. You can then dedicate one of the drives to your data disk and the other(s) to program disks.

## 2. Hard Drive

Those using machines with a hard drive will normally have the option of installing to that drive. This will yield the fastest access and speediest operation of your software, because the data transfer to and from a hard drive is so much faster than that of floppy disks.

The following is a summary of common installation scenarios you could encounter, together with suggested generalised instructions. Be sure to consult the package documentation for specific details and follow them carefully.

### Copy Protected And Non-Installable Floppy

Usually games software. Simply write-protect and go for it!

### Installable Without Setup Program (For Floppy System)

- ◆ Write-protect the originals.
- ◆ Make a work set and rename disks to original names.
- ◆ Write-protect the work set.
- ◆ Boot with separate Workbench disk or with disk 1 of your work set. If you are requested to insert a named disk into the drive and you believe that that disk is already inserted, the odds are that you have either neglected to rename the disk at all, or that you have renamed it incorrectly.

Note: This was what caused endless frustration amongst Amiga 500 beginners eager to get cracking with the popular word processor

```
Copy DF0:Unfriendly SYS:
Copy DF0:Unfriendly.info SYS:
Copy DF0:Libs/massive.library Libs:
Copy DF0:L/board-handler L:
Copy DF0:Devs/highspeed.device Devs:
```

```
MakeDir SYS:Uf_Data
Copy DF1:Uf_Data/#? SYS:Uf_Data
Echo "Done"
```

Here's an example of a "hard way" installation script

Kindwords. Those prudent enough to make a work set to safeguard their originals had the program requesting the original disk each time they started work. What was the point of using a copy if the original needed to be presented each time, they correctly wondered. Many ended up resorting to the original for everyday use. At least it worked! The problem stemmed from failing to realise that the work set disks were renamed during the copy routine (copy\_of.Kindwords etc.). So much for easy-to-use, entry-level software! Exactly the same problem arose with the A500+ PC complete range of entry-level software, notably PC Write. So now you know.

### Installable Without Setup Program (For Hard Drive System)

- ◆ Write-protect the originals.
- ◆ Make a work set and rename disks to original names.
- ◆ Write-protect the work set.
- ◆ Create a drawer with appropriate name on your hard drive.
- ◆ Drag program and associated file icons from the work set on to the new drawer. This action copies the files on to the hard drive. Remember that you can drag multiple files by holding the shift key down.
- ◆ You may need to drag certain system files into other directories on the hard drive, e.g., the fonts drawer must sometimes be copied to the fonts drawer in the root directory of the hard drive's system partition.
- ◆ So far so good. Now for the trickier bit. The developers will probably have set up the bootable floppy disk so that it runs properly on a floppy system. You must tell

your hard drive system where the application resides on that disk. This involves re-assigning the device pathname from the floppy disk pathname to the one on the hard drive. The relevant file to modify is the startup-sequence which resides in the S drawer on the hard drive. You can use any Text editor (or word processor), but ensure that you save the modified file as ASCII (plain text format). You will need to insert one or more assign lines, generally following any existing assign lines. The syntax is of the form -

**assign floppyname harddiskpath**  
for example:

**assign Kindwords: DH0:Kindwords**

### Installable With Setup Program (For Floppy Disk System)

- ◆ Backup your originals as previously described.
- ◆ Have some blank disks handy. These will be used to receive the files from the installation disks to become your application work disks.
- ◆ Insert the backed-up installation disk and open its window. Locate the icon appropriate to floppy disk installation (or just installation, if there is no special floppy disk installation icon), and activate it. The setup program is an automated script file which should take you through the installation.
- ◆ You must follow the instructions of the various script and system requesters that appear. Sometimes you may find that requesters appear and vanish on their own. You need only respond if a requester does not disappear and the installation is temporarily suspended. Observe the various drive indicator lights during progress - these will indicate the various read and write sequences and, together with screen information, will assist you to manage progress properly. Note down the prompts and your response, so that you can establish a basis for possible changes, should you have to redo the installation.

Normally, you will end up with a bootable application work disk and, possibly, other non-bootable disks to be used in combination with it.

### Installable With Setup Program (For Hard Drive System)

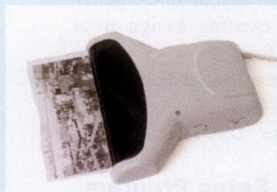
The procedure is essentially the same as for floppy disk installation already described, except that you should look for a specific hard drive installation icon to kick things off. Of course, you won't need the blank floppies referred to above. You will have to respond to questions about where you want the application installed. Unless you have a preference for particular drawer names, it is safe and easy to respond positively to the default settings offered by the setup program.

Best of luck!



## Pyramid Hand Scanner

How many rollers does the Pyramid have?



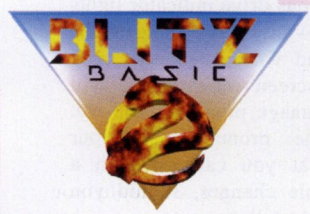
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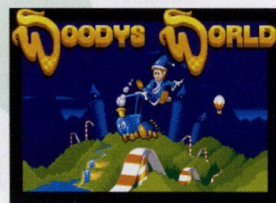
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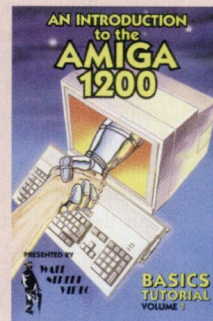
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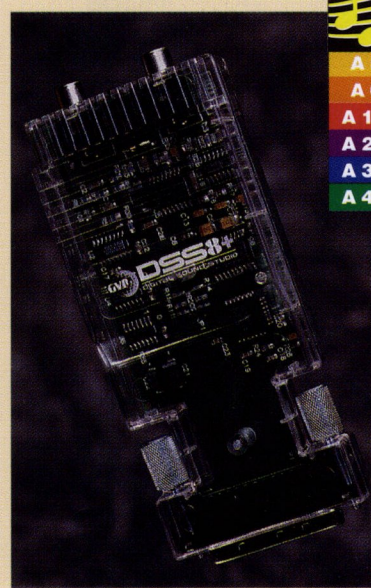
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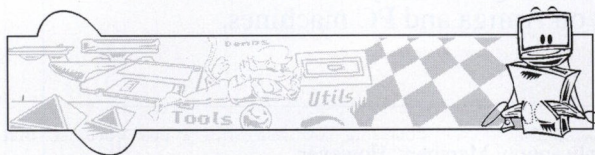
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**Thomas Scovell** takes a further look at the latest and greatest PD available.

WELCOME AGAIN TO the wide world of Public Domain. This issue I take a further look at the latest and greatest available in New Zealand and Australia.

## Reviews

### Aerotoons Compilation Amiganuts AUA546-547

The name of Eric Schwartz will be familiar to most Amiga animation freaks. His demos are some of the best examples of the genre on the Amiga and new ones are not to be missed. This is not a new demo from Eric, however,



but a compilation of his "Aerotoon" cartoons - a double-disk demo, consisting of a front end which accesses seven different animations, simply by pressing the corresponding function keys. The demos are all humorous, ranging from the antics of two space shuttles in "ShuttleCock", to a fight between two planes in "Stealthy Maneuvres". If you have seen all the demos before, this may not be much of an addition to your collection, but for those who want to catch up on Eric Schwartz's animations, this is a good buy.

Rating ..... 8/10

### PhantomWare Slideshow1 Great Value PD ASL114

This is the first slideshow by Tim Symonds released under the label of Phantomware. The pictures are all hand-drawn cartoons of char-



acters from Warner Bros Cartoons - Bugs Bunny, Daffy Duck, Porky Pig and many more. The artwork of the cartoons is well captured, with nice use of colour. In the accompanying text file, the artist indicates his intention to follow science fiction and horror themes for the next releases, including Judge Dredd and Doctor Who. If the art is of similar quality to this slideshow, they should be something to look forward to.

Rating ..... 7/10

### VMorph2.3 Great Value PD ADP101

The morphing technique has come to public attention recently with *Terminator 2* and Michael Jackson's videos. Several commercial morphing programs have been released for the Amiga, but VMorph appears to be the first PD morpher. What exactly does VMorph do? It allows you to create anims where the first frame is morphed or warped into the last frame. As the author explains, the difference between a morph and a warp is that a morph changes individual pixels from the first frame to the last, whereas a warp merely uses the last frame as an outline and bends the shape to that over several frames. This makes the morphs more spectacular, but they take more frames and computing time. With a 999-frame limit (memory permitting), this, however, is no problem. One major restriction with VMorph lies in the fact that it caters only for lo-res, 16-colour pictures - any others must be converted to this format before being used. The other requirement is that your machine must have 1 Mb of memory or more. Included with VMorph are several pictures to experiment on, as well as several example animations. A great way of achieving amazing effects for little cash outlay.

Rating ..... 9/10

### GVPD Catalogue Disk Great Value PD

This is the catalogue disk of a new NZ PD library and it's pleasing to see that it's all homegrown. Upon booting, a small demo loads up which plays a piece of music while displaying text and VU meters. The catalogue then loads up, in the form of pages of text which you can move through by pressing various keys. The text ranges from an editorial to PD reviews and info on how the disk was cre-

# KING o f t h e PUBLIC DOMAIN

ated. Also included is the Libraries Catalogue, which can either be viewed on screen or printed out. Finding programs is relatively easy and moving through the text quite painless. A good diskcat, with the extra text adding depth to the contents.

Rating ..... 8/10

### "The Beach" Anim CyberCraft PD 129

Rather than being a traditional animation, this disk contains what could more accurately be described as a moving picture. Instead of putting together many frames and playing them in sequence to create the animation, the author has produced a static picture containing many miniature animations. In this case, the static picture is a beach scene and mini animations include a "Punch and Judy" show, a plane flying by and a weightlifter. The technique works well and extends the length of the animation, as you find yourself scouring the screen for more animated activity. But, in the end, it's merely a picture, and, unlike a full animation, you don't feel as if you've been anywhere. Evidently, the author of this disk has produced others using the same technique. It seems likely that they would be more suited to younger children, but for those interested in the technique, this disk could be worth a look.

Rating ..... 6/10

### ABase Amiganuts AUA710

As far as commercial databases go, the Amiga boasts nothing astounding, and, more often than not, a PD alternative is acceptable. ABase is one such alternative, and also one of the many programmed in AMOS. It appears very much like one of its commercial rivals, with a selection of video player style control icons, which enable you to move easily through a database, finding required entries. Other features of the program include



word search, password access, pictures and more. They are all easy to use and making a database is simple. Also included with ABase are two other programs. Trivia Conquest is a two-player game, involving answering questions from database made in ABase. Players take turns answering questions. Each right answer entitles a player to take a country from the world map, and the winner is the player with the most territory - not only an excellent educational tool, but fun. The other utility is a program which converts other database formats into ABase format. Unfortunately, however, only a couple of other Amos PD databases are supported, so it is of little use. If you are looking for a good solid database and don't want to pay the earth, ABase is certainly worth a try.

Rating ..... 8/10

### Amy PD Review July '93 CyberCraft PD APDR4.1

This fourth issue of the New Zealand Disk Magazine has had a face lift. The user interface is now extremely user-friendly, allowing you to browse at random, or go straight to the article you want with ease. This issue, the magazine focuses on disk magazines, with several overseas reviews, as well as miscellaneous programs. All reviews are greatly detailed and include numerous snapshots. Also included are a few general articles and letters to the editor, resulting in plenty of reading. For a good, in-depth look



at disk magazines and an entertaining read, APDR is great.

Rating ..... 9/10

### Amiganuts Catalogue Amiganuts Cat 001

This is merely an update to the review of Amiganuts Catalogue in last issue. They have now changed the front end and updated it with their newest disks. The old front end was great, but this new one is even better. It uses 2.x style gadgets and allows you to easily view the catalogues and search for disks. It also has options to display pictures, run programs and play sound modules, making it more like SID than a disk cat! As far as disk catalogues go, this is one of the best.

Rating ..... 10/10

### Diskode v1.0 Amiganuts AUA548

A Public Domain disk copier is certainly nothing to shout about. I decided, however,

that Diskode was sufficiently different to warrant a review. What makes it stand out is its ability to encrypt disk - i.e., instead of doing a straight copy, you are given the option of encoding the disk with a password, so that only someone knowing the password can decode it. An encoded disk appears on the Workbench as a non-DOS disk, so you must decode it with Diskode to access it. This is primarily useful for protecting information from prying eyes and, as such, it works well. Encoding, decoding and copying are all done through a window utilising various gadgets. Unfortunately, Diskode requires two drives to copy, making it useless to single drive users. Other than that, there is little that can be faulted. Diskode does its job easily and what more can be asked of a PD program?

Rating ..... 7/10

### A Big Box Of Chocolates To...

Thanks for supplying PD for review this issue go to "Amiganuts Australia", "CyberCraft PD" and "Great Value PD". The latter is a new library and I'd like to welcome them along and wish them good luck. If you'd like a copy of their catalogue, send a disk and SAE to - Great Value PD, PO Box 80, Waihi 3061, New Zealand.

That concludes this issue's PD column. If you have any suggestions or PD for review, please contact: Thomas Scovell C/- ADU. Alternatively, leave a message for me on Pipeline BBS (NZ) or The Connection BBS (AUS).

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# UMAX

Scanners for the AMIGA



Most 3D images seen on TV and in movies aren't raytraced at all - they're scanlined. **Dudley Storey III** checks out a leading contender in the scanline rendering arena...

## Caligari Broadcast

CALIGARI HAS MADE a name for itself as a very expensive Amiga 3D animation program with an excellent interface. Growing through various incarnations as Calagari, Calagari Pro, Calagari 2 and Calagari 24, the latest 3.1 version, Calagari Broadcast, has recently been released by Octree.

### Go To Manual

Caligari's thick manual is solid, but oddly paced, as though the writers tried to cater simultaneously for experienced users and new buyers. Instruction is through tutorials (containing a few errors), and indexed functions with practical examples. Since, as they claim, Caligari Broadcast is a major revision, it might have been better to assume an equal level of ignorance for all buyers and start at an easier pace.

Caligari's reputation lies in its intuitive, open-ended interface. Avoiding the orthogonal, modular setup of Imagine and many other 3D programs, Caligari instead presents the user with a world viewed through a single window on-screen. The flat grid, invisible in the final rendered images, gives an immediate sense of space and scale.

The writers of the manual have been unable to resist throwing in virtual reality comparisons for Caligari's interface, but that's almost allowable with such a slick system. You can fly around the "world", zoom in and out, or scale it, all in real time. In this mode, the

screen view is the view of your "eye" or camera. Three menu buttons also project set-up views of the scene from the top, front and side. The only area of confusion lies in the physical limitations of the mouse - you hold down the left mouse button for movement in the X and Y axes, right for Z, and both for proportional action. With five, possible, different terms of reference - world, screen, or object axes, eye or selected object movement - orientation to the mode to be manipulated can be difficult.

Caligari's menus are also unlike those of most other 3D packages. Instead of the familiar "pull-down" action, menus are "stacked" at the bottom of the screen. Since Caligari remembers your selection of menus, customised configurations are possible. It's also very handy to have every function immediately available for use.

### Getting Objective

Caligari's installation delivers a good range of example objects. Object construction can be made "by hand", i.e., point by point, in the Extruder/Lather, or from a selection of eigh-

teen primitives, including plane, cube, sphere, cone, pyramid, tube, bullet, and bisected versions of these objects. There is no control over the subdivision or number of points these primitives will contain.

Colour textures can be applied to objects, with five different mappings - default, planar, sphere, cylinder, and wavy. Caligari has its own texture format, and converts IFF24, DCTV or Vista pictures. Unfortunately, that means duplicates of often very large picture files. Bump mapping is not supported, and an object can only carry a single texture.

While Caligari does not support morphing per se, its manipulation of objects, using free-form lattices, is very powerful. Free-form deformation, or FFD, is most easily compared to moulding an object, as if it was made from wet clay. Any object can be surrounded by a spherical, cylindrical or rectangular mesh, broken into smaller facets for finer detail, and then pushed, squeezed and stretched into a new shape. This process was probably used to create the T2 object in the picture above.

Caligari Broadcast now extends this process into animation. By constructing keyframes of an object's deformation, a kind of morphing can be interpolated and animated. Octree programmers have been very big on a "point and click" interface. Move the cursor over an object, click the right mouse button twice, and it's selected. No keystrokes are necessary for manipulation or deformation. Multiple selections can be made from requesters, such as loading objects or adding primitives, before choosing "Done" for Caligari to insert the objects into its world-space.

### Can You Say Jump?

Caligari logically divides the process of creating a 3D animation into two separate modules - the Object editor and the Scene editor. Rendered pictures and animations are produced in



Image supplied by SigmaCom

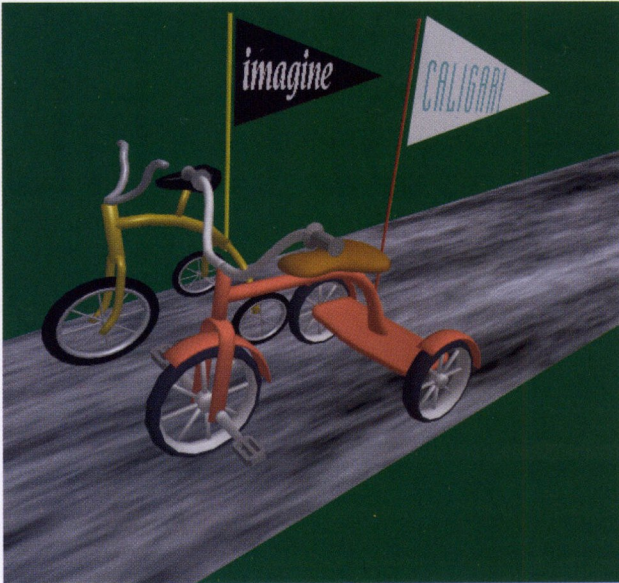
Caligari by Octree Software  
Image by Paul Safr



Caligari Broadcast's interface employs stackable menus, similar to those in Brilliance, which allow control over Object modelling (top) and Scene creation (above).



## Regrets and Bonuses



the Scene editor, although the Object editor does have a preview mode - Quickrender displays the object in solid geometry, which can be printed out (a nice touch). From within Quickrender, the user can also interactively change the colour of an object, using CMY, RGB or HSV palettes. Feedback is immediate.

During rendering, Caligari writes temporary scratch files to the hard disk, a process which makes me uncomfortable. However, if you have more than five megs of RAM, you can change this option to write to a RAM disk.

Octree has simplified Caligari's animation process. Scripts no longer need to be edited to describe animation actions. You can stretch the action between frames, and accelerate or decelerate motion between keyframes.

### Let There Be Light

Lighting has been improved over earlier versions of Caligari. Light sources are now physically represented in the Scene editor, and can be manipulated like any other object. I particularly like the spotlight graphic, which immediately shows the direction and spread of light from the source. Infinite and local lights are also supported, and Caligari Broadcast adds a tracking function, so that the lights or camera can follow an object.

The manual repeatedly stresses that Caligari is not a raytracer, but that BRender can produce simple shadows and optical effects. Objects can also reflect the properties of an environment map, or blur with motion.

### Opening Up

Caligari offers the greatest format compatibility of any Amiga 3D program available. The rendering engine supports AGA and many framebuffers, including OpalVision, Harlequin, Vista and Targa, and multiple rendering algorithms for final output - ZSort, ZBuffer, and BSP. Different shaders can be applied to separate objects in the same scene, including Phong, Flat, Gouraud and Metal.

The Object editor imports and converts Videoscape, LightWave, Sculpt3D, and Imagine objects, along with popular IBM and workstation formats - AutoCad DXF, Wavefront and AutoDesk 3D Studio. For saving objects, the options are limited to Caligari, VideoScape and LightWave protocols.

### Getting Transported

The Transport Controller appears to be the only major feature separating Caligari Broadcast from its smaller cousin, Caligari 24, besides general bug fixes. Those without a single-frame BCD or VLAN video, and uninterested in transferring their animations to tape, would be advised to look at this cheaper option.

No program can cover all the bases. Caligari sorely lacks a font importer which extrudes letters into objects. Instead, you must design your own, or import pictures of text to trace over by hand. Objects can be hinged or "glued" to each other, and keyframes are supported in the Scene editor, but Caligari lacks the complex object associations of Imagine's Cycle editor or Real 3D's inverse kinematics.

Memory-hungry (you need more than six megs to run it effectively), the program does not allow multitasking. The keystroke layout for some functions is counter-intuitive - "z", for example, selects or de-selects the X axis. You cannot perform Boolean operations (e.g., drilling a hole through a sphere).

On the plus side, Caligari has a great interface, and is very fast. Octree claims that the rendering engine, developed by Turner Whitted, is up to 20 times faster than that of the competition. Those needing a 3D visualisation tool, without the hyper-realism delivered by a raytracer, should take a serious look at what it has to offer.

Despite its faults, Caligari's reputation can only improve. Not only has it kept the same intuitive interface which earned it its name, but Octree have marketed it in a realistic price bracket, to compete with programs such as Real 3D v2 and the forthcoming Imagine 3.

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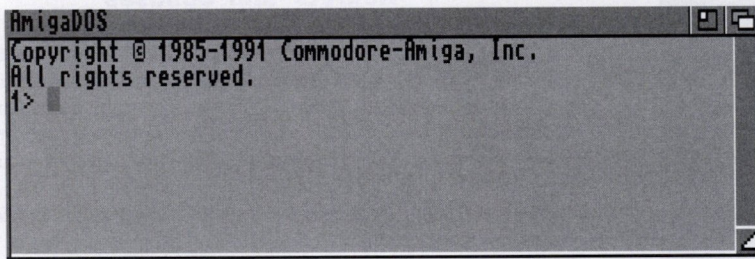
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*Jarno van der Linden describes how the Shell makes decisions in a script.*

LAST ISSUE WE looked at writing a simple script, and the various ways of executing it. We also came across the 'IF' command. This time we are going to take a closer look at this, and other commands which control the flow of a script.

### Safe Scripts

Scripts are executed from top to bottom. The first line is read, the commands in it executed, the second line read, executed, and so on through the document - all very well if you simply wish to automate a sequence of commands. But what if the script has to do different things under different circumstances? For example, what to do if a script expects a file to exist, which doesn't? This could produce all sorts of strange error messages. Another potential pitfall lies in using a script to delete material. It is always a good idea to ask the user if he/she is really sure about deleting a file. The script then has either to quit or continue, depending on the outcome of a yes/no question.

'IF' decides whether or not to execute a command. Open up a shell window (double click on the shell icon), and type 'IF ?' (without the quotes of course, and, as usual, case is not important). You should now see the various options of 'IF':

NOT/S, WARN/S, ERROR/S, FAIL/S,,  
EQ/K, GT/K, GE/K, VAL/S, EXISTS/K:

Don't worry about /S and /K. The others are important. Differing versions of Workbench will dictate the options available (WB 1.2, for example, will not have the GT, GE, and VAL options). This article assumes the use of WB 2.04.

### About the Examples

At the top of most of the example scripts are the following three lines:

```
.KEY arg1,arg2
.BRA {
.KET }

; example code goes here...
```

Remember, .KEY defines the arguments, .BRA and .KET define what symbols to use to reference those arguments. Note also that the semicolon indicates the rest of the line is a comment and should be ignored by the Shell. A script called 'MyScript', for example, is executed from the Shell as follows:

```
EXECUTE MyScript foo bar
```

where 'foo' and 'bar' can be replaced by anything you like.

### Equality

The EQ option was briefly discussed last issue. It simply checks whether the thing stated before it is equal to the thing stated after it. For example:

```
.KEY arg1,arg2
.BRA {
.KET }
IF "{arg1}" EQ "{arg2}"
    ECHO "The arguments are
equal."
ELSE
    ECHO "The arguments are
not equal."
ENDIF
```

This can be read as follows: IF arg1 is Equal to arg2, then say they are equal, ELSE say they are not. The double quotes ensure it doesn't choke on arguments containing a space. 'ENDIF' tells the Shell that this is the end of the IF block. As we saw last time, this can be used to check if an argument is given:

```
.KEY arg1,arg2
.BRA {
.KET }
IF "{arg2}" EQ ""
    ECHO "You must supply two
arguments!"
ENDIF
```

The NOT option reverses the outcome of the IF command. For example, the following script will do exactly the same thing as before, except that now it reads:

# SHELL SHOCKED

IF arg1 is NOT Equal to arg2, then say they are not equal, ELSE say they are.

```
.KEY arg1,arg2
.BRA {
.KET }
IF "{arg1}" NOT EQ "{arg2}"
    ECHO "The arguments are
not equal."
ELSE
    ECHO "The arguments are
equal."
ENDIF
```

### Greatness

Next on the list is GT, which stands for Greater Than. It checks if one thing is greater than another and is used in exactly the same manner as EQ, for example:

```
.KEY arg1,arg2
.BRA {
.KET }
IF "{arg1}" GT "{arg2}"
    ECHO "{arg1} is greater
than {arg2}."
ELSE
    IF "{arg1}" EQ "{arg2}"
        ECHO "{arg1} is equal to
{arg2}."
    ELSE
        ECHO "{arg1} is smaller
than {arg2}."
    ENDIF
ENDIF
```

Notice that within the IF block, there is another IF block. The second IF block is said to be nested. (Those familiar with the concept might be interested to know that there is no ELSEIF command). Each block must be closed with an ENDIF. The script first checks whether the first argument is greater than the second argument. If not, two possibilities remain: either they are equal, or the first argument is smaller than the second. If they are not equal, the 'smaller than' case is the only alternative.

One further option, GE - which stands for Greater or Equal - is a combination of the EQ and GT options. As an example:



```
.KEY arg1,arg2
.BRA {
.KET }
IF "{arg1}" GT "{arg2}"
    ECHO "{arg1} is greater
than {arg2}."
ENDIF
IF "{arg1}" EQ "{arg2}"
    ECHO "{arg1} is equal to
{arg2}."
ENDIF
IF "{arg1}" NOT GE "{arg2}"
    ECHO "{arg1} is smaller
than {arg2}."
ENDIF
```

Since NOT GE means 'NOT Greater than and NOT Equal to', it effectively checks for 'smaller than'.

In experimenting with the above examples, you might have noticed that you can enter letters and words as arguments. Use the last example in the skeleton script, and execute it from a shell as follows (assuming the script is called MyScript and is in the current directory):

```
EXECUTE MyScript David Goliath
```

And out will come:

David is smaller than Goliath.

How can this happen? The IF commands are actually equating strings. Just as 'Jones' comes before 'Smith' in the phone book, so 'David' comes before 'Goliath', i.e., David is smaller than Goliath. Case is not considered, so 'David' is equal to 'david'. The same happens with numbers. Numbers are first converted to strings, then equated. Numbers are defined to come before letters. So 'b1ff' comes before 'biff'. But this can give rise to a small problem. Consider the numbers -1 and -2. These are first converted to strings, and then equated. It looks at the first characters of the strings, which are equal. It then goes on to the second characters, just as you would in sorting names. It sees a '1' and a '2'. As '1' comes before '2', the script will tell you that -1 is smaller than -2, which is of course mathematically incorrect.

Somehow we have to convince 'IF' that '-1' and '-2' are actually numbers and not strings. This is done using the VAL option:

```
.KEY arg1,arg2
.BRA {
.KET }
IF VAL "{arg1}" GT "{arg2}"
    ECHO "{arg1} is greater
than {arg2}."
ENDIF
IF VAL "{arg1}" EQ "{arg2}"
    ECHO "{arg1} is equal to
{arg2}."
ENDIF
IF VAL "{arg1}" NOT GE
"{arg2}"
    ECHO "{arg1} is smaller
than {arg2}."
ENDIF
```

This reads as: IF the VALue of arg1 is Greater Than the value of arg2 then etc. etc. Note that VAL tries to convert all strings to numbers. It will convert all non-numbers to zero. So using VAL, 'Jones' becomes equal to 'Smith', as both are changed to zero. Note also that VAL acts on the whole line, not just the first argument.

The EXISTS option is totally different. It checks if a given file exists - particularly useful if your script deals with files. Very confusing things can happen if you are trying to use a non-existent file. Here is a simple example:

```
.KEY arg1,arg2
.BRA {
.KET }
IF "{arg1}" NOT EQ ""
    IF EXISTS "{arg1}"
        ECHO "That file exists."
    ELSE
        ECHO "Hmm, I can't find
{arg1}."
    ENDIF
ELSE
    ECHO "I need a filename to
work!"
ENDIF
```

The last option for 'IF' we will look at is WARN and its associated command ASK. A command or program can set one of three flags if problems occur - 'WARN' (which indicates the problem was minor), 'ERROR' (more serious), and 'FAIL' (the command totally failed). These flags can be checked by 'IF' using the WARN, ERROR, and FAIL options. One of the most useful examples is with the 'ASK' command, which asks the user a question and expects a 'yes' or 'no' answer. If it receives a 'yes', it will set the WARN flag. So we can use it like this:

```
ASK "Are you happy (y/n)?"
IF WARN
    ECHO "Me too!"
ELSE
    ECHO "Cheer up!"
ENDIF
```

A more useful example would be to ask the user if that very important file really has to be deleted, and do so only if the user answers yes.

A small trick comes into play with the use of words, numbers, or other facts a script may require. The command 'SET' sets a variable, which acts like an argument to a script. The usual way of using 'SET' is:

```
SET variable string
```

Let me go straight to the trick and explain it afterwards:

```
SET >NIL: file ?
```

What it does is attempt to set the variable 'file' to something. The question mark tells

SET to go into an interactive mode. This mode will ask the user for the variable name (which is already given), and its value (which the user is about to give). The '>' is an output redirection. It redirects all the output of the SET command to somewhere other than the screen - in this case 'NIL:'. This is not some sort of hidden disk drive, but more like a black hole - nothing that goes in ever comes out. It vanishes. So now SET will be sitting there waiting for the user to enter something without telling the user to do so. This is very useful as we can supply our own request by using 'ECHO NOLINE', which types a command to the screen without going to a new line. When the user has entered something, the variable 'file' is set to it. Now we reference that variable, using the '\$' sign in the same way as curly brackets are used with arguments. The following example will clarify this:

```
.KEY arg1,arg2
.BRA {
.KET }

SET file ""
IF "{arg1}" EQ ""
    ECHO NOLINE "What file: "
    SET >NIL: file ?
ELSE
    SET file {arg1}
ENDIF
IF "$file" EQ ""
    ECHO "You didn't select a
file."
ELSE
    ECHO "You want a file
named $file."
ENDIF
UNSET file
```

First, we set the variable 'file' to an empty string, then check if the script has been given an argument. If not, we ask for one. In any case, the variable 'file' is set to what the user wants. The first line ('SET') is needed as an unset variable doesn't exist, and Shell will think of \$file as being exactly that - the string '\$file' instead of nothing. The last command, 'UNSET file', is just to clean up when we exit - good practice, since variables can remain intact when the script exits, unlike arguments. This can cause confusion if the script is run again, or even with another script which happens to use the same variable.

### What Next?

You should now know enough commands to make some pretty powerful and useful scripts. For further examples, look in the 's' directories of your various Workbench disks. They contain all sorts of interesting scripts which make use of the methods discussed above. However, make sure you don't change anything, as some of those scripts are vital to loading up the Workbench. ■



Looking for PC-XT emulation without a pricetag? **Tom Baw** checks out a cheap but effective software solution...

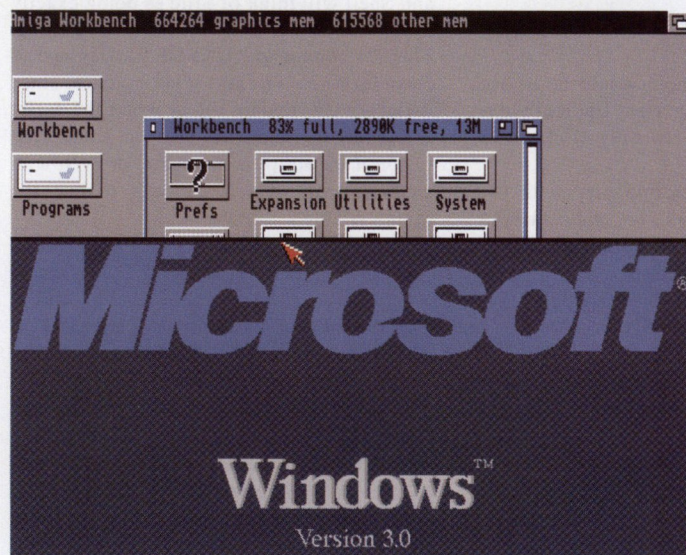
# PC-Task v2

AMIGA USERS ARE sometimes plagued by the need to access or produce MS-DOS format files. With Workbench 2.0 and above, we can format and read or write to MS-DOS disks - even run our Amiga drives as MS-DOS drives - but this still has limitations. Some programs like ADPro will load and save files in MS-DOS formats, but what do we do for the others?

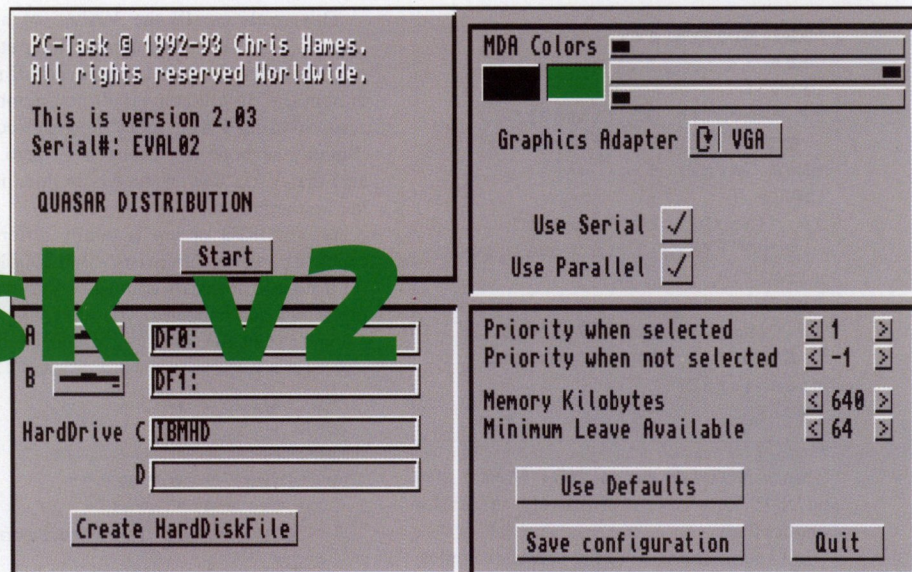
The cost of bridge boards, while reasonable compared to buying an IBM-compatible, can sometimes be an unjustifiable expense, unless we are frequently running MS-DOS or Windows software. Certainly, bridge boards have proved extremely versatile, with the new Golden Gate 486 board proving its worth when I tested it.

Now there is a new kid on the block for those without deep pockets - PC-Task, a purely-software emulator, with no attendant hardware required. At a price of \$69, compared to an ATonce Plus 286 board at \$399, or \$1599 for a Golden Gate 486, it must be considered well worth a look, so let's dig deeper.

The review copy came with a spiral-bound manual and a single disk. The manual, a draft copy, was a little rough around the edges, as would be expected. However, despite the fact that it consisted of only 36 pages, it was a mine of information and certainly adequate to get PC-Task up and running. The disk carries



**PC-Task 2 is a multitasking PC emulator - simply drag down its screen to reveal the Amiga screen behind...**



three versions of PC-Task to match your current CPU - 68000, 010 or 020+ - and some utility programs.

## System Requirements

PC-Task should work on any Amiga, from an A500 to an A4000. It requires at least 512K of RAM, preferably 1 Mb, and the computer should be running Workbench 1.2 or better. AGA systems will enhance PC-Task's operation for graphics. Hard disk space should be sufficient to handle the software you intend to install.

## Installation

Installation on my A2500 with Workbench 2.1 was a breeze, with no hiccups from the program. Just select and drag the appropriate icon or icons on to the selected hard disk partition. Those using Workbench 1.2 or 1.3 must also copy a patch program. The only problem I struck was not a fault with PC-Task, but due instead to my lack of software in the 720K format to install on the hard drive, since I do not have an Amiga high-density drive. Any-

one considering serious use of PC-Task would be well advised either to find a source of software in the low-density format, or to purchase a high-density drive.

## Disk Drives

PC-Task seamlessly uses the Amiga floppy drives in the 720K format, allowing the user to choose which will be the A and B drives for the MS-DOS operation. A high-density drive could be allocated as either A or B. The hard disk allows a choice between creating a DOS file on an Amiga partition, or converting an Amiga partition for MS-DOS. Two PC partitions or files are possible, to create both a C and a D drive.

In my case, I chose a DOS file for convenience, due to a rather full hard drive which I did not want to re-partition. I suspect that this configuration is a little slower than the partition choice, if my experience with the 386 Golden Gate is anything to go by. In spite of this, I found the response time, when working, to be pretty fast. Incidentally, existing bridge board files are accessible by PC-Task.

## Graphics

It is possible to emulate four different graphics display formats - MDA, CGA, EGA and VGA. There are obviously some limitations here with colours, but Mode 13 in the VGA format uses the AGA chipset to access 256K colours on an A1200 or A4000. The choice of graphics format can be changed on bootup.

Also on bootup, the user may adjust the priority given to the running of the emulator, with or without the PC screen selected. Memory allocation is adjustable between PC-Task and the Amiga, for optimum use of both systems under multitasking conditions. A range of operating options for the screen, and PC-Task generally, can be set with tool types in the PC-Task icon, to take effect on bootup.

## Drivers And Utilities

The mouse driver is controlled by a hot key arrangement, but here again, I fell foul of the need for a high-density drive, since my Microsoft mouse driver was on a high-density disk. Strangely enough, when using XTGold,

*Continued on page 62*



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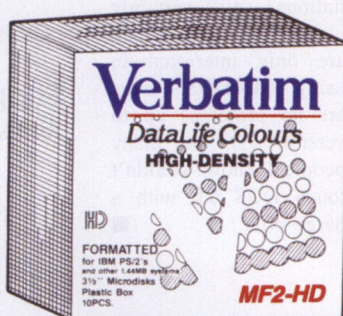
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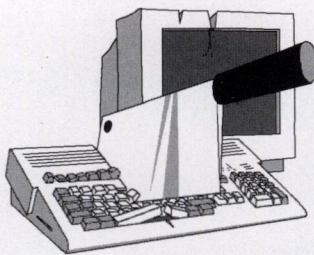
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*Amiga Down Under provides answers to reader queries...*

## BBS List

I am looking for a list of all the Amiga Bulletin Boards in NZ. Can you please supply me with a list of boards?

*Trevor Willing, Christchurch, New Zealand.*

Ironically, most BBSs have such a list. The only problem is in finding the number of that first BBS! ADU has reviewed various Bulletin Boards in past issues, so log on to one of these, and download a list. For the number of a local BBS, ask your user group.

## PD Subscriber Disk

There is a library missing on the subscriber disk. matrix.library version 23.533 is required for Alertpatch. Is there a place I can get this library? Also, the ixemul.library is missing for the Icoons programs.

*Sue Ravaillion, Clayton, Australia.*

All these libraries were supplied on the disk. You have most likely not copied them to the right libs directory. See PD Disk, page 78, for a full explanation of this.

# HELP! KEY

I have a query about the PD disk from Issue 2. I cannot decrunch the PD utilities. Whenever I try following the instructions given on the disk, I get one of the following:

- ◆ Unknown Command
- ◆ Please insert volume shrink x-----shr in any drive
- ◆ Please insert volume ENV in any drive
- ◆ Archive does not exist

I am a certified novice and am probably missing a vital step, but cannot work out what.

*Tom Thompson, Wanganui, New Zealand.*

### BlitzMan v0.0, continued from page 35

```

If MenuHit=0 AND ItemHit=0 Then Gosub loadmed
If MenuHit=0 AND ItemHit=1 Then StartMedModule 0
If MenuHit=0 AND ItemHit=2 Then End
End Select
Forever

.selectframe ;points *myman to existing or new frame
gman=GadgetHit
gadgetx=300+(gman MOD 5)*64:gadgets=6+Int(gman/5)*32
If *f(gman)=0
  AddItem segs():*f(gman)=segs():Restore mandata
  readfigure{*f(gman)}
EndIf
*myman=*f(gman)
Gosub refreshgman
Return

.refreshgman ;redraw a frame
Use Window 0
WBox gadgetx+4,gadgets+2,gadgetx+55,gadgets+27,0
size=.25:drawfigure {gadgetx+30,gadgets+16,0,*myman}
Use Window 1:InnerCls
size=1:drawfigure {128,64,0,*myman}
Return

.editman: ;check for hotspot and let user adjust angle
Use Window 1
*part.seg=findpart{WMouseX,WMouseY,*myman}
If *part<>0
  USEPATH *part
  wx=WMouseX:wa=\angle:Use Window 1
  While Joyb(0)<>0
    \angle=wa+wx-WMouseX:InnerCls
    drawfigure {128,64,0,*myman}:VWait 10
  Wend
  Gosub refreshgman
EndIf
While Joyb(0)<>0 Wend
Return

.loadmed:
a$=FileRequest$("SELECT MED MODULE TO LOAD",pa$,fi$)
If a$<>" Then LoadMedModule 0,a$
Return

.mandata: ;numbranches,angle,len (13 limbs)
Data.w 3,0,0 ;origin
Data.w 1,32,40 ;right thigh
Data.w 1,48,40 ;right calf
Data.w 0,-80,16 ;right foot
Data.w 1,96,40 ;left thigh
Data.w 1,-48,40 ;left calf
Data.w 0,80,16 ;left foot
Data.w 3,192,20 ;back bone
Data.w 1,76,40 ;right top arm
Data.w 0,32,30 ;right low arm
Data.w 1,192,40 ;left top arm
Data.w 0,32,30 ;left low arm
Data.w 0,128,-20 ;end of data

```

### Continued from page 60

the mouse operated quite happily without a specific driver. I suspect the PC mouse driver only becomes important with certain software.

Utility programs supplied allow the reading and writing of files between Amiga and PC-Task disks, when necessary, accompanied by full instructions. Instructions are also given on installing and using 5.25-inch drives and CD-ROMs. The CD-ROM driver is said to be fairly basic, so care should be taken to confirm that a particular CD-ROM will work with this model.

Owners of old GVP 030 accelerator boards may strike a problem with early versions of the on-board PAL chip. Update chips from GVP should rectify the problem.

This emulator operates as an XT PC and will, therefore, have limitations on the software which will operate with it. For instance, currently it will only run Windows 3.0, and not 3.1. I am informed, however, that an upgrade is underway, which will emulate 386 and possibly 486 CPUs. If you have a high-density drive, you will certainly be on a winner when this hits the streets.

Watch out for Amiga screen blankers - they tend to cause havoc with some software running under PC-Task. It might also be worth mentioning that some PC applications, such as Electronic Cash Book, use direct hardware calls when printing, and are therefore not totally compatible. This is not so much a problem with PC-Task, as with the software itself, but it nevertheless remains an annoying limitation.

## Conclusions

Don't expect too much from this emulator, because, as I have pointed out, it is only an XT. However, a number of programs are certainly geared for XT operation. I am told that Quicken (an excellent accounting program), Turbo Pascal, Windows 3.0, and XTGold (I have tried this successfully myself), plus games like Monkey Island and Prince of Persia, work quite happily under PC-Task. I also gather that several CD-ROMs on astronomy and cooking, plus versions of atlases and the Bible encounter no problems.

Remembering its limitations, it's certainly well worth a look. If you are only interested in using MS-DOS, there are no problems up to version 5.0, but many people I know wouldn't touch DOS 6.0 with a barge pole. ■

## Manufacturer

*Quasar Distribution (Australia)*

**Supplied for Review by**  
*Alchemy Software Development*

## Retail Price

**\$A69**



From the information you have given us, I can only suggest the following:

- ◆ You may have spelt "Shrink" incorrectly, or AmigaDOS doesn't know where to find it. Try "DF0:c/Shrink" (if the PD disk is in the internal drive) instead of just "shrink". Case is not important.
- ◆ Have you put quotes around the whole command line? For example:  
"Shrink x Drop4.shr Volume with spaces:" will give you your error. The correct line should read something like:  
Shrink x Drop4.shr "Volume with spaces:" to extract the archive Drop4.shr to the disk called "Volume with spaces:"
- ◆ Shrink wants to read configuration data from the system-assignment called "ENV:". Just ignore this error.
- ◆ Well, you have managed to run Shrink. Congratulations. However, now Shrink can't find the archive. Check that you spelt the archive name correctly, and that you are in the right directory. If you aren't in the right directory, you must supply the full pathname, so that Shrink can find it.  
Don't worry too much about your certifiable novice status- if you experiment enough with a copy of the PD disk, you will soon know all there is to know about Shrink!

## Ants

I am writing to you in dire need of help in the game "It came from the desert". The thing I want to know is - How can I beat the ants and how do I go about doing it?

*Craig Munro, Ashburton, New Zealand.*

We're stumped. Do any of our readers know the answer to this one?

## Problems with ImageFX

I am having problems with ImageFX and wonder if you can help. My system is as follows; Amiga 4000/030 with FPU, 10 Mb RAM, 80 Mb and 213 Mb HDs and 1960 monitor. I am trying to scale a number of images grabbed by Vidi12 using IMP. After

setting the paths to the source and destination files, I use the command "scale 25,25,percent". IMP reports that image one is saved and it starts on image two, then the monitor re-synchs, the screen goes black and gurus. My images are all lo-res, 16 greyscale and are numbered 1 2 3 etc.

*Pat Weaver, Whangarei, New Zealand.*

Sorry, Pat. We use ImageFX extensively, but not for multi-processing. The only source of error I can see is that IMP must be run asynchronously from ImageFX. If not, you will get nowhere. Your manual has an IMP tutorial, which might be of some help.

## A500 CD-ROM

Is there any possibility of connecting an Amiga 500 computer to a compact disc or optical disk drive system, and being able to store data the same as on the ordinary 3 1/2 disks - i.e., that it can be used to store information, more than once?

*Alex Dennis, Upper Hutt, New Zealand.*

Normally, an optical drive is connected through the SCSI port, so you will need a SCSI controller. If you have an external SCSI HD on your A500, you should have a pass-through port on the back to connect other units. In general, "optical" storage is writeable more than once, just like floppy disks, but in particular, "CD-ROM" storage can only be written once, since the process of writing data destroys the CD's surface. CD-ROM drives capable of writing to a blank CD are available, but I would suggest that you investigate the so-called "floptical" drives available for the Amiga.

## Commercial Prospects

Could you please help me find a way to sell the software I have produced? I program on my Amiga and IBM in Basic or Amos. Most of the programs I write are art, utilities, games, and customised spreadsheets.

*Bruce de Boer, Levin, New Zealand*

Try releasing your programs as PD or shareware. If you do not have a modem yourself, get a friend to upload your masterpieces to a local Bulletin Board, or contact some of the PD libraries which advertise in ADU. We are also willing to distribute software on our Subscriber Disks.

Even once you have a name for yourself, you will find it extremely difficult to get a publisher to invest thousands of dollars in marketing a program from a newcomer without a proven commercial record. It's the old "work experience" paradox. Good luck.

## Bonus Games

According to you, the games disk should have a couple of games on it, but there are no instructions on how to find them. I reckon I selected every pixel without result.

*Phil Anker, Blenheim, New Zealand.*

Sorry about that. We had a last-minute change to the disk, because the shortened version of Skidmarks that allowed room for the two extra games was nowhere near as much fun as the longer version that we used. Unfortunately, we had already gone to press at that point and couldn't change it. Hopefully we will get them on to another Subscriber Disk for you.

**We are unable to publish all the letters we receive, but if you have a question on any Amiga-related subject, or an answer to a question printed here, send it to:**

**Help Key, c/- ADU**  
(see page 10 for address.)

## Errata

In ADU4, the code for Blitz Basic was missing a few key symbols. Here are the lines to change, in Listing 1.

```
(9)  balls() \x=Rnd(300), Rnd(200), Rnd(6) - 3, Rnd(6) - 3
(25) \x+\xa:\y+\ya ; add speed
(26) If NOT RectsHit(\x,\y,1,1,0,0,300,200)
(28) \xa=-\xa:\ya=-\ya:\x+\xa:\y+\ya ; reverse direction
(30) Blit 0,\x,\y ;blit new position
```

And in the text, before the heading "Adding a Backplayfield", the code additions should have read:

```
If \x<0 OR \x>250 Then \xa=-\xa:\x+\xa
If \y<0 OR \y>200 Then \ya=-\ya:\y+\ya
```

But that's not all. The DSS8+ review (pg 56) contains an unforeseen error, introduced by PostScript, at the bottom of the second column. The word ".XDEFs" has been shifted over, and printed on top of the words "for the functions"

Wait! There's more. On page 62, the Workbench column contains similar unfriendly underscore characters. Column 3 of the article contains the lines: "...will be def.drawer.info.", and "...def.kick.info if the inserted disk...". Column 4 has the line "...save it as def.kick.info. Now, whenever a..."

We apologise for the confusion.

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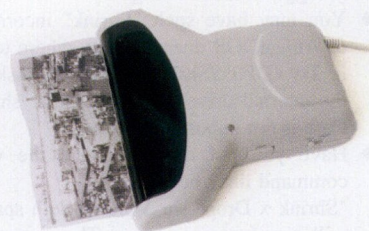


## Pyramid Hand Scanner

The first thing encountered with any new piece of hardware is the packaging. Having read closely the printer review in ADU 3, I was prepared for all kinds of cardboard deviousness. I was not disappointed. The box encompassing the Pyramid hand scanner had no less than three separate compartments.

Layer one contains the scanner, and a disk. So far, not a printed item in sight. I hoped something on the disk would explain the various switches. There was an obvious second compartment in the box, so I pressed on.

Next, I found a small piece of card, trapped under a massive, black AC power supply. When I say "massive", I mean HUGE. This power supply could probably hold its own in a fight with an A500 or A1200 power brick. It even rivalled a Mac Plus mouse for chunkiness (and number of buttons)!



I turned my attention to the card once again. On closer scrutiny, it turned out to be a description (in French) of the scanner software, and a diagram showing how to connect the scanner to the switch box provided, and that to the Amiga. Switch box? This was news to me. I completed my destruction of the packaging, and there it was, hidden right at the bottom, inside a secret compartment.

The Pyramid scanner outperformed its competition on ease of use. The other scanners have the standard black rubber roller at the front, and usually two tiny black plastic wheels at the back. Not so with the Pyramid. Instead, a roller at each end of the unit makes for a smooth, comfortable scan every time.

There are few external controls. Brightness, dpi, dot size, and the start button are all that adorn the Pyramid scanner. Inside are a buzzer and LED, to warn if you scan too fast for the software to keep up.

Further search revealed that the box had, at last, given up all its secrets. Still no manual. A "Manual" file on the disk, is written in that peculiar style of language known as "Japanglish", and contains too many errors to be of any use.

Fortunately, the ScanKit software is easy to use. Having informed the program what length of scan is required, click on the "go" button, set up the scanner, and start to scan. Incoming data is drawn directly in the ScanKit scan window, so you can see how fast the information is coming through. At 400 dpi, a full-width scan is in the order of 1600 pixels across, so the window offers little information apart from this.

For a full-width 400 dpi scan of about 6 cm in length, the filesize of the raw data came to about 300 Kb. For users with a single floppy drive, I'd recommend you spend the money on another drive, rather than a scanner. You will need plenty of memory. Scanning itself is not too memory-hungry, but if you plan to do any image-processing with the raw data - before it is butchered by the software - you will need a barrowload of memory.

The raw data is 1-bit - only really useful to Mac owners. ScanKit, however, offers the option of converting large squares of the data into greyscales, at a loss in image size. There are two scale settings: 6x6 squares, or 8x8-pixel squares, from which the software will recognise and save up to 64 greyscales. Unfortunately, simple scaling is not a very good way to achieve an adequate greyscale.

The creation of usable images definitely requires some sort of image-manipulation program. The greyscales available from ScanKit are, in my opinion, not adequate.

The "Manual" file indicates that DPaint can be used to work with these images. Not so. A full-width 400 dpi scan is 1654 pixels wide in black and white, and 207 pixels wide after the 8x8 averaging described. DPaint can deal easily with the latter in 16-greyscales, but the damage has already been done by then.

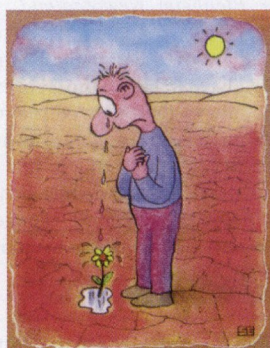
On the other hand, with 2 Mb of chip RAM, and 8 Mb of fast RAM, DPaint quite happily loaded the 1654x2144 1-bitplane image. Unfortunately, all you can do with such an image is look at it. You cannot change the page size, or have DPaint scale the image into a 16-colour greyscale. Nor can you do so if you load the image as a brush.

Not being one to give up, I tried something else: ImageFX. ImageFX offers its own brand of virtual memory, which I knew would be able to take even this vast image size. Sure enough, it loaded. I ran a filter matrix on the huge, original, black and white scan. Results were impressive. A closer look at the image revealed that the filter pass had not been entirely successful. The spots were larger, and ran together, but they were still spots, and not tones. This all disappeared when I scaled this picture down to screen size, however, and the result was far superior to the 8x8-pixel averaging offered by ScanKit.

Supplied for Review by Kaotic Concepts

## Output Comparison

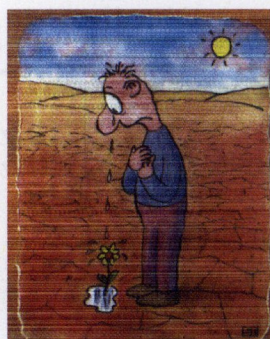
Here's a comparison of the output from each of the scanners' respective software packages. The sample image is a cartoon by Stan Eales, reproduced from his book "Isn't Progress Wonderful?", and scanned from the Paul McCartney "The New World Tour" concert programme.



The original image, scanned with our 800 dpi Epson flatbed.



Migraph ColorBurst (200 dpi)



AlfaData AlfaColor (200 dpi)



Migraph 256-Greyscale (400 dpi)



AlfaData 256-Greyscale (400 dpi)



Pyramid Hand Scanner (400 dpi)



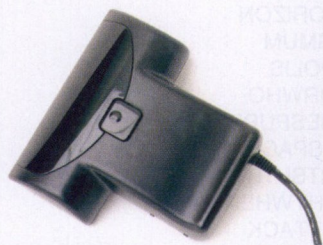
## AlfaData AlfaColor

At first glance, the interface unit for this scanner looks like an external floppy drive - an illusion further enhanced by the cable connecting it to the external floppy port. However, there is no place to insert disks. The interface takes its power from the floppy disk connector, and sends data through the parallel port, for which there is also a connection.

The box is colourful, showing off the sleek, black scanner. I'd rate it as the most visually-appealing, in a shop window, and the second most challenging to unpack. Inside is the equivalent of a cardboard chastity belt, keeping the scanner unit, manual, disks, cables, and interface unit safe from the ravages of a harsh world. It is identical to the AlfaData's box. A complete set of disks and manuals is provided, and the software is easy to install on a hard disk.

The manual for the scanner and software is a slim paper brochure - far less demanding to read than the Migraph manuals, with a choice of English and German. This manual seems to have been written in the same "Japanglish" style as the Pyramid scanner "Manual" disk file, with slightly more attention to the "!" key. Despite this, all relevant information is conveyed to the reader. The manual seems to indicate that the advertised 18-bit, Super-Color mode works only for AGA Amigas. This turns out not to be so, but the manual does not help.

The software is terrible. The program used to control the scanner is, to say the least, a prima donna. Four times out of five, it reported a "handshaking failure !!!" (sic) and quit. I was unimpressed. Spelling errors on commercial products are something to be avoided at all costs. Just ask the cover designers of ImageMaster...



In addition to this, the custom file-requester does not allow you to overwrite files, which can be a real handicap if you need to, since files generated are in the order of megabytes in size. Furthermore, the software busy-waits! A multi-tasking system, such as the Amiga, does not need rogue tasks using up all available processor

time by continuously polling for external events. Such tasks can simply ask the system to send a message when such an event occurs, and go to sleep. Again, I was unimpressed.

The AlfaColor hand scanner (and Migraph Colorburst) are the best looking of the models reviewed, with their smooth curves, and sleek, black exteriors. They would look right at home with a CDTV system. The temperamental software requires the usual controls and switches to be in exactly the right position before scanning can begin.

Scanning an image relies on the user being able to move the scanner unit in a straight line with little effort, and at a constant speed. This is paramount in deciding which scanner is superior to another. Unfortunately, the AlfaColor was the hardest to move of any of the scanners. The tiny black plastic wheels squeaked and slipped, causing the scanner to fishtail back and forth over the image I was trying to scan. Although not pronounced enough to affect the scanned image, it was somewhat disconcerting.

On the bright side, however, the quality of the colour scans with this scanner was impressive, in comparison to the black and white models I'd seen so far.. Certainly worth fighting with the software for.

In summary, this is the scanner I'd rate as the last one I'd choose to buy, of all the models reviewed. Purely because of the substandard software and manual. However, don't be put off. Ask to see this one in action on an identical machine to your own (if possible), for when it works, it blows away the monochrome opposition. ■

Supplied for Review by Micro Dealer

Although the scanners reviewed here are a small sample of those available for the Amiga, they represent the entire spectrum, in terms of both software and hardware.

It is a worrying phenomenon, then, to see that not one of the scanners got the scan length right. One program went as far as making me scan a length of 20cm, when all I wanted was a 6cm scan! ■

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# GAMES MASTERY

Greetings dudes!

Welcome to another month of hot tips for your favourite computer. This month we tackle a varied bag of games from arcade to strategy, so without further ado...

## **Sensible Soccer (Renegade)**

To be able to play the game in slow mode, simply play the game as normal, then make a player substitution. As the player leaves the field, push the ESC key and voila! To return to normal, simply repeat the above procedure.

## **Transarctica (Daze)**

If this game is proving a bit hard for you or you want a few extra options, why not zoom in on these wonderful codes? First head for the options page (beginning of the game) then position your mouse cursor in any corner of the screen. Now click on the left mouse button and push CTRL & ALT all at the same time. The codes are as follows:

SUPERENEMY	Obtain fully-loaded train with tough opponent
SUPERTRAIN	Fully-loaded train without a super tough dude to compete against
SUPERSCENARIO	Supertrain plus objects and scenario granted in order to win
VICTORY	Self-fulfilling prophecy

## **Dalek Attack**

To become unstoppable, from the title screen enter this slightly cryptic 1-line code:

JAMES BOND AND OLIVER REED WERE  
NEVER GOOD SINGERS

## **Lionheart (Thalion)**

Unlimited lives can be yours. First start as per usual, then crouch down and push the "P" key. Now hold CTRL & HELP keys down until you see the screen move about and away you go.

(or)

Whilst you're in cheat mode, if you push CTRL you can make Vladyn fly (use your mouse to keep control).

## **A-Train (Ocean)**

To gain bucket loads of cash, during the main game enter the following:

CHEATERCHEATERWIMP

## **Sink or Swim**

Level codes as follows, is this great or what?

Level 2 BISHOPSMOVE  
Level 3 PATSY4KERMIT  
Level 4 HOWNOWPOWPOW  
Level 5 RINGWORLD  
Level 6 TROUGHTON  
Level 7 REDPLANET  
Level 8 MEGALITHIC  
Level 9 MYBREAKFAST  
Level 10 TINNYBOPPERS  
Level 11 LOCKSALORDY  
Level 12 HALLOWEENVII  
Level 13 NEWMODELARMY  
Level 14 TIMEPIECE  
Level 15 LARRYNIVEN  
Level 16 KILLERWHALE  
Level 17 BLUEHORIZON  
Level 18 ARNIESMUM  
Level 19 LOGOPOLIS  
Level 20 DOCTORWHO  
Level 21 MRJONESPUPPY  
Level 22 HYPERSPACE  
Level 23 ROBERTSMITH  
Level 24 WHOWHYWHEN  
Level 25 SOCKATTACK  
Level 26 WELLINEVER  
Level 27 MRPOTATOMAN  
Level 28 JOSIEWHALES  
Level 29 SOBRIETYCITY  
Level 30 WHERESEMBEER  
Level 31 HORSERACE  
Level 32 GINADINNER  
Level 33 CHICKENFEED  
Level 34 CARROTCAKE  
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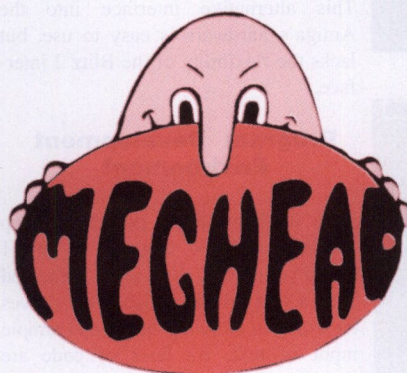
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# Blitz BASIC 2

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IF YOU HANKER to write programs which run at lightning speed like arcade games, or programs using Intuition (the Amiga's graphical interface), but hesitate to tackle the complexities of other programming languages, Blitz BASIC 2 is the answer to all your prayers.

Many find Assembler and C (the two languages which tend to be used for the above tasks) too complicated. Blitz BASIC 2, however, is flexible enough to allow any level of programmer - even relative beginners - to produce anything from a stunningly-fast, shoot-'em-up game, to an Intuition-based, WIMP (Windows Icons Mouse Pointer) environment for programs.

Blitz 2 is a compiled language, i.e., programs are translated into stand-alone machine code executables, which can be run. But before you go and have a cup of coffee while your program compiles (as you can with most

other compilers), be aware of the speed of this package. The Blitz 2 compiler completes the task almost instantaneously.

Once you have a feel for the way that Blitz 2 works, and the way in which its programs are written, you will soon see that it is a mixture of C and Basic, which has resulted in a programming language both flexible and easy to learn. Similarities to C include the implementation of Functions and Procedures (called Statements in Blitz 2), variable types (e.g., words, signed words, bytes, unsigned bytes... and Structures), and the multi If statement "Case argument Of" (similar to Switch in C). Similarities to BASIC are evident in the way variables are used (no need to define variables before you use them, as in C), and strings use the "\$" in their names.

A word of caution, however. In order to gain maximum graphical performance from the Amiga, the user must understand the internal workings of the computer. If you are new to the Amiga and want to use its advanced graphical capabilities without getting a headache trying to comprehend the way Blitz 2 accesses the Amiga's hardware, I suggest you use Amos. This alternative interface into the Amiga's hardware is easy to use, but lacks the flexibility of the Blitz 2 interface.

## Program Development Environment

After loading Blitz 2 (which used up two-thirds of the memory in my 1 megabyte A500), the user is presented with a text editor, which soon proves its worth in allowing quick and simple input of text. As lines of code are entered, the editor checks for valid commands, highlighting commands in yellow, and leaving parameters in white. It is, therefore, very quick and easy to pick up spelling mistakes in

Blitz 2 commands.

The Blitz editor has one feature I have never come across before, enabling the user to find positions in the source code extremely rapidly. The feature is invoked by placing a "." at the start of a label. The editor then displays a list of all the program's labels in a window to the right of the display. When the mouse is clicked on one of the labels in this window, the cursor jumps to this new current position.

However, the Blitz editor lacks some of the text manipulation functions I have come to expect in a text editor - namely, the ability to join two lines of text into one line, or make one line of text into two. These functions have been implemented, but have to be performed with a special key press, not the usual Enter or Delete key, as one would expect. There is also no overtype mode - only an insert mode.

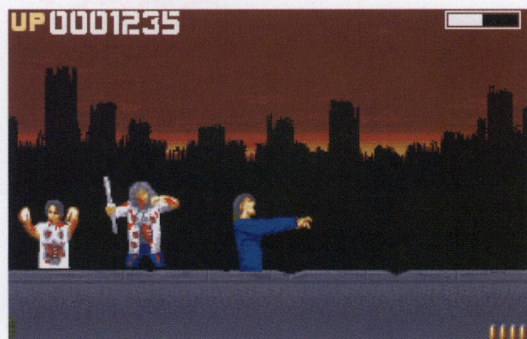
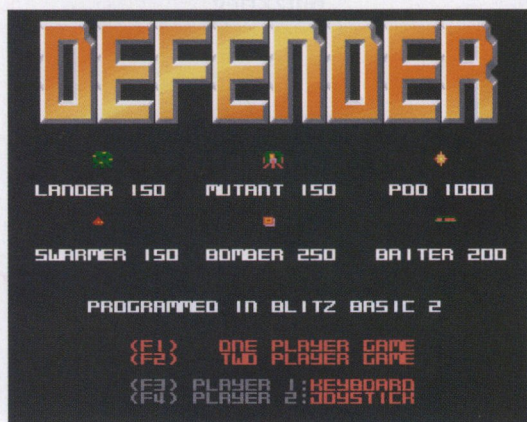
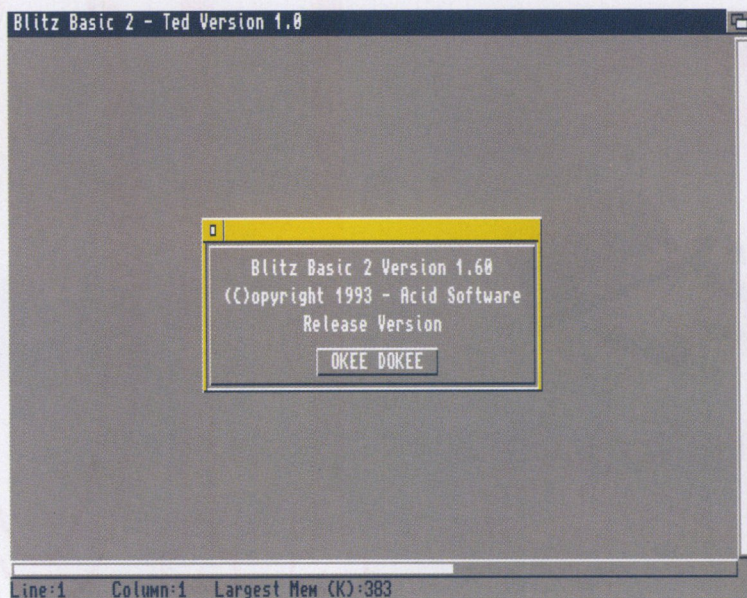
Blitz 2 also has the ability to accept machine code mnemonics as if they were BASIC commands, thereby allowing experienced users to include machine code inserts in programs for additional speed and flexibility.

## Graphics

Blitz BASIC 2 has definitely delivered the goods in the area of graphics. The program excels itself by providing the user with a vast array of 2D drawing commands such as Plot, Draw, Circle and Fill. Another bonus lies in the ability to manipulate Shapes (similar to IFF Brushes), which can be created in your favourite paint package, and loaded into Blitz 2. Once stored internally as Shapes, the user can flip them vertically or horizontally, scale them, create masks for blitting purposes, or use them in Intuition. Another highlight - the one command I have never seen in any other BASIC environment - is the ability to perform rotation of Shape images.

## Blitz Mode

When you start writing games, it soon becomes clear that the Amiga's multitasking



The package comes complete with two PD games, written in Blitz 2: Defender and Zombie Apocalypse.



environment slows your game speed down to a point where you feel like trashing Workbench, and controlling the Amiga totally. Blitz BASIC 2 has just such a command - "Blitz". When executed, the operating system (this includes Workbench, Intuition, all keyboard routines, libraries, device drivers, etc.) is shut down and your Blitz 2 program is given the run of the system. It therefore no longer has to fight with the Operating System for CPU time, since it now has all available CPU time. The obvious problem is that you can no longer load files or perform any other Intuition-based commands. However, Blitz 2 countermands this dilemma with the "QAmiga" command, which allows just enough of the Operating System to run, to achieve simple I/O.

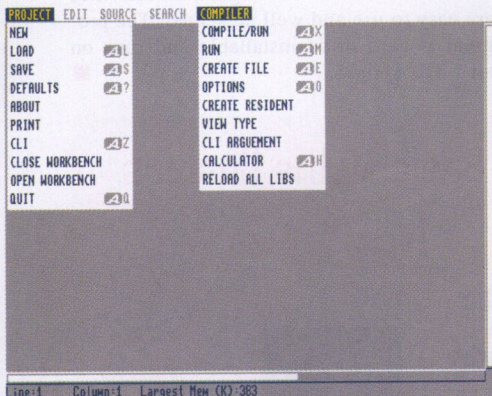
## Screen Handling

The Amiga is capable of changing what is being viewed on the screen on every horizontal line (scan line) of the monitor. For example, Intuition has the ability to show several screens, each occupying different vertical positions on the monitor. The Amiga's hardware is also capable of changing colours on every scan line (in actual fact, every eight pixels), as well as presenting a variety of different screen resolutions.

Blitz BASIC 2 allows the user to tap into the Amiga's potential. The main command for achieving this kind of control is the "Slice" command, which sets up the display on your Amiga to the dictates of your imagination. Whether it be hi-res at the top, lo-res in the middle and HAM mode at the bottom, the Slice command will handle your requests with ease.

## Programming Intuition

In spite of the deceptively-simple appearance of, for example, the Workbench clock in the Utilities Drawer - with its simple menus, slider bars (in the Alarm Set menu) to simplify time adjustment, etc. - any user who has attempted to write the corresponding software will know how long and tedious the typing



alone becomes. It's an overwhelming task if you decide to write your software in C or machine code (silly to even attempt this feat in my opinion!)

However, if you were to attempt the same program, but write the software in Blitz 2, I

could almost say to you "CHEAT!" The amount of typing required to achieve the equivalent result in a C or machine code program is so small, it is almost unbelievable! Included in Blitz 2's vast array of commands for handling windows, menus, etc., are commands to open a window on any screen, open menus, set up number and text gadgets, set up prop (slider bar) gadgets, act immediately to user events, read key presses directed to a particular window, draw graphics on to a window, change the font used by the window, move the window and make colour adjustments. The list goes on...

## Sound and Music

Any game on the Amiga these days tends to rely on a combination of graphics and sound in order to create the necessary atmosphere. The sound component, I feel, is particularly important. However, if either graphics or sound are lacking, I quickly lose interest. On this note, I was delighted to find that Blitz BASIC 2 has included a whole host of sound commands, which allow the user to create synthetic (computer-generated) sound or playback digitised (stored, real-life) sound.

The "DiskPlay" command immediately caught my attention. This will play a sample from disk, no longer limiting your game samples to the amount of Chip RAM available, but rather, to the amount of available disk space. Most games today also have catchy tunes playing in the background, and Blitz BASIC 2, accordingly, includes a command to load and play Soundtracker modules. Sadly, however, commands to load and play modules in the superior MED format are lacking.

## Debugging

Debugging is a vital part of any language. Those who have written a loop - expecting it to do one thing, but ending up with another, because a variable was wrongly spelled - will know the value of a debugger. The Blitz BASIC 2 version allows the user to single step, continue running, skip commands and evaluate expressions within the current program. The one criticism I have is that you cannot follow a variable (see a continuous evaluation). Rather, you must ask the debugger for the variable's contents, each time you want to know what the variable is doing.

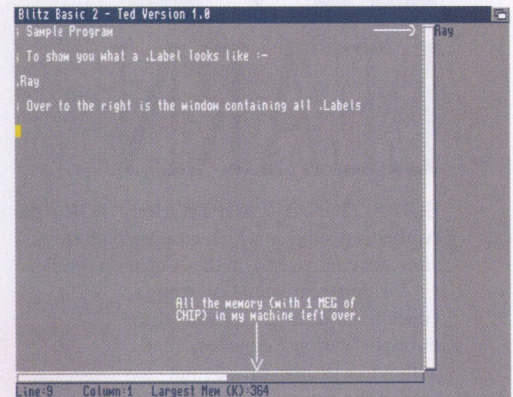
## Manuals

Blitz 2 comes with two manuals. The smaller User Guide, takes you through an introduction, a discussion of the language, and how to program properly with Blitz BASIC 2. The larger Reference Manual gives the syntax for every Blitz 2 command, usually accompanied by an example, and also provides a quick reference guide for 68000 mnemonics, hardware registers, all Amiga library calls and a table of raw key codes. Careful thought has gone into the presentation of this material, which is easy to follow and use.

## Drawbacks

Variables are case sensitive. This means that the variable Ray=0 is different to ray=0, which initially I found annoying.

Functions like Sin, Cos, Tan, etc., can only



accept angles in radians (360 degrees = 2 x pi radians). I find it easier to visualise what I am doing when I manipulate angles in my head as degrees.

Having used Amos Professional, I missed the ease of animation provided by the dedicated Amal language, included with Amos Pro. This is a further area which could be improved.

## Impressions

I am particularly impressed with Blitz BASIC 2's extensive support for programming the Amiga's Intuition interface. I also like the mix of C, machine code and BASIC characteristics, which gives the user a very flexible - but not too high a level - language.

Several unique commands at this level make the program stand out from the pack as one with which relatively-new programmers can readily identify. I hasten to add that, without a basic knowledge of the Amiga's hardware, complete novices should use Amos as a stepping stone to Blitz 2. The Amos interface is easy to use, requiring almost no knowledge of the Amiga's hardware, whereas efficient use of Blitz BASIC 2 is definitely dependent on a certain degree of knowledge in that area.

Experienced users will revel in its speed and flexibility, and the program does not disappoint in its array of options in the graphics arena. Much of the tedium of traditional programming languages has been removed - particularly the prolonged typing necessary in others - and I feel sure that Blitz BASIC 2 will find wide appeal.

## Manufacturer

Acid Software (NZ)

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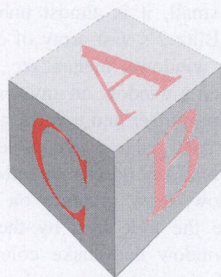
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# LIVE & LEARN

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**Russell Robson**



EDUCATIONAL SOFTWARE FOR the Amiga is a subject which arouses both discussion and controversy in the educational field.

A significant range of Amiga educational software is available through various sources, and, without wishing to attempt to predict the future, it appears as if there is much more to come.

Why have Amiga distributors failed to capitalise on this market? Broadly speaking, as a rule, distributors place most emphasis/support behind titles which sell well. It could be said that high sales in retail educational software generally reflect a price/packaging/bells and whistles content, with little attention paid to educational content or value. This means that the products which achieve the highest sales may not necessarily have any educational value in schools.

Unfortunately, schools don't/won't accept that, because a product sells well in the retail market, it must be good in schools. Schools also won't buy what they can't see. This sparks a vicious circle - distributors won't import the software (supposedly because it won't sell), schools won't buy it because they can't see it, and the product suffers as a result.

Australia's Rush Software range could be displayed as an example of this trend. While educational content is excellent and the product is received extremely well by schools, packaging is not up to certain American or European presentation standards, which means it does not always receive the distribution support it deserves.

The other element in the equation is price - particularly relevant in New Zealand. Software is often distributed in a roundabout way through Australia i.e., European producers sell to an Australian distributor who adds a profit margin, who, in turn sells to a New Zealand distributor, who also adds a profit margin. The New Zealand distributor sells to a retail outlet, which, justifiably, adds a similar profit margin. The end result is a product on the market at a grossly-inflated price.

The public, understandably, won't pay such prices and once again, the product doesn't sell. This has led to cases of retailers dealing directly with producers, which has the desired effect on prices but upsets the distributors, and then there is piracy...

Unfortunately, there is no simple solution to this problem, but hopefully, certain developments in the next few months will see much

centrates on the creative elements of learning for the young, with six main sections - The Discovery Menu, Monster Maker, Music Maestro, Card Creator, Art Alive, and Jigsaw - allowing children to make monsters, draw pictures, create music, produce greeting cards and much, much more. It makes learning fun - children simply point and click to learn. This package would, arguably, be one of the most exciting pieces of junior software we have seen.

The program will run on all 1 Mb Amigas (A1200 and 4000 included), and comes on two disks. It can be installed on hard drive with some difficulty. Unfortunately, many UK producers have yet to realise that the Amiga now has a hard drive.

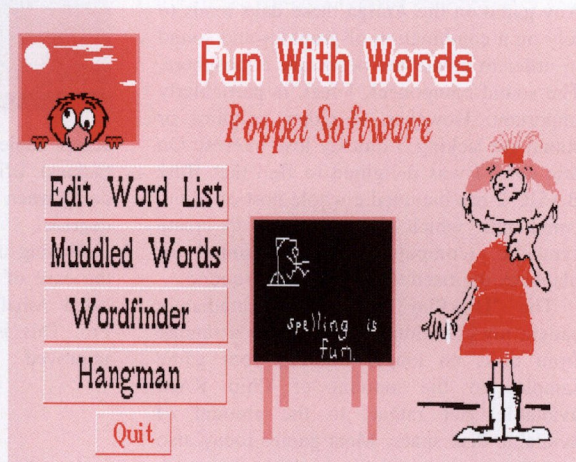
## Fun With Words Poppet Software NZ

Designed to assist with children's language development, Fun With Words provides three separate activities - Muddled Words, Hangman and Wordfinder - as well as a Word List editor. Muddled Words gives children a list of ten words selected from a larger list, which must then be unscrambled. Hangman provides a classic, self-explanatory game and Wordfinder taps the child's ability to create and play hidden word puzzles, as found in many word puzzle books.

The programs are all very easy to use and well presented, supporting the ability of alternative languages through the Word editor. The program is hard drive installable and runs on all 1 Mb Amigas. All in all, an excellent first effort from the team at Poppet Software.

## Basic Maths Busters Poppet Software NZ

Basic Maths Busters consists of four separate activities designed for children learning basic maths facts - The Equaliser, Battle Maths, Easy Maths, and Fast Maths. All provide good twists to the task of learning basic addition, subtraction, multiplication and division skills. Once again, all activities are easy to use and well presented. The program is hard drive installable and runs on all 1 Mb Amigas. ■



of this confusion sorted out, resulting in a cheaper, more attainable level of educational software for all, including schools.

Primary school teacher, Clint Chalmers (for Wellington-based Poppet Software), has designed two excellent educational titles, of great interest to Australians and Kiwis alike. Both are reviewed below.

Rush Software (Australia) has three new titles for release - Find-a-word Wizard, Rush Maths 2, and Galactic Quizmaster - all set to follow the Rush standard of excellence.

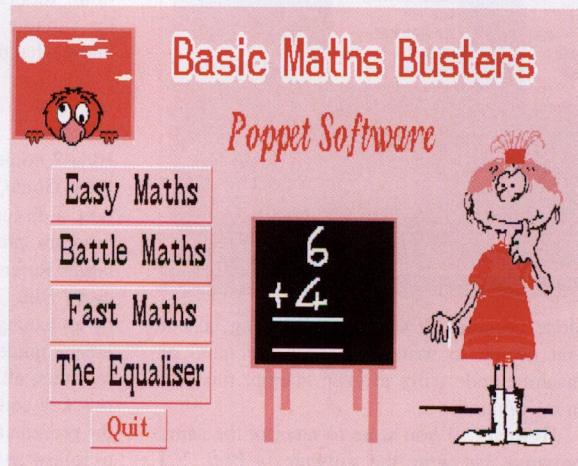
Horizon Resources (NZ) have released the second in their School Certificate science series - a chemical equation-balancing program, called Atom Balance - which will be of special interest to those sitting NZ School Certificate science.

The first of approximately 30 new titles from the UK is also reviewed. More will follow, hopefully, in forthcoming issues.

## Reviews

### Paint & Create Europress Software UK

Paint & Create is one of the many new titles from the Europress group, the same stable which introduced the now famous Fun School series to the world. This program con-





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# AMIGA GAMES

by Simon Barton

WHAT'S IN STORE for readers this month? With the recent release of the Amiga CD<sup>32</sup> console, I'll be raving a fair bit about this new beast and will also quickly review a couple of CD<sup>32</sup> games currently available. For those who have had their heads buried in the sand (and missed ADU 4), the Amiga CD<sup>32</sup> has been released in Australia and is due out in New Zealand around the time we go to press.

What does this wonderful CD-based "console look-alike" mean for the Amiga games market? With games on the Amiga becoming rarer, the new beast can only be good news. Today our new-release schedules are filled more and more with PC-compatible, Sega, and Super Nintendo games. What's the reason for the big companies like US Gold, Activision, Lucas Arts, etc. not developing entertainment software on our much-loved Amigas? The problem has been piracy. Piracy on the Amiga has been like a plague spreading from household to household, eventually becoming so rife, that Amiga games are no longer viable for many software developers. It is not unusual for a TOP title to sell only 30,000 copies in a huge market of more than 2,000,000 Amigas.

One of the problems is education. Children are brought up with piracy, thinking there is nothing wrong with stealing from software companies. I think it's time people were educated about software piracy, the same way they are currently educated about video movie piracy. With sales figures like those above, it's no wonder the development of new product takes priority over the Amiga format.

## The Death of Piracy

The light at the end of the tunnel for software developers must surely be the new Amiga CD<sup>32</sup>. This new beast has an impressive 2 Mb of memory, along with the new AGA chipset. The Amiga CD<sup>32</sup> features the power of an 020 processor and 256,000 colours on the screen at once, combined with a massive 650 Mb of storage space on one CD. There will be practically no limit on the size of CD-based games! Imagine the quality of games with unlimited disk space? Not only will games be huge, but they will also have CD-quality soundtracks, thanks to the ability to play a CD soundtrack and a game simultaneously. Results will be seen

shortly with a couple of long-awaited Psygnosis games, due for release around the New Year.

## Coming up for Psygnosis

The first is Microcosm, a 256-colour shoot-'em-up, with more than 500 Mb of graphic and sound data. (Imagine trying to copy something this size!) The second is a film licence of Dracula, which will also feature over 500 Mb of sound and graphical data, as well as animations running at 20 frames per second. The Amiga CD<sup>32</sup> promises much for the games enthusiast (as well as the software developer). The sound and graphics promise to be awesome and the chances of piracy practically nil.

## CD<sup>32</sup> New Releases

I had the opportunity to test out a couple of the new CD<sup>32</sup> games and here's a quick run-down.

### Diggers (Millennium)

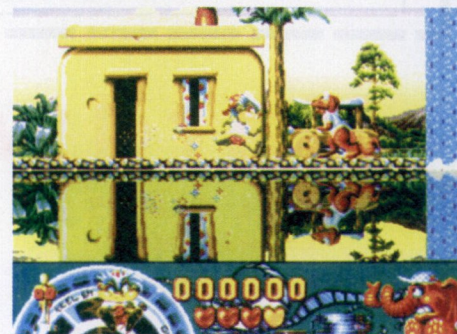
Four races of diggers hurry towards the Zargon Trading Centre, for tomorrow is the glorious 412th, when the planet's authorities allow the annual month of frenzied digging to commence. You play the part of a stranger leading a team of diggers in a huge voyage of discovery into the mining labyrinths of the planet Zarg. The game features a choice of four races, 33 levels with more than a million locations, a chance to discover lost civilisations, wealth and treasures, and to build huge labyrinth tunnel systems.

The game can be played with the CD controller or a standard Amiga mouse in port 2 (which does make life easier). The game starts with a most impressive intro outlining the task ahead. Diggers uses a mouse-driven icon system to control the diggers, as you try to collect as much loot as possible and cash it in to win the race against the computer opponents. A range of mining accessories is available to those rich enough, which includes inflatable boats, small drills, bridges, rail tracks, rail wagons, dynamite, large drilling machines, maps, and more. Diggers has over 15 Mb of game data and features some excellent CD sound-

tracks, as well as impressive 256-colour displays. The actual gameplay is as addictive as beer on a hot Sunday. For me, Diggers looks likely to become a classic, along with the likes of Lemmings and Populous. An excellent, first-up CD<sup>32</sup> product from Millennium. If this is anything to go by, the Amiga CD<sup>32</sup> will have a very healthy future indeed.

### Oscar (Flair)

The second of the CD<sup>32</sup> products, Oscar, has a storyline similar to that of Premiere from Core Design. Oscar is required to collect a certain number of Oscars from each level before he can go on to the next - a standard platform scenario. Being the creators of Trolls, Flair have also included a LOT of colour in Oscar, which takes a little getting used to. The platform levels are pretty standard - like collecting a range of bonus items, while looking for the required number of Oscars. Nothing terribly new here, apart from the graphics, which are amazing!



Is Oscar a vampire? Spot the reflection...

Detail in the backdrops is incredible and they are certainly a treat to the eyes. Another excellent graphical feature is the water. When looking from above, Oscar can only see a reflection, but as soon as he takes the plunge, the view changes to what is under the water. An excellent touch which looks pretty hot. Overall, the gameplay is pretty standard, and the sound not half bad, but the graphics are stunning! Oscar is a visual treat, and an indication of what's in store for Amiga CD<sup>32</sup> owners.

## Out Now

Enough raving for this month. Let's have a look at what else is new and exciting.

### Dogfight (MicroProse)

As outlined last issue, Dogfight is a pure, air-to-air, dogfight simulation with realistic fighter flight models and highly-sophisticated, artificially-intelligent enemy dogfights. Dogfight features dogfights in six different eras of aviation history, with changing landscapes - fly missions in World War I, World War II, Korea, Vietnam, The Falklands and the Middle East. Fly twelve accurately-simulated fighter aircraft and fly





against multiple aircraft from any era in any scenario. Dogfight appears to stand apart from most other flight simulations, in that the whole emphasis is on aerial combat, not complicated weapons systems.

The program was due for release in Australasia in October.

### **Zool CD<sup>32</sup>** (Gremlin)

The Ninja of the Nth Dimension and No. 1 smash hit game is about to repeat the exercise on the Amiga CD<sup>32</sup>. Gremlin plan to release Zool on CD any day now. It will feature the original six worlds, including Sweet World, Music World, and Fun Fair World, as well as a new world with new graphics. There will also be 3D rendered shots throughout the game, plus a complete CD soundtrack.

### **F117A Nighthawk** (MicroProse)

The F117A Nighthawk is the most elusive, advanced and deadly strike aircraft in front line service today. After two years of research and development in the UK, the Nighthawk is finally coming to the Amiga. The game features a completely new 3D system and a mission generator, based on real F117A 'Desert Storm' missions. Fly nine missions in nine different worlds and experience the true nature of stealth missions - be as elusive as possible and never give away your position to the enemy. F117A

is due for release down under early in December.

### **James Pond 2 CD<sup>32</sup>** (Millenium)

Recently released on the Amiga 1200, James Pond 2 has just been spruced up for release on the Amiga CD<sup>32</sup>. The 1200 version features over 2500 colourful screens of action-packed gameplay. There are eight enormous levels, each divided into many sections. The Amiga CD<sup>32</sup> version also has seven tracks of digital sounds added in, along with a full electronic play book and animated, full motion video.

### **Morph** (Millenium)

The storyline follows the transformation of Morph's life, when his uncle's experimental teleport machine goes horribly wrong. Trapped in a world of twinkling atoms, Morph can transform into different physical states - you must guide his perilous journey back to the teleport machine. Morph is an arcade-style platform puzzler, featuring 24 levels in four different stages. Some pretty tricky puzzles will appeal to all ages. Morph is currently available, and the A1200 hard drive-installable version is due shortly, with improved 256-colour palette graphics.

## **Other Notable Titles Due Soon**

### **Disposable Hero** (Gremlin)

As a certified D-Hero, you'll take three spacecraft and fight your way through six levels of non-stop, shoot-'em-up action, as you try to penetrate alien strongholds and return to earth with technological blueprints, that will enable the Free Worlds to complete their glorious restoration against the threat of alien tyranny. Disposable Hero will feature arcade-quality graphics with mind-blowing backdrops, fully-adjustable sound effects and in-game tunes, hundreds of different weapon configurations, mid-level and end-of-level guardians to overcome, four difficulty levels, five rock-hard levels of blasting action, plus more. You'll get to blast the aliens into submission some time in November.

### **StarLord** (MicroProse)

Coming early in '94 is a great-looking game from the lads at MicroProse. Starlord is all about inter-stellar strategy, diplomacy and



space battles of epic proportions. You'll concentrate on flying starfighters and leading your forces in exciting 3D battles, and will soon realise that the true path to success also involves skills in diplomacy, planning, and trading.



**Simulations**  
**Dogfight**  
**Sports Sims**  
**Premier Manager, Goal!**  
**International Open Golf**  
**Arcade**  
**Desert Strike, Overkill**  
**The Chaos Engine**  
**Role-Playing**  
**Space Hulk, Dune II**  
**Blades of Destiny, Ishar 2**  
**Worlds of Legend**  
**Adventure**  
**Indiana Jones IV**  
**Simon the Sorcerer**  
**Platform**  
**Soccer Kid, Yo! Joe!**  
**Woody's World**



**Simulations**  
**Ancient Art of War in the Skies, D-Day**  
**Sports Sims**  
**International Rugby Challenge**  
**Super Sport Challenge**  
**Arcade**  
**Beavers, Lost Vikings**  
**FireHawk, Back Sides**  
**Role-Playing**  
**No bad role-playing!**  
**Adventure**  
**Or bad adventures!**  
**Platform**  
**Super Cauldron**  
**Whale's Voyage**

## **Barty's Game of the Month**

**Goal!**

## **Barty's Hot Tip**

**Hired Guns**



# THE ACTIVISION® GAME GRID

by **Matthew Buchanan,  
Dudley Storey III  
and Simon Barton**

## Woody's World

Vision Software / Kompart UK

**ADU  
APPROVED**

PROSPECTIVE ELFIN OLYMPIAN Woody has been given a mission. He must find the lost Magic Crystal (hidden in a castle some 4000 screens away) and save the world from evil baddies. I guess all platform games have to have a story behind them.

Putting aside his dreams of athletic success, Woody begins his quest in Steam Castle. Woody's World is packed with simple yet colourful backdrops and beautifully-animated cutesy critters, courtesy of talented Vision artist Rod Smith. The scrolling is very smooth, but Woody doesn't travel as fast or jump as far as the main characters in, for example, Zool or Superfrog. Woody must complete each of 60 levels, by stomping on "evil baddies" (or shooting them if powered up), avoiding steam vents and spikes, and collecting coins and chests. Coins increase health, and a certain number of chests must be collected on each level before entry to the next is granted.

By head-butting "heart blocks", Woody can power up to either Prince Woody mode, which gives greater speed and the ability to slide tackle enemies, or King Woody mode, which increases speed and lets Woody shoot his foes - and wear a crown. Extra lives and shooting stars are also available via this method. Woody's World is full of treasure rooms and secret bonus areas, accessible through wooden question-marked doors spread throughout each level. Watch out, too, for unmarked bonus areas - Woody can often walk through walls, or disappear off the side of the screen and climb invisible platforms - which can provide extra power-ups.

Although power-up opportunities are plentiful, Woody's World seems to be a little slow-moving at times. I don't like to say it, but there were times, particularly on earlier levels, when I was actually searching for

baddies to bash. Enemies are always located in exactly the same position, which means some repetitive play while conquering each level. As some consolation, a password system allows a player to return to his current position in his next game, provided he has progressed far enough. At the end of certain levels, Woody takes a bonus train ride which is entertaining to say the least. As Woody rides this roller-coaster, jumping will obtain bonuses galore, and Woody never fails to land back on his seat. During the main game, Woody can fall an unlimited distance without losing any energy.



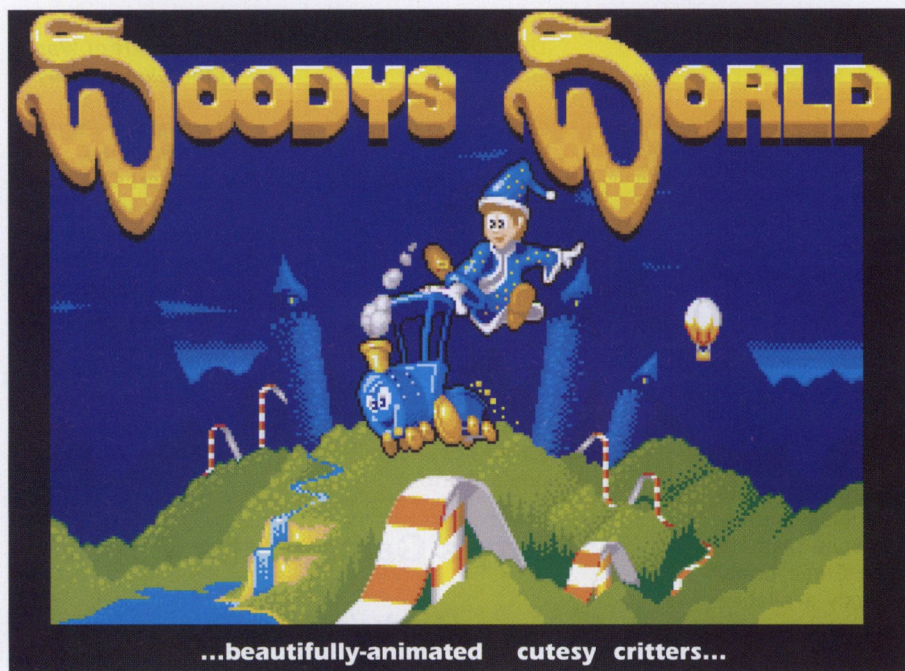
The entire game - the largest platform adventure ever developed for the Amiga - comes on just three disks, and is supplied with a manual in four languages. Woody's World supports two-button joysticks, allowing Woody to jump using the second button. Diagonal joystick movements are required for regular joysticks.

Woody's World certainly scores well in the cuteness stakes, but don't be fooled - despite appearances, many levels are less than easy. And don't expect to complete Woody's World any time this year - 4000 screens of evil baddies can take some beating! Woody's World is a playable, graphical adventure, punctuated with some bouncy soundtracks, which should challenge and amuse, and provide for many hours of unadulterated baddy-bashing. **MB**

Supplied for Review by Micro-World

500/2000	✓	WB 1.3	✓
600	✓	WB 2.x	✓
1200	✓	WB 3.x	✓
3000	✓	HD Install	✗
4000/030	✓	1 Mb Req.	✓
4000/040	✓	RRP NZ\$99	

Graphics	9	Overall	9
Sound	8		
Playability	9		
Value	10		

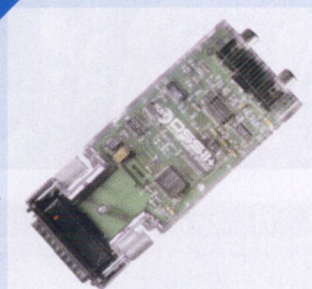


...beautifully-animated cutesy critters...



See page 52 for  
More Competitions

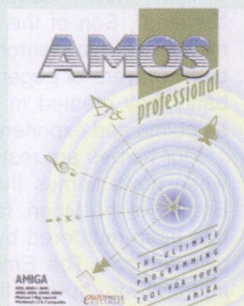
# DSS8 +



**Winner:**  
**Dillon McGregor,**  
**Wellington,**  
**New Zealand**

**Sponsored by**  
**Great Valley Products**

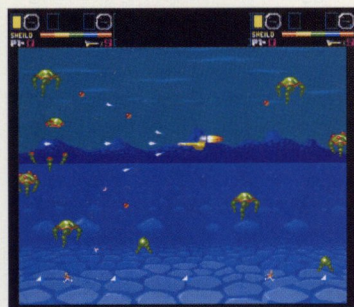
# AMOS Professional



**Winner:**  
**Suzanne Ravallion,**  
**Victoria,**  
**Australia**

**Sponsored by** **Pactronics, NZ**

# Overkill



**Winners:**  
**David Raynor,**  
**Wainuiomata,**  
**New Zealand**

**and**

**K. Ryan,**  
**Queensland,**  
**Australia**

**Sponsored by** **DigiSoft Australia**

# The Lost Treasures of Infocom



**Winner:**  
**N. Larsen,**  
**Queensland,**  
**Australia**

**Sponsored by** **Activision**

# Congratulations to all our winners!



## Worlds of Legend Son of The Empire

MindScape International

SUMMER'S HERE, AND all the heroes with unpronounceable names like Hyguwiff of Zang are ready to adventure. It's role-playing time again.

The new sequel to Mindscape's \*Legend\*, Son of the Empire has the usual merry crew in search of gold, blood and beer. Players of Legend can bring along the band they created in that game, with gold, hit points and experience intact.

Our heroes are resting in a Bodfird tavern when news comes that the Emperor of the Empire of the Moon, father of The Assassin, has been murdered by Ti-Man MoChun, his own advisor. The Empire has been thrown into civil war, split by five armies. Your quest is to re-unite the scattered shards of the Eternal Amulet, which will save the Empire of the Moon from destruction. These Pieces are hidden in the dungeon vaults below the cities of the Empire.

The process of creating a new party will be one familiar to role-players. Your party is limited to four characters, one from each class - Berserker, Troubadour, Assassin and RuneMaster. Ability scores may be refined for each character's skill, but using only four elements, which increase some attributes at the cost of decreasing others. One neat feature is used to change a character's gender - the portrait morphs between the sexes.

Since the Empire has been thrown into war, crossing the countryside to reach other cities and dungeons is a dangerous venture. Armies flying banners constantly rove the land, laying siege to, and taking over cities. A patrol can happen across your travelling band and demand authorisation. You are given one pass for each army, but they can only be used once - after that you must bribe belligerent sentries to gain entrance to a city or attack the patrol.

Your team can take care of trouble as

moment. As well as fighting, Troubadours play magical songs that increase party vigour, while RuneMasters can cast spells. The action flies thick and furious during combat, and you have to be quick to leap from character to character, casting spells and using magical items. Fortunately, Empire's unique iconic statuettes at the side of the screen make this easier than in most computer RPGs. To be plundered from the dungeons is the usual range of magical items - scrolls, protective rings and helms, etc, and supplies of weapons, healing potions and runes, which can be also be bought and sold at city merchants.

Son of the Empire is really played in two sections. Action that occurs above ground, where you can visit the cities, the Mad Monks (who increase the character's levels) and the merchants, is played on a map of the Empire and menu screens with animated pictures. The main action is below ground, in the dungeons and upon meeting a patrol, on an isometric screen with animated characters. Empire's character actions seem limited at first - Push, Take, Look, Open, Shut, and the character's special ability - but they can be used in combination with each other, sequentially. Spell-casting has the same feature. Combining different runes produces different spells, for example, SURROUND and HEAL to heal everyone within reach of the RuneMaster.



because of a few faults - the game is copy-protected and doesn't install on a hard drive; it doesn't take advantage of expanded memory and loads the combat screen for every intervention. Empire also does not use the standard Amiga file requester, and only writes ten save files to a blank floppy disk. Finally, the suggested method of avoiding an enemy army's roving patrols - clicking on your party's banner to make them hide - doesn't seem to work, and the Assassin's "Hide In Shadows" mode does not turn off after you quit from rallying. Other than these small points, Worlds of Legend is a good game, one I can recommend to novice and experienced RPG players alike. **DS**

Supplied for Review by Micro-World

500/2000	✓	WB 1.3	✓
600	✓	WB 2.x	✓
1200	✓	WB 3.x	✓
3000	✓	HD Install	✗
4000/030	✓	1 Mb Req.	✗
4000/040	✓	RRP NZ\$89	



separate characters, or you can throw all of them into the melee with the "Rally" mode, in which each use their own special combat skills. As a team, one character must be leader - whoever you are using at that

Empire also has automatic mapping of dungeons and a great "Chicken" mode, which, when activated, sends your party into full-flight retreat, accompanied by the ignominious clucking of a chicken. However, it's a good way of retreating to a more strategic position, for example, the door of a dead-end room, where you can deal with monsters one by one.

The bones of slain characters are taken with the retreating party, and can be later revived at a city temple, if your party survives.

Son of the Empire narrowly misses out on getting 9/10 and a magical ADU approval

Graphics **8**  
Sound **7**  
Playability **9**  
Value **7**  
Overall **8.5**





## Goal!

Dini & Dini Productions / Virgin Games

ALMOST AS FAR back as man can remember, the working class man has chanted support for his local football team. The world's most popular team sport was then brought into the home with the invention of the home computer, and software companies have fought for the lucrative home computer football market ever since.

First, there was International Football on the Commodore 64, followed by the classic Kick Off, written by Dino Dini on the Amiga. Then came the much-improved and seemingly-unbeatable Kick Off 2, which featured after-touch for curling the ball and many other hot, new additions. Sensible Soccer from Sensible Software, emerged more recently, with its small perspective and excellent gameplay and atmospheric sound effects.

Now Dino is back for another tilt at the title, with his latest effort - Goal!

After a delay of four days for inspection by customs, the package finally arrived - "Kick Off 3" for the Amiga had arrived (albeit with a funny name). After ignoring all the packaging and instructions, and inserting the disks into the trusty A1200, the title screen came up with some quirky music. The Options menu offers a choice of four pitches: normal, wet, muddy or Wembley (no ice!) After selecting duration and wind strength, one gets to choose the keeper's skill and the computer level.

You can select a team from the English, Scottish, European, National, French, Italian, German or Spanish leagues. While on the subject of teams, you can also edit team and player names, and team colours and make up your own leagues at selected skill levels - choose from five, each slightly faster and more skilful than the last. It'll take heaps of practice before you can beat the computer on ACE level.

Goal! also offers a range of now-standard options, including replays (on, off or auto), crowd FX (on or off), extra time (on, off or penalties), and the choice of referees for the day's big match. One new option is the choice of view. Goal! can be played vertically, as usual, or horizontally. Not highly



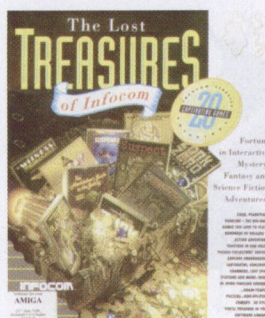
recommended for seasoned Kick Off or Sensible Soccer players, I'm afraid. After thousands of games of Kick Off 1 and 2 and Sensible Soccer, it would take me years to master horizontal control!

Goal! does, however, offer a couple of

original touches. The first is the scanner which can be fixed or automatic - when on automatic, the scanner will automatically be positioned out of the way of corners and throw-ins. Sensible Soccer has no scanner, since the players are so small that many can be included in the view at once - which brings me to the next point, the view. Goal! offers two views - a sensi-view (i.e., small players) or a zoomed-in view. The latter offers much more speed, (especially on the Ace skill level), than Sensible Soccer, which, in turn, requires much more skill to control. You can do the usual curve kicks, lobs, overhead-scissor kicks, lob kicks, and headers. The throw-ins, free kicks and corners have an added dimension of height, allowing the player to have COMPLETE control, including lobs, short kicks or long, aerial throw-ins, and chipped free kicks - the options are limitless.

It will take several hours of practice to time shots perfectly, and even weeks to master the art of head-on tackling. The view feature is one of Goal!'s main attractions, and the tackling also adds to the game's

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See page 52 for details...

depth. Sensible Soccer is 99% sliding tackles, whereas Goal! includes both head-on and sliding tackles. (A head-on tackle requires a player to run directly in front of the player controlling the ball, thereby stealing it from him).

Why is head-on tackling necessary? Another excellent, new feature in Goal! - acceleration - adds an entirely new facet to the game. A player running from a standing start takes a little while to reach top speed, and cannot turn as sharply when running fast, as when running slowly. With acceleration, a striker can sprint past defenders turning around (after missing a tackle). Forget it, buddy. He's gone! Hence head-on tackles are important. But acceleration also means that a striker can slow down and avoid faster defenders by making them overrun the ball - the possibilities are unlimited. The whole concept of acceleration adds significant realism and variety to the game, since sliding tackles alone are ineffective. Unlike Sensible Soccer, where passing or kicking the long ball forward are the only ways to play, Goal! offers a vast range of tactics and the running

game is superb. There's nothing quite like sprinting through the midfield, then slowing down faking the pass and side-stepping the



last defender, before blasting a curling shot into the top corner of the net.

To answer all those Sensible Soccer fans keen to hear about the sound effects - they're great. Along with the usual chants from supporters, come increased crowd noise as the forwards near the goal area. Spectators sigh as a shot misses; an appreciative crowd claps for a good effort at goal, and jeers in disapproval when the dodgy Kuwaiti ref misses that foul on Ian Rush. Overall, sound effects are excellent - at least as good, if not better, than those in Sensible Soccer.

As soon as the ref blows the whistle to start the match, you will be aware of the excellent graphics - the zoomed-in view shows a closeup of all action, which is fast and furious in typical Kick Off style. It takes time to get used to the sheer pace of the game, and requires truckloads of skill tablets.

The crunch question is obviously: is Goal! as good as Sensible Soccer? For fans of the original Kick Off series, Goal! is better, retaining the speed and high level of skill - the more you play, the better you become.

Goal! has a learning curve of several months! For those brought up on Sensible Soccer, it is well worth a look. The features and gameplay, in my opinion, are unmatched, and with the added realism of acceleration and speed-related turning, Goal! takes the cake. **SB**

Supplied for Review by Micro-World

500/2000	✓	WB 1.3	✓
600	✓	WB 2.x	✓
1200	✓	WB 3.x	✓
3000	✓	HD Install	X
4000/030	✓	1 Mb Req.	X
4000/040	✓	RRP NZ\$99	

Graphics 8  
Sound 9  
Playability 10  
Value 9  
Overall 9.5



Once again, Issue 5's PD Disk is packed with useful utilities - only available to subscribers! If you would like the chance to receive this disk, plus our Games Disk, with every issue of ADU, subscribe now!

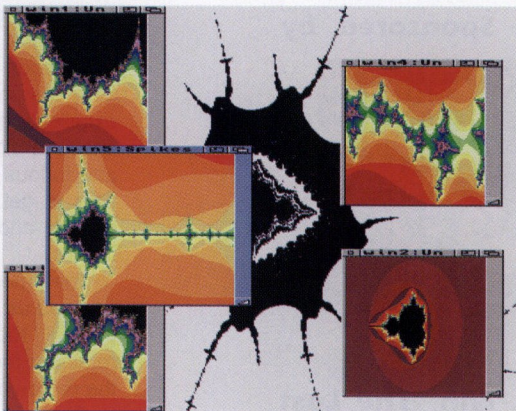
# The PD Disk For Subscribers Only!

## Mand2000 Demo Cygnus Software

Mand2000 is meant to be nothing less than the finest Mandelbrot exploration program available on any computer. The designers have attempted to combine speed, power and simplicity with a few unique features, all designed to make it easy for you to discover uncharted regions of the Mandelbrot and Julia sets.

Point-and-click, animated zooming is the most intuitive way of exploring the Mandelbrot and Julia sets - it's as easy as using a zoom lens on a camera. To the best of the programmers' knowledge, no one else has employed this method.

This demo version has some advanced features removed, but is amazingly quick, even on 68000-based Amigas. ■



## Post v1.86enh by Adrian Aylward

Post is a software-based PostScript interpreter, which provides a screen representation of any PostScript file, and includes an interactive mode which can be used to enter individual PostScript commands, one by one. Post will also convert a PostScript file to its dot matrix equivalent, allowing such a file to be printed on a non-PostScript printer. It is easy to install, and is provided complete with one PostScript font and comprehensive documentation.

We will include on next issue's PD Disk a copy of several different Times fonts for use with Post. These are from the Fred Fish collection, disk number 830. For those interested, other fonts are also available on disks 828 and 829. The fonts must be placed in a directory which is assigned to PSFonts: Post will look for the logical device PSFonts: and if not found will ask you to insert it. For convenience the fonts are unarchived into a directory called.. you guessed it.. PSFonts.

If you are going to use type 3 Adobe PostScript fonts from other programs, you will have to ensure that they have the appropriate name, i.e., Times-Italic is referred to as Times-Italic.psfont by Professional Page. Post will not be able to use the font if the disk name is not identical to the true font name found in the header of the font description file. A quick, undocumented note here about Post and its usage - we have been unable to get Post to display any output when running from the CLI. However, when run from Workbench, it behaves flawlessly. ■

## SnoopDos v1.7 by Eddy Carroll

Have you ever wondered why a particular program won't seem to run? It could be looking for some special files which you've forgotten to install in the appropriate place. SnoopDos was designed to let you resolve situations like this, though it's probably useful for other things too.

Those who don't like reading long instruction files can simply run SnoopDos with no options, and it will open a window on Workbench, ready to display a continually-updating record of all disk activity. For a more detailed explanation, we suggest you read the supplied documentation.

SnoopDos monitors all calls made by any program on the system to the CurrentDir(), DeleteFile(), Execute(), LoadSeg(), Lock() and Open() functions in the AmigaDOS library. The exception (as usual) is any program written in BCPL; this includes most of the commands in the C: directory.

SnoopDos will inform you of all attempts to load libraries, devices and fonts, or if any program looks for a specific file (for example in S:), specific disk volume or directory. This can be very useful when you're playing with new software which may require certain fonts or other support files. ■

Issue 5's Games Disk was supplied by Andrew Kreibich and Perry Rosenboom, and contains Expello!, Amastermind, Blocks3D, Mancala and Parattack. Look out for more software from these guys on future disks...

## Installation of Libraries

Several letters have arrived at our office, regarding the omission of libraries from Issue 4's PD Disk. Firstly, we can assure you that all libraries **were** supplied.

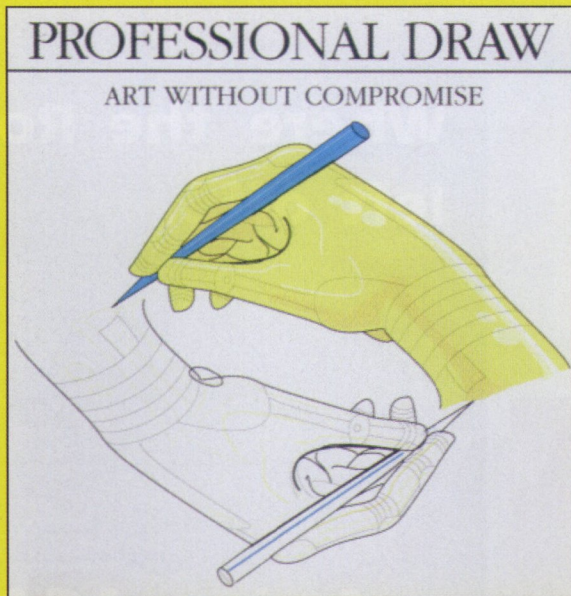
An explanation of what a library is, is possibly required. Libraries are found in the libs: logical assign (actually a directory called libs which resides on your Workbench disk). A library contains system function calls, which many programs require to run. Have you ever noticed how many programs use the same design of file requester? These file requesters, along with many others (font, screen, palette, etc.) are found in the asl.library, supplied as part of the Workbench software. If a particular library cannot be found, a requester is displayed informing you that x.library could not be opened.

On Issue 4's disk, libraries were unarchived into the libs directory of the destination disk. Unfortunately, we omitted to give instructions as to how to access these libraries. So here they are. Copy the library file from its directory to the libs directory of your boot disk. To achieve this, open a Shell window, change directory to that of the library in question, and type: "Copy #?.library to libs:". You will then be asked to insert the Workbench disk, unless your system has a hard drive. If this disk is full, make a copy of it, and delete any seldomly-used system applications, such as those in the Utilities directory.

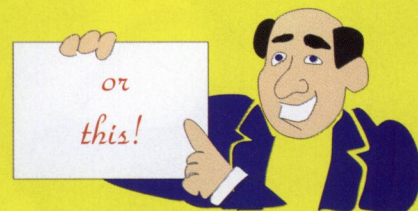
If you are running Workbench 2.0 or greater, and prefer not to copy libraries to your Workbench disk, use of the Assign command's ADD option is in order. Information regarding the use of this flag can be found in Using the System Software. ■



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