

February - Volume 12, No 2

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NDD

Australian Commodore &

AMIGA

For Professional and Home Users

Review

Deluxe Paint V Personal Paint 6

First Impressions

Workbench 3.1

Is it worth upgrading?

Digital Video Editing

VLAB Motion comes of age

* Recommended Retail Price



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LightWave MODELER Screen



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- Imagine CD** Objects, attributes, textures, tips for Imagine **\$120**
- Raytracing 1&2** Objects, fonts, Imagine, LightWave, Real 3D etc. **\$69 ea**
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WITH 4 MEG

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Up to 64 Meg of RAM
Space for 68882 FPU
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2 SIMM Sockets

WITH 4 MEG

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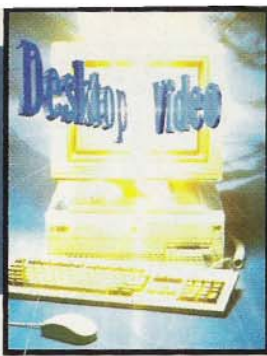
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Many of our clients are using the PAR with 3D rendering packages such as Lightwave to produce TV commercials, Music videos and much, much more.

Here are some of the reasons the PAR has become so popular :-

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- Full 24Bit Colour
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- Y/C output (S-VHS® Hi8®)
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Both cards work with the powerful Studio16 V3.01 software. Drag and drop, timeline editing, real time fades and cross fades. True broadcast audio excellence for your Amiga.



Here at last.... an affordable, broadcast quality non-linear editing system has finally arrived in the form of V-Lab Motion!

Its a fully functional non-linear editor and real time 24-bit animation recorder with audio support via the Toccata 16 bit stereo sampler card.

Full time line edit control with A/B roll type interfades and wipes. Also keying and "Blue Box" effects.

V-Lab Motion was "product of the year" in AMIGA PLUS (Germany) as well as a "Perfect 10" an AMIGA COPUTING First.

Here are some of the features of the V-Lab motion system :-

- Outstanding quality non-linear editor
- 16 bit audio with the Toccata
- Complete ARexx support
- Comprehensive digital effects
- Digital character generator
- Chroma keying for "Blue Box" FX
- Composite & Y/C inputs
- Composite & Y/C outputs
- Freely adjustable data rates
- Optional Component in/outputs
- Powerful Movie Shop Software
- Time Line & Hierarchical editing
- Use as animation recorder
- \$ 2788 for V-Lab Motion
- \$ 869 for Toccata

"The V-Lab Motion system will blow your socks off!"

-- Michael Ricks, Producer/Director
-- SUNSTONE PICTURES, Phoenix, Arizona

SCALA ^{NEW} MM400

This latest upgrade to SCALA adds multi-platform support with the addition of the File format EX's, New text wipes, better anti-aliasing of text, X/Y font scaling and more. New EX's for the Neptune genlock are also included in this new upgrade.



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Cover created by Jarrod Pudsey
Image: 1500 x 2000
Render Time: 1.5 hrs
Program: Lightwave
Machine: A4000/040/40MHz

Regulars

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Bring on the fat lady

► A six week drought of information on the future of the Amiga has seen the rumour mill cranked up to maximum revs. Conflicting stories from opposite sides of the Pacific are keeping pundits on both sides guessing as to who has(?) actually landed the technology. However, the good money seems most likely to be on Amiga International - the U.K. bid led by ex-management. Some sources are saying celebrations have already taken place behind the closed door of David Pleasances' office. Others say CEI people, the American counterpart to the U.K. bid, are still convinced they're in the running.

To muddy the waters even more there's also several players who are now promising clones of the Amiga. MacroSystems have the best design so far and say delivery could be a mere matter of months. Their system will be RISC based and won't include any of the custom graphics chips that make an Amiga what it is. Instead, the high speed processor will emulate the missing silicon in software. This means a lot of Amiga software won't run - but the applications that really matter will. MacroSystem's VLAB digital video editing solution is one of the prime candidates to work on the new Amiga clone at speeds that will out-pace anything offered by alternative hardware. We wait with baited benchmark test disks in hand to see that one - we'll keep you posted as more information comes to hand.

Inside this months Amiga Review, we've added a new column called

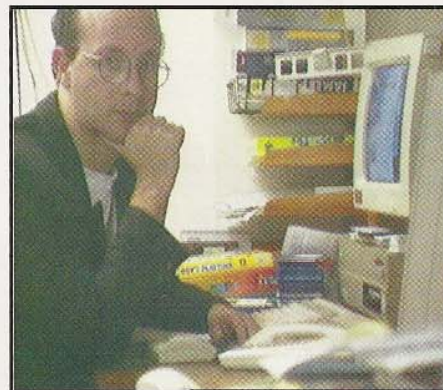
Demo Scene, which will keep an eye on the latest in hacker demos. There's also an updated list of Amiga Specialists and Service Centres. (Last months listing suffered a case of pre-holiday-itus getting in the way of accuracy. We apologise profusely to those who were missed out.) We're taking more and more calls from Amigans looking for support, so you can look forward to both lists appearing on quarterly basis from here on.

Despite the lack of new Amigas on the market, new software keeps rolling out. This month we've checked out Deluxe Paint V, Personal Paint 6.1, PC Task 3.0 - and Daniel Rutter has a close up look at Workbench 3.1. Pagestream 3.0d turned up in time for us to find it's on the improve - but still a tad on the slow side - more on that one as soon as they hit version 3.1.

Over in Europe, dealers are reported to be eagerly awaiting the return of the Amiga - with 85% saying they want it back in one recent survey. Industry commentators say it seems people didn't go out and buy other computer systems over Christmas instead of the Amiga. Rather, they opted for different types of purchases. So, the news is still favourable.

It's looking like we may really have a new company behind our machine in time for our next issue. Keep watching the sky!

- Andrew Farrell



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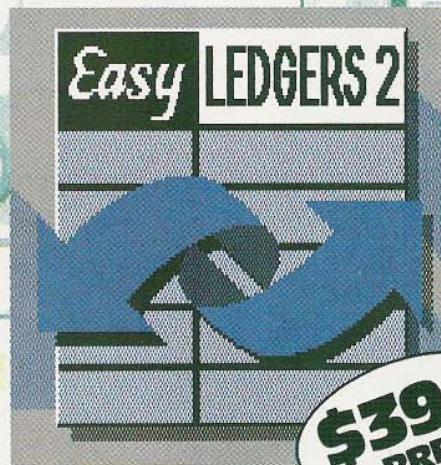
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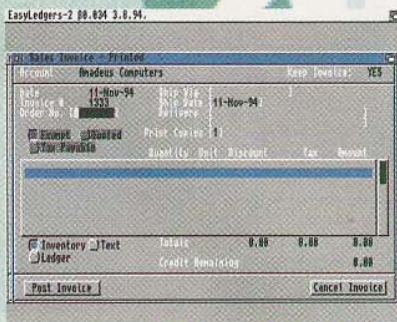
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A1200 2.5" Drives:

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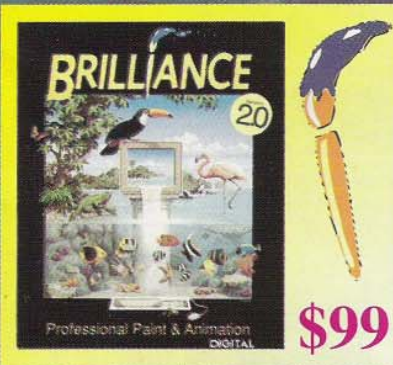
Game of the Month



Cannon Fodder 2

"Still having so much fun at War"

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- Realtime Ham8 display.
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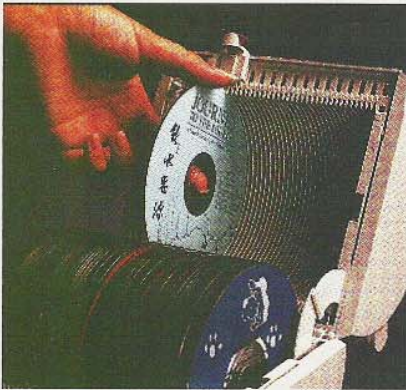
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E & O E

Nifty storage boxes



▶ If you've got a computer, you've got disks, and probably a lot of them. And if you've got a CD-ROM drive, you probably have quite a few discs lying around - if you're like me, they're in the wrong jewel cases or just sitting nude on top of something, waiting to get scratched.

CD3 make boxes for floppies and CDs, each of which has a capacity of 40 disks. The floppy box has a spring mechanism that lets you slide a red indicator button to the disk you want and press it; the disk pops out for you to grab.

There's an index inside the lid, and stickers and spare index cards are included. There's also a pretty cheesy plastic lock, which will stop the disks falling out but, as usual, has no real security value.

The CD3 CD box is cylindrical instead of square, and stores 40 bare CDs (no jewel cases or booklets).

It has its index card on the top, and a vaguely phone-indexy sort of pull and slide indicator lets you choose the disc number you want. Open the shell, Pac-man style, and the selected disc is lifted clear.

There's a carry handle that locks the CD box closed, and the selector can also be used to lock the box if you move it to the extreme left. Selecting discs can be a tad fiddly, but certainly no more so than juggling fragile jewel cases.

The CD box can also be used for audio CD's - it's good in the car. But a note to creative drivers - Superglue the end caps on.

Both boxes are available from the Australian distributors, Corvette Technologies. You can get them in beige, with the CD box available in black as well, and they both cost \$59.95.

Contact Corvette on (02) 663 2245 for more information.

New Microvitec Monitor

▶ The popular Microvitec 1438 14 inch monitor has now been joined by a 20 inch model. The new model still supports all Amiga video modes and supports full screen width DoublePAL

modes under OS3.1.

It has digital controls and position memory (the lack of position memory is the 1438's most irritating feature...), and it retails for \$2995. The 1438 is \$799.

For more information contact Amadeus on 1800 808 503 or Sigmacom on (02) 524 9846.

Big new NEC displays

▶ NEC, whose pricey but high class monitors are seen on all the best expense-account-equipped desks, have released some new presentation displays.

The price? Well, the 6PG, which syncs from 15kHz to 65kHz, is a mere \$20,570. The 9PG, which goes up to 93kHz, will set you back \$27,830.

The new 29 inch Multi-sync 4PG monitor is the biggest NEC's ever built, and features a super flat anti-glare screen, two RGB inputs, two video inputs and the ability to hook together up to 50 monitors. There's also a remote control that lets you adjust all the monitor settings. You can feed the 4PG output from a 24 bit graphics board or just about any video format - PAL, NTSC, HDTV, you name it. All this for just under \$7000.

Prospective buyers are doubtless jamming NEC's switchboard on (02) 868 1811.

If that's just not expensive enough for you, consider NEC's 6PG PLUS and 9PG PLUS projection systems, which can also take input from just about anything - including Amiga 15kHz modes! Both projectors can throw a sharp, bright image onto a 60 to 300 inch diagonal screen (that's one and a half to seven and a half metres, kids).



Media Editor Update

▶ The latest version of Interactive Microsystems' MediaEditor video editing software is out, with variable screen resolution, point and click A/B-Roll editing and Sony VISCA control added. There's built in control for the Video Toaster (of no use to PAL customers) and the Sunrize audio boards.

You can even run programs or AREXX scripts from

the edit list.

MediaEditor supports Panasonic, JVC, Sony and Sanyo serial control decks and, for the less well heeled, most infrared controlled decks too.

Contact Mediaphile on (047) 842 305 for more information. Price (\$US150).



Australia CD Productions

▶ The abovementioned organisation is for people interested in contributing to Australian made Amiga CD-ROMs, containing programs from Australia and New Zealand.

They invite anyone who's written a shareware or public domain program that they'd

like included to contact them, and are also interested in commercial applications, finished or at the demo stage.

Send software to Gary Blaine, 5 Walters Ave, Gladstone 4680; call (079) 721 349 for more information.



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Market News

There are, indeed, lies, damned lies and statistics, and this is particularly true of computer industry statistics. Computer companies are renowned for dodgy estimations of market penetration and other pertinent data - in a classic example, Microsoft likes to quote the total number of Windows users as being the total number of copies sold, disregarding people who upgrade and don't use their old copy any more.

The Australian Bureau of Statistics, on the other hand, don't have a vested interest and so should be rather more reliable. They've released a publication on "Household use of Information Technology", which contains some interesting stats on Australian computer use - albeit almost a year out of date.

2300 households were surveyed, and 23 per cent said they regularly used a computer. 4.4 per cent have a fax machine, 2.9 per cent have CD-ROM equipment, 3.8 per cent have one or more portable computers, 20 per cent have one or more desktop machines, and 18 per cent frequently use a dedicated games machine. 1.5 per cent have a scanner, 3.9 per cent have a modem and 18.2 per cent have printers.

The most computer-friendly state was the ACT with 35.8 per cent of households regularly using one, then came NSW on 23.9 per cent closely followed by Victoria, WA, SA, the Northern Territory, Queensland and finally Tasmania on 18.8 per cent.

Of the regular computer using households, 26 per cent estimated they'd spend up to \$3000 on more computer gear in the next 12 months.

Taking into account the expected expenditure ranges listed in the sur-



vey, and the likely inaccuracy of the sample and assuming the people actually spent as much as they expected, the Australian home computer market spent between 500 million and a billion dollars over the twelve month period from February 1994 until now. No wonder home users are the flavour of the month for hardware and software makers!

One shortcoming of the survey is that it didn't distinguish between different computer models. A household that regularly used a C64 with an antique daisywheel printer was treated as the same as one that used a 90MHz Pentium with a ten page per minute Postscript laser printer. There'd likely be a considerable difference in the projected expenditure department, but a breakdown of the models of computer still in use out there would have been a welcome addition.

Still, it's nice to see statistics that aren't out to make someone look good. You can get Household Use of Information Technology (cat. number 8128.0) from Australian Bureau of Statistics bookshops for \$10.

Call (06) 252 5609 for more information.

Media Watch Spottings

Algae tracking

Phil Howell of Woodberry, NSW, spotted an Amiga on the Newcastle NBN news on the 18th of October last year. The news piece was on blue-green algae pollution, and a system to spot outbreaks by enhancing aerial photos was running on something with an Amiga mouse and a 1084 monitor. We didn't run his spotting the first time (hey, we get a lot of them, all right?), so he sent it to us again. All RIGHT, already!

Shark docco

Dave and Miriam Simpson (who are, under the circumstances, excused for having a dodgy picture of the eponymous cartoon family on their letterhead) were watching a documentary on whale sharks on Brisbane Channel 9 on the 6th of December. The researcher featured on the program had either a 500 or a 1200 sitting on his desk, with what might have been a 1084. He was definitely using MaxiPlan

IV. Oh, and in answer to your question - articles are to be sent as ASCII text, with as little formatting as possible.

Disney and Ginger Meggs

Warwick Gaetjens of South Plympton, SA, was watching Entertainment Tonight (well, somebody has to) at 1:30 in the morning on December 1st and spotted, very briefly, an A590 with some sort of left side expansion running what looked like Disney's Cell Animation program. The machine showed up during a segment on the new animated film "The Swan Princess".

He also spotted a blatant Amiga reference back in September, in the Father's Day Ginger Meggs strip. The relevant panel is reproduced below. Warwick also offered to clean our boots, so he's getting a free subscription. The shoes, also, will be in the mail. □

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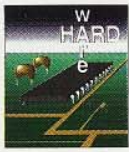
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Digital video editing comes to the Amiga

By Philip Benjamin and Simon Shead

► As the successor to its famous VLab framegrabber, MacroSystem have produced a new expansion card called VLab Motion, which enables the user to play and record full motion video to a hard disk in real time! The digital video signal produced is high grade full motion, at 50 fields per second, at YUV 4:2:2 quality, up to 768 x 576 pixels.

Allied to this is MacroSystem's Toccata audio card. This card boasts 4 stereo inputs, one stereo output, and is capable of digitizing stereo audio direct to hard disk in eight or 16 bit modes, at frequencies up to 48kHz (DAT quality - compact disc uses 44.1kHz). The two boards compliment each other perfectly and integrate into a powerful system for video editing and production work.

What is it?

The VLab Motion board is a full-size Zorro-II card with composite and Y/C (S-Video) inputs and outputs. As the video signal is fed into it, each frame is digitised then compressed at a user-selectable rate using dedicated on-board JPEG compression chips, and written out to a hard drive in

real time (less than 1/50th second). This is pretty amazing in itself; a frame of video at 768 x 576 pixels in 24 bit colour contains 10,616,832 bits or 1.3Mb of data.

There are 25 frames per second in video, so for uncompressed storage you would need to move 32.5Mb to a storage device every second! A better solution is to compress each frame from 1.3Mb to something under 100k using JPEG.

This results in a data stream of under 2.5Mb/sec, something a fast hard drive and controller can handle. The VLab Motion board does not require a timebase corrector and will accept poor television reception or VHS comfortably, as well as high quality S-VHS and Hi8. It is capable of PAL and NTSC input and output, and also incorporates a genlock with chromakey.

This feature allows you to record a background and superimpose another video signal over the top. So if you always wanted to be Superman, just record a moving sky, then throw on a cape and stand between a one-colour wall that's a different colour to any bits of you, and a video camera. The

board combines the two images and replaces the wall with the sky footage, and you will appear to be flying.

Why JPEG?

JPEG is better suited to editing than MPEG, because each frame is a file that can be accessed individually. MPEG frames need to be made up from frames on either side, so if you cut a piece out, you can no longer reconstruct the remaining frames.

The true power of the system is in the MovieShop editing software. It allows you to re-arrange the scenes that you have recorded simply by dragging and dropping in the desired order. You can reuse, cut and paste at will - none of the original frames will be affected.

Additionally, you can add some DVE's (Digital Video Effects, such as fades, wipes or mosaics). You can also export the scene as IFF files and apply special effects externally using image processing software like Art Department Professional (ADPro). The software allows you to import individual frames and create a new scene from them. In most cases,

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about everything you would ever need. Version 1.0 was released in June 1994, with updates released at regular intervals.

The current version is 2.1, and has matured considerably. The program is very stable and I was pleasantly surprised by the number of additional features. It appears to be very well written; there are lots of message requesters with an explanation when you do something wrong.

MovieShop is style guide compliant, and you can customise it to your liking using whatever fonts, screens and windows you wish. The most likely reason for failures is pushing the host machine too fast.

Even on my '040 A3000, the SCSI bus can't handle more than about 1.2 Mb/sec sustained, though the hard disk's redline is much higher. SCSI bus lockups and system crashes were common until I throttled back. After I installed a Z3 Fastlane Fast SCSI-II controller, these problems practically vanished.

The biggest problem I found with the software is too many options! You can open and close functions at will, but it is nice to have everything open and in front of you without overlapping.

On a standard hires/lace screen you only get about five windows open without overlapping; there are about two dozen available. A Retina display would be helpful here, you could have a 1280 x 1024 display with everything open at once, as well as 24 bit painting and animation, with an optional video output. Other options are to specify a 1280 x 1024 hires/lace screen and use the mouse to scroll around, or write ARexx macros to open and close related groups of windows with the press of a key.

Software features

I am currently reviewing

MovieShop Version 2.1. The functions are as follows:

INPUT SELECTION - Here you select video and audio sources, including gain levels and VTR correction.

SCENE CONTROL - Basically, the VCR type buttons for control over play, record, shuttle, stop, pause, loop etc., and selecting which scene to view. There's also an LED style readout for position in minutes, seconds and frames.

SCENES - Lists the title of the available scenes as well as the length of the current scene.

TIMELINE CONTROL - Similar to the scene control, but allows you to control the overall edited movie as opposed to just the active scene. It also allows you to specify a smaller portion of the movie to view, and contains gadgets to "proofread" your timeline for errors, and execute audio and video effects.

TIMELINE - This is where the editing is done. There are two selectable versions; a simple version for simple editing (like two A/B rolls with effects), and an enhanced version for multiple sources and complex DVE effects. Just click on a scene and drag it like an icon to this window, and a graphic representation will appear to show its length and start and stop times.

You can assemble multiple scenes end to end or overlap them on multiple lines with transition effects. The Time Line hence does the equivalent of A/B rolls (two mixed video sources) via a switcher/mixer/SEG (special effects generator). With the one computer, you effectively replace two or more source VCR's, a record VCR, and an SEG combination, saving tens of thousands of dollars on equipment.

The downside is that computer generated special effects take time.

A fade up from black of one second duration could take a couple of minutes to calculate. If you are doing a music video with hundreds of special effects in a couple of minutes, you might be better off using dedicated equipment. On the other hand, if you have no budget, lots of time and a bit of patience, you can use this method.

There are many options here to customise the way editing is done. Audio editing is also done here - split audio edits, unlimited mixing, volume changes and more are available.

EDIT - This window allows you to mark a block of frames from a scene, and cut, copy or paste them as desired, as well as copying, creating, grouping and deleting scenes.

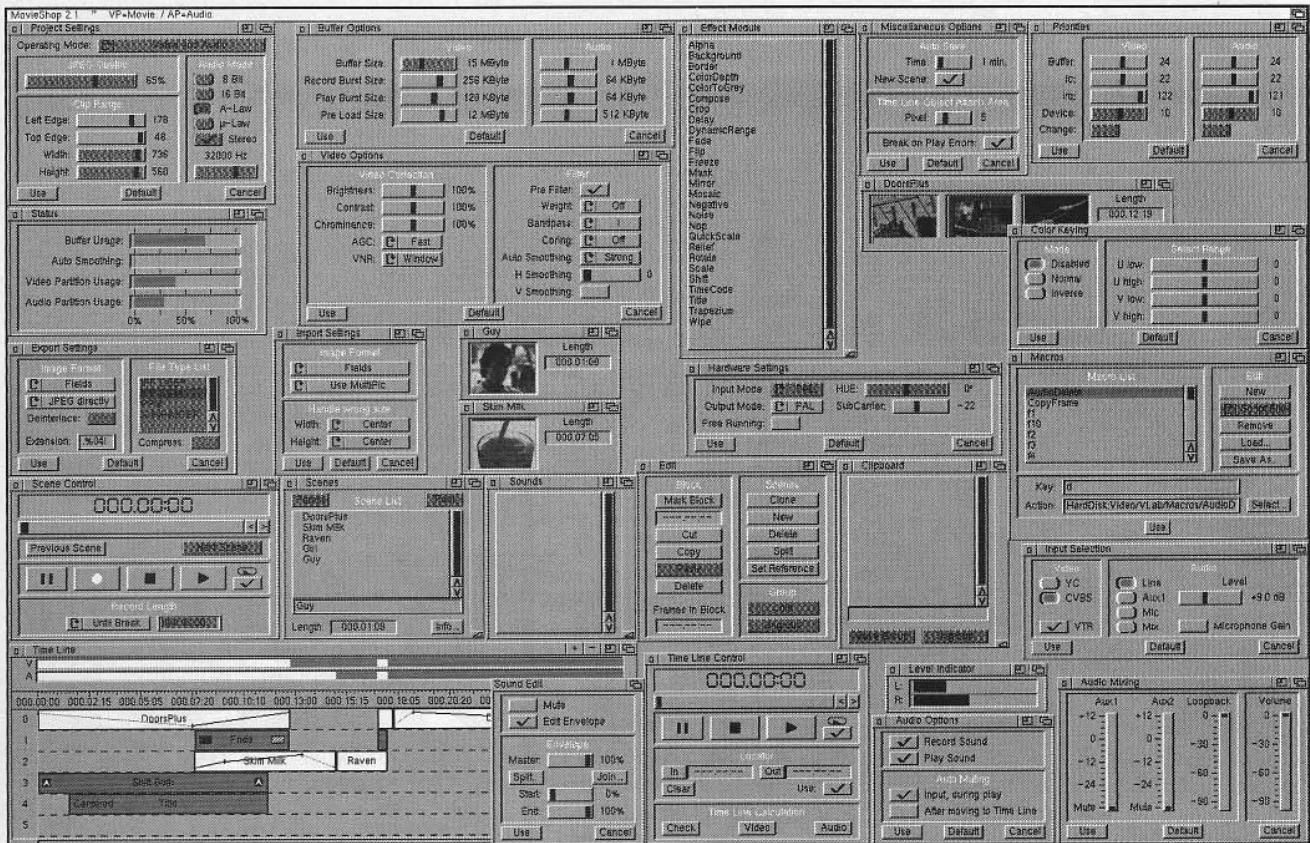
CLIPBOARD - This is used to select scenes to group together, in conjunction with the SCENE window.

SOUNDS - Allows you to import pre-recorded sound effects for inclusion on the time line in conjunction with other video and audio sequences.

EFFECT LIST - A list of modules, not unlike ADPro's operators. They can be stretched on the time line to represent transition time, so that a fade up from black can take two frames or two minutes depending on how much it is stretched.

These effects are modular - they can be written by third-party developers and added at any time. The present effects are ALPHA, BACKGROUND, BORDER, COLOR DEPTH, COLOR TO GREY, COMPOSE, CROP, DELAY, DYNAMIC RANGE, FADE, FLIP, FREEZE, MASK, MIRROR, MOSAIC, NEGATIVE, NOISE, NOP, QUICK SCALE, RELIEF, ROTATE, SCALE, SHIFT, TIMECODE, TITLE, TRAPEZIUM AND WIPE.

COLOR KEYING - This con-



this eliminates the need for single-frame recorders.

The Toccata board is a 3/4 size Zorro-II card that fits into any unused slot. It basically operates as any other audio digitiser, but has extremely high performance.

The Toccata is capable of mixing all inputs via the software mixing panel, and outputs up to 48kHz stereo in 16 bit resolution. It records audio without the need for SMPTE timecode, and matches the video stream accurately, keeping everything "lip-synced". There are options available for SMPTE timecode and MIDI interfaces where necessary for special applications. The Toccata is capable of saving the audio data in 16 bit or 8 bit, and can use compression called a-Law or u-Law.

These compression methods were originally developed by the telephone industry to improve

voice clarity. They have the advantage of sounding like 16 bit sound, but taking up half the space. Even at 48kHz, stereo, 16 bit, the data stream is only an additional 200k per second.

Requirements

The system requires at minimum an Amiga 2/3/4000 with one spare ZORRO-II slot per card, Workbench 2 and 2Mb fast RAM. Seriously, I would recommend an Amiga 4000, LOTS of fast RAM, a large Fast SCSI-II hard disk and controller, and a Retina or other programmable resolution display card, to see all the control options at once on one screen.

Installation

Installation is a breeze - just install two cards in the host machine. The software uses Commodore's standard Installer utility. Hook up

a video source and audio source(s) and you're ready. The output can go to a VCR or monitor.

This is a "two monitor system" - one for looking at the control screen and one for video output. Alternatively, you could use something like a 1084 monitor and switch between RGB and CVBS if you like, or use another genlock (I use the IV-24) to overlay your control screen over your video.

A 100 page spiral-bound V-Lab manual is provided to give you the basics and get you started. The Toccata has its own 28 page manual. Both do a pretty good job of explaining the general operation.

MovieShop software

I am very impressed with the level of sophistication of this software - the control over the incoming video signal alone has just



trols the settings for the built-in colour keying function. It determines what range of colour in the video signal is to be made transparent, for overlaying with another video signal.

STATUS - The greatly improved status window gives real-time graphical feedback of the amount of buffer memory in use during recording and playback, as well as the percentage of the video and audio partitions in use. If auto-smoothing has been enabled, a further graph shows the level of smoothing in use.

AUDIO MIXING - The audio mixer panel provides mixer sliders for the inputs and output. A bar-type VU meter shows the audio level.

SETTINGS MENU - The Settings menu contains many options. Under Project Settings there's JPEG quality, clip size, operating mode and audio quality. Buffer Options covers the buffer sizes for audio and video recording and playback. Video/Audio Options include brightness, contrast, chrominance, AGC, VNR, filter, bandpass, coring, and smoothing controls.

Import/Export options covers image formats, and how fields or frames are handled during import and export. Hardware Settings lets you select PAL or NTSC in/out, hue and sub-carrier settings, and free-running. Finally, Miscellaneous Options contains the autosave, timeline and error options.

All of the functions listed above can be controlled through ARexx. An ARexx macro can be written to take advantage of a group of functions and effectively create additional functions. Audio and video information is written to dedicated hard disk partitions, and these partitions can be locked and unlocked as required, to safeguard a project in use.

Ratings

Board construction: ★★★★★

Excellent quality, surface mount, socketed IC's, quality connectors. Composite video connector is common RCA instead of professional BNC.

Installation: ★★★★★

Easy for hardware and software.

Manual: ★★

Adequate for introduction. Could use a reference section and index.

Ease of Use: ★★★★★

Bit of a learning curve, but relatively easy to use once you understand it.

Software: ★★★★★

Constantly updated, with additional features added. Reliable operation.

Performance: ★★★★★

As good as or better than other PC systems I have seen. Unable to run it to limits yet.

Compatibility ★★★★★

Multi-tasks well. No hardware conflicts experienced.

Support ★★★★★

Received two software revisions in 6 weeks. MacroSystem openly invite criticisms and suggestions. No direct contact yet (no need). Reputable company, dealing with Amigas for some years. Support BBS provided (Germany), latest software for download.

Value ★★★★★

Expensive in dollars, but cheap for what it does.



The Need For Speed

Certain aspects of MovieShop are time consuming, notably special effects. These effects can be applied internally or externally in programs like ADPro, which can produce some sophisticated effects to rival high end machines.

If I were to save out 25 frames for processing in ADPro, I could then load them in via FRED, apply multiple processing functions, save them, and import them back to MovieShop (which will load FRED ".seq" file lists).

In both ADPro and dedicated SEG's, the setup time could be anything from seconds to hours, depending on the sophistication of the effect.

Assuming I spend the same amount of time setting the effect up (in practice, SEG's would probably be faster to set up), the SEG will then process the 25 frames of video and take one second to apply the effect. ADPro on the other hand would need to process each frame individually.

In a recent test, I wrapped moving video around a sphere - a simple operation in ADPro. However it took 15 seconds per frame to process, and that was on a 36 MIPS 68040! If I were to morph each image, the time required would be considerably greater.

On the other hand, it's faster than single frame editing. Suppose you've ray-traced 25 photo-quality frames of a moving object in Imagine. You can load them into MovieShop as a range by using a file requester, and they're immediately ready to play back!

Using traditional single frame editing, employing an expensive frame-accurate recording deck, you would have to display the image, have the recorder pre-roll, play, then record one frame. It would then repeat this process 25 times.

Apart from a lot of wear and

tear on the machine, this could take 15-30 seconds per frame.

There are advantages and disadvantages to both systems. Compared to traditional tape based systems, this non-linear editing system offers an exciting flexibility and ease of use. Some things are better suited to traditional editing - material requiring lots of special effects and transitions, for example.

MacroSystem's product excels in assemble or butt-editing, and can complete the task much faster than a tape based system. Random access to material is far superior to linear tape systems.

This is similar in principle to accessing your favourite music track on CD and cassette - the CD is almost instantaneous as it directly seeks the track, whereas the cassette has to spool past other material.

Because it is in a digital format, there is no further degradation of the signal. The output is the same after 100 plays, unlike a tape which is prone to dropouts and other wear-related problems.

Although the complete system is not cheap (after buying the host machine, accelerator, controller, memory, large fast hard disk and digitiser boards), it is capable of performing the function of an edit suite costing over \$50,000.

It's ideally suited for small production house work, animation, single frame recording and computer graphics special effects.

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Magic Lantern Feedback

We ran a review of the Terra Nova Development program Magic Lantern in the January issue of Amiga Review; the author, Patrick Kirsch, was not very complimentary about it, mainly because large bits of it didn't work for him. Peripheral World, the Australian distributors, rapidly forwarded us an unhappy letter from Michael Todorovic of Terra Nova (Magic Lantern's author). The important points from his letter appear below.

The reviewer stated that ML provided a "bewildering array of options to set" when building an animation. Magic Lantern provides the user with tremendous flexibility to build animations. It allows the user control over compression for size, speed or both, as well as other options to optimise a particular animation for best playback.

However, if the user doesn't understand the options, he can ignore them because the program provides reasonable defaults.

The review also mentioned that ML provides no image processing functions. This is true; we felt we should not compete with the capabilities of such fine programs as AdPro, Image Master and Image FX. These programs have years of development effort invested in them; attempting to duplicate this effort would only have forced us to raise the price of Magic Lantern when most of our users already have one of the other programs.

We do not understand why Magic Lantern's audio didn't work for Patrick. Internally, we have processed hundreds of audio files with Magic Lantern (we use it as an internal development tool). We would appreciate a copy of the sound files so we can duplicate and fix the problem. Patrick seemed to have good results playing an animation on his 4000 with Magic Lantern, but the animation ran slower on the OpalVision. Unfortunately, the Opal is the slowest card we support. Since we

don't have direct access to Opal Vision memory, we must build the animation in Amiga chip memory, then copy the entire frame over to the OpalVision. OpalAnimate suffers from similar problems. With other cards, like the Retina, Picasso, Spectrum and Amiga chipset, we are able to provide better performance. Even with the Opal, we go one better than OpalAnimate because we support high resolution modes.

Magic Lantern is used by professionals in the TV, cable and film industries for animation preview or actual broadcast. We feel that it's a powerful and inexpensive tool that allows users to create stunning Amiga animations without paying thousands of dollars for products like the Personal Animation Recorder. We feel that Magic Lantern does what we claim quickly, efficiently and inexpensively.

Ed: "Provides the user with tremendous flexibility" is a good working approximation for "has enough features to sink the Queen Mary". But we'll accept that you can let the defaults ride, and may thus avoid bewilderment.

When Patrick referred to image processing, he wasn't looking for the many, many features of the big processors. Indeed, it would be foolish to try to shoehorn all of that into an animation program, for the same reason that Ferraris are not built to tow. However, it would have been nice if ML could scale frames as it loaded them, or change image format - particularly since it can't autoswitch to the correct screenmode to play a constructed animation.

Patrick doesn't know why the sound didn't work, either. The samples he tried were perfectly valid IFFs which worked with every other program he showed them to, but ML said they were corrupt. Indeed the OpalVision card's vintage shows in its speed - but OpalAnimate plays animations OK, and it doesn't access Opal RAM directly. Patrick's results with ML were

unacceptably bad - the output was unwatchable. Patrick was not able to test ML with any other 24 bit cards.

It would appear that Magic Lantern simply had a most unfortunate, and unusual, difference of opinion with Patrick Kirsch's test machine - which, he'd like to point out, works fine with all the other programs he uses. We're sure many people are, as you say, running ML with no problems. And we'd love to hear from anyone who's using ML successfully and/or has any suggestions about the possible source of the problem. Send us your testimonials!

CD-ROM applications?

I'm interested in finding out if Microsoft will ever be producing any of their high class word processors and multimedia CDs for the Amiga - or if any other company will produce interesting programs for CD-ROM Amigas. Since you can finally get CD-ROM drives for the Amiga I was really disappointed that no decent cd's like Encarta come out with the release but instead just more games and clip art.

I was thinking that if a couple of people got together with their Amigas they could produce some interesting multimedia programs like a program that just came out on the PC called "Which? Restaurant" which has a database of names, type of food, and maps showing all the restaurants around Melbourne.

Eugene Balwyn

Ed: As far as Microsoft are concerned, the Amiga doesn't exist. A few thousand CD-ROM equipped machines and no manufacturer? Don't make them laugh. The same goes for the other big PC and Macintosh software houses; they have no interest in developing software for a machine which is variously perceived as a games console, a specialist video platform or the source of one of the many computer religious wars. Don't expect to see any of the monster PC houses supporting the

Amiga until they see a dynamic new company behind the machine.

The "Which?" guides (currently covering Sydney, Melbourne and Canberra restaurants, with titles on other subjects promised) sell for \$9.95 in newsagents. The way you make money on a software package that costs \$9.95 is you sell a very large number of copies. Ergo, once again, you aim for the mass market computers - in this case, Windows PCs. There's nothing at all stopping people writing Which? style programs for Amigas - a WB2 A500 could handle the relatively modest load easily - but, again, until there's a market it's not going to happen.

Of course, you CAN run the Which? guides on an Amiga using PC-Task and Windows - see the review this issue!

Death to Topaz 8!

I have just read Robert Atkins' article in last month's Amiga Review "Your Amiga - the ultimate Net surf-board". I refer to his small reference to Magic User Interface (MUI). I take it he has bad feelings for it 8). Well, I don't want to start arguments about it, and I'd like to hear your side of the story. But first, here are some thoughts of mine.

I'm relatively new in the C programming game, only purchasing SAS/C (oh well) early last year, and I have strong views about GUI's.

Apart from MUI being massively HUGE Enforcer hit, it contains one thing which I think the Amiga needs - a future direction for GUI's. I start getting very emotional when the subject of GUI's on the Amiga come up, because that painful word "Topaz" comes up eventually. In my opinion, no one, absolutely no one, should be using Topaz 8 (default ROM font) for their OS 2+ interface. How many professional programs have I seen let down by a Topaz 8 interface? It really stinks and should be made illegal, with heavy fines for infringement. I am going to form a Militant Organised Revolution Group and stand up and call for a complete REVOLUTION against this Topaz 8 brain washing conspiracy 8).

Don't worry, I know very well how time consuming it is to make font sensitive programs. This is all the more

reason for a MUI type program.

I've used MUI long enough to know its limitations, but I've discovered how easy to use and configurable it is for the developer and user.

I would definitely like to see something along the lines of MUI in the next Amiga OS. Imagine a really efficient font engine hooked up to such a system!

Matthew Wilson

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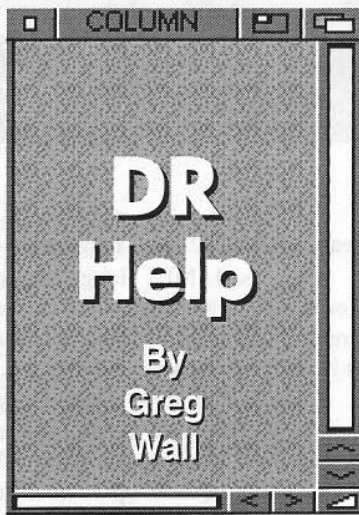
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Pesky windows

Dear Helpline, I would appreciate some help with my user-startup.

I want Blanker and FKey to run whenever I use my 1200. I tried this first by dragging their icons into WBStartup, and although this worked it left the programs windows open on Workbench. I want the programs to run but also to close their windows automatically, so I put the icons back where they came from and tried to do it using the User-Startup. I read somewhere that I could have programs run but shut their windows down by using the following lines, but it has exactly the same result as using the WBStartup:

```
run >nil: <nil: blanker
run >nil: <nil: fkey
```

I have the same line in my User-Startup to run rexxmast, and it works fine. What can I do to get the windows to shut themselves down?

Marcus Judge,
Ingleburn, NSW

Dr Help: The problem you are having is simple, but common. The easiest way to get around it is to remove all references to the programs from your User-Startup, and then drag the two icons into the WBStartup drawer.

Now select the icon for Blanker and select "Information" from the pull down menu (or Right Amiga + I). Once this opens up, click on the line that says "CX_POPUP=YES" and change the YES to say NO. This should ensure that the program doesn't keep anything open that doesn't have to be.

Next you should also check that it has a line that says "DONOTWAIT"; this makes sure that the computer loads without stopping and waiting for that program. Now click on SAVE to save the changes, and reboot.

You should find that your problem is solved.

Upgrade questions

Dear Helpline, I'm a 14-year-old that uses my 2 year old 2Mb A600HD for Games, Homework and Graphics, mainly 3D in Imagine 2.

The only problem is, as always, speed. I do my rendering in Lo-Res 24 bit format and convert it to HAM or greyscale in Rend24. The last time I did this for a 100 frame sequence, it took 18 hours to render.

I want to get more speed or a new machine if necessary, but I've got a very limited budget (around \$300). If necessary I don't mind selling my current machine. What I'd really like to know is:

1) Is there any way I can speed up my current machine (I'm pretty handy with a soldering iron if necessary)?

2) If not, I will, if possible, get a new machine, probably a new A1200 or a second-hand A3000 or expanded A2000. Which of the above (or any other possibilities) would be best, and what would be the best way of going about getting it?

3) One more thing - seeing that there isn't an OS3.1 kit for the A600, is there any way I can (legally) upgrade my machine to OS3.1?

I'd really appreciate you answering these questions, as I wouldn't mind becoming a graphic artist professionally when I'm old enough.

Leigh Dyer,
Seymour VIC

Dr Help: You can't presently speed up the A600 with a faster chip - the 600 is notoriously unexpandable.

If you're into rendering you'd probably kill to have a 24-bit board, but you can't put one of them in your A600, so why not the next best thing? Your A600 can only display 4,096 colors - why not try some 262,144 colors on the standard A1200?

On the subject of speed increases, the stock A1200 hoons along, but with some 32bit memory in the trapdoor you'll practically double its speed. There is also much more support for the A1200 than there ever was for the



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A600 - not to mention having back the numeric keypad.

After Workbench 3.1? Well, you'll get Workbench 3.0 as standard on the A1200 without paying \$200 for the upgrade, and the 3.1 software runs on the 1200 just fine (though there's no hardware package, like there is for the 4000).

My advice then? If at all possible, don't spend money trying to upgrade your A600HD, save up your bickies and get yourself a A1200HD, even a second hand one. You won't be disappointed!

It's much more cost effective in the long run to get a more powerful machine to start with.

CD32 virus?

Dear Helpline, a couple of weeks ago I bought an unused Amiga CD32 for almost half price. It's got to be the best thing around and it worked like a dream.

I've now got a problem. Just in the last week, whenever I load a saved game from the non-volatile memory, it corrupts the game. So far this has only happened with Elite 2 and Liberation, as my other games only save highscores. Both games worked perfectly before.

At first I thought the memory chip was busted, but then I realized that the problem started happening about the same time as I started using a Euro-mag cover CD, which had plenty of PD stuff.

So could my memory be infected with a virus? If it's possible, is there a way to reset the memory (I'm prepared to "get my hands dirty", as the warranty is long gone and I have experience in electron-

ics). I reckon that disabling the battery should work, but I would appreciate your advice, and a vague idea of where to find the battery would be a bonus. Keep up the great work on your great mag.

Thomas Kis,
Robina QLD

Dr Help: It's fairly unlikely that you'd find a virus on a PD CD-ROM (although it has been known). While viruses are sometimes found in PD software, the people that master CDs should be using virus checking programs. If a virus slips through, they'd have many, many annoyed people.

As far as a virus getting into a CD32 unit, it's functionally impossible. The CD32 unit only has a 1K storage area, which is used to store small amounts of information such as highscores. This is the lineal descendant of the old "clock virus" scare, that had various people excited about possible infection of the even smaller clock RAM in regular Amigas.

One possibility is not a virus, but a trojan horse; something lurking inside some other program that deliberately scrambles the contents of the CD32's storage area whenever it's run. But this couldn't hang around after you turned the machine off.

Re disabling the battery, I'm afraid there isn't one in the CD32. It's possible that there's something wrong with the 1K chip itself, but it's going to be a little hard to pinpoint the problem.

If anyone has any suggestions

for Tomas, drop me a line care of Amiga Review.

Drive Dilemma

Dear Helpline, I have an Amiga 1200 fitted with the standard 40Mb hard drive. I am thinking of upgrading to a larger hard drive. Some time ago I read that only some brands of IDE drives, (Seagate I think) were suitable for use in the 1200.

I have seen a Western Digital 200Mb 2.5" IDE drive at a reasonable price. Before taking the step to purchase the drive, I am seeking advice as to whether this drive is compatible with the A1200.

Mathew Beard,
Petrie QLD

Dr Help: The Western Digital drive you refer to should be OK in your Amiga. One thing to note, though, is that IDE hard drives of the same species in a system will normally work fine together, whereas installing different branded drives in a single machine can sometimes produce problems.

If you are taking out your old drive and replacing it with the 200Mb HD all should be fine. If you are adding it as a second drive, it's possible that you'll strike compatibility problems.

At worst, you should be able to set up the 200Mb HD as the boot drive, and depending on your financial status, either add the 40Mb as a second drive with one of the cables from Unitech Electronics on (02) 820 3555 (deliber-



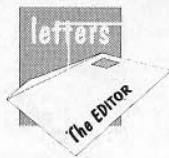
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ate plug), or sell or trade in your old one, and everything should be OK.

Noisy drive

Dear Helpline, I am writing in the hope that you may be able to answer some questions for me.

I recently upgraded an Amiga 600 with a 40Mb hard drive and a new ROM chip V37.35 at a cost of \$290.

My concern is that the hard drive is constantly working even when not in use, this gives off a low buzzing sound that is quite annoying. The drive light comes on only when accessed. I've made calls to the supplier (Sigmacom) without many answers or solutions to my queries.

When I set up the Hard Drive I used 4 partitions, with Workbench on the first one, which is 4Mb. The others are Utilities, Games 1 and Games 2.

Is it normal for the Hard Drive to constantly buzz? As it's mounted inside the keyboard, I can't hide it under the desk.

*Rodney Simpson,
Jerilderie, NSW*

Dr Help: You may just have a noisy hard drive. It's normal to be able to hear a soft whirring sound coming from your hard drive - the drive is constantly spinning from the time you turn it on till the time you power off.

If, on the other hand, your table shakes, the windows rattle and it sounds like a helicopter is taking off in your computer room, then make sure you get it checked out.

I spoke to Mark Harwood at Sigmacom, and he said to bring it in and they'll replace the drive for you. Make sure you backup your HD onto disks before you go in, so you can do a restore onto the new drive when you get home.

One small note - it's probably better, rather than creating 4 partitions, to just have the 2 standard ones (Workbench and Work). Instead of using partitions for your other files, just create drawers called Games1, Games2 and Utilities on your Work partition.

This way you won't run into problems with one of the other three partitions being full, but there still being plenty of room free on the drive; you also save around 30k of RAM from each of the two extra partitions, since AmigaDOS uses the same amount of RAM for basic administration of any partition, no matter what the size.

Chip RAM Confusion

Dear Helpline, I'm trying to upgrade my A500 to 1Mb of chip RAM, and I read the article on upgrading to 1Mb chip in April 1994 Amiga Review.

I checked inside my machine and I did have the 8372a Agnus chip and a revision 6a motherboard, so it should have just been a matter of finding somebody to cut the jumpers and solder the other two pads together (my eyesight's not the best).

But then I came upon a letter in the October 1994 Helpline titled "RAM Mistake". On reading this, I became confused. Question time.

1) My board seems to have the four chips mentioned already installed; can I still do the upgrade?

2) In the April issue it says that this upgrade only works WITH the A501, but the October issue says the A501 will be useless! Who's correct?

3) What do I lose by doing this upgrade - is it only fast RAM? And will I regain my fast RAM by adding an A590 hard drive with 2Mb fitted?

4) Could I replace the 8372a chip with the 2Mb fattest Agnus to

get more chip RAM?

*Tony Mephram
Orange NSW*

DR Help: The four RAM chips you see are the standard 512k chip RAM. You'll note there are also spaces where another four chips could be installed; these are the ones referred to in the RAM Mistake letter.

If you install more RAM in the spaces, your A501 will indeed be useless, because both sets of RAM try to inhabit the same space in the memory map and trip over each other. But if you ignore the spaces and just use the A501 for your extra chip RAM, as detailed in the the April '94 instructions, you'll be fine - and there'll be much less soldering involved.

A501 RAM isn't chip RAM, and it isn't fast RAM. Technically, it's helpfully called "slow/fast" RAM, which means it can't be used for storing data directly accessible to the graphics and sound chips (like chip RAM) and it doesn't have the speed bonus associated with true fast RAM, which doesn't labour under the extra load of being accessible to the custom chips.

So upgrading to 1Mb chip won't lose you anything, really, except compatibility with stupid programs (old games) which assume that if there isn't 512k chip RAM and 512k slow/fast, there must only be 512k chip. There are very few such programs around these days, though, so don't worry.

Adding an A590 or other side-port expansion device will indeed give you real fast RAM - and, as a side benefit, about a 30% overall speed increase too.

The A500 can't take a 2Mb Agnus unless you get one of the \$450 or so 2Mb chip boards.

□

Free Reader Classifieds

A1200/40, The hard drive is almost full and the contents would suit someone who is already on Amiga enthusiast, however I would be glad to assist you if you need help. Monitor (white 1084s) and 3rd edition ROM Kernal manuals included. \$990. (076) 355 898 and ask for Matt.

A2000HD. With 3Mb RAM, WB2.1, ECS Chip Set, A2091 hard drive controller with 50Mb SCSI disk, \$450. Contact Craig Arnoldt. 054 419769(w), 054 413693(h).

A2386SX-25 Bridgeboard, 3Mb RAM, Janus 2.1, DOS 5, SVGA Multi-IO card (2 serial, 1 parallel, 1 game, 1 IDE controller, 1 floppy controller, 512k SVGA graphics: all on one card!), 40 Mb IDE hard disk. IBM HD floppy required but not included. \$800 the lot. Contact Craig Arnoldt. 054 419769(w), 054 413693(h).

A4000/040, 14Mb RAM (2c + 12f), KS 3.0, 120MB hard disk, A2065 Ethernet card, NEC 3D monitor (displays all graphics modes), Buster and CPU upgrades, lots of original software. \$4300. Contact Craig Arnoldt. 054 419769(w), 054 413693(h).

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Deluxe Paint V

First Impressions

By Graham Bowden

Several U.K. magazines, who shall rename nameless, have distributed a stripped down version of what is still arguably the foremost paint package for the Amiga. Graham Bowden, our chief Deluxe Paint guru, checked it out.

It's sad, but true - the demo version only allows a lo-res screen with a maximum 64 colours and no Save, Delete, Print or variable page sizes. The all important new features however, were fully functional and there's a host of them.

The first thing to strike the eye are the two new additions to the menu bar. "Mac" is used for recording, saving, loading and executing macros. Up to ten macros can be loaded into memory. Once in there, the "Use" menu can be employed to select which macro will be the current one. Doubtless any number of AREXX scripts can be written to make use of the feature, but time prevented me from doing so.

The macro recording feature also allows any number of key strokes and mouse wipes to be saved ready for use as an automated drawing tool whenever your fancy requires it. I used the Record functions to save a specified drawing array - just a few squiggles and a couple of flood

fills actually - which happily replicated themselves whenever the macro was executed.

Pulling down other menus reveals a few more surprises. The Prefs menu (Figure 1) has been expanded to include items to call up various tool box requesters including the Fill, Vector, Airbrush etc. There's an added item called MouseTrack. What's it do? In a word... Dunno. I await the manual.

New effects

The manual is not needed, though, to appreciate the additions to the Effects menu. These are Media and Texture. Media contains effects like chalk, charcoal and various other painting mediums for easier and more realistic effects. Texture, as the name implies, provides the artist with some exciting new finishes. The demo

disk only had a few, which are illustrated in Figure 2. These effects are additive. This means with Texture turned On, any brush or shape stamped down will continue to add to the texture's effect each time it is restamped over the original. The colour of the effect changes with palettes selections and is also dependent on the background colour. Lighter backgrounds result in lighter texture colours. Texture works with all drawing tools so dragging a brush around the screen will leave a textured trail. The possibilities using this effect are endless, especially once the means of creating your own unique textures is discovered.

Souped up animation

The Anim menu hasn't been forgotten in the upgrade either. In fact it's probably the most enhanced feature in Deluxe Paint 5.



There's a new expanded Prefs menu plus all new recordable Macros

Fig.1

There's the ability to have a separate palette on each and every anim frame - and the spare/scratch page as well.

The Move requester is also enhanced by the addition of Fade and Adjust controls. Fade, as it suggests, allows a brush to gradually appear and disappear out of or into the background. With unlimited palettes, even 32 colour users can gradually fade a brush using palettes successively closer to the background colour through each separate animation frame.

The Adjust control has the ability to provide each separate frame with its own custom frame rate. Anything between one and fifty frames per second is available. Where the old Deluxe Paint demanded mega clones of a single frame whenever a "Still Frame" was called for within an animation, the new friendlier version only asks for a few frames playing at a preselected one frame per second.

Also new to Deluxe Paint's animation features list is the new Camera Move requester. This item falls under the category of one of those things you didn't know you needed until you saw it and now you can't do without it. What is it?

Simply, it's a scroller. And a zoomer. Oh, and you can add a general background mover about to that as well. It's the quintessential tool for simplifying apparent foreground motion. Ever watched Fred and Barney flat foot their way along the streets of Bedrock? Noticed how, although the car seems to be in the foreground moving across the background, it is in fact an endlessly repeating background scrolling behind their mildly bouncing car?

This little animator's trick requires just a few frames of animated car and a cleverly drawn background. Using Deluxe Paint 5 the

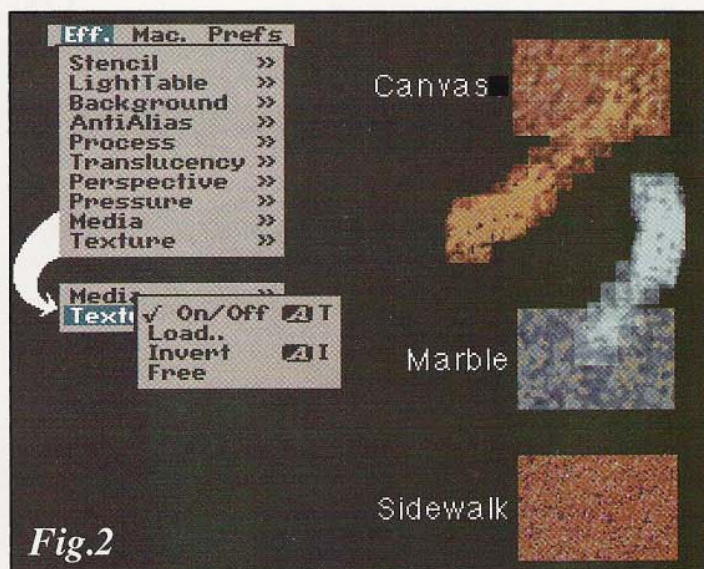


Fig.2

car, with its rotating and bouncing wheels would be drawn over a few frames then picked up and saved as an animbrush. Next step would be to the spare/scratch page where a clever background would be drawn covering at least the entire width of the screen. I say clever because the left and right edges of the picture must be exact matches. The picture in Figure 3 illustrates the point.

Calling up the Camera Move requester and selecting an "X" distance to match the screen resolution's "X" dimension (320 pixels on a lo-res screen, double that for hi-res) will set the scene for the background scroll. Set the number of frames, select "Wrap" and click "New" and once Deluxe Paint's done the hard work, recall the animbrush and stamp it over the background. "Wrap" must be selected to allow Deluxe Paint to draw a seamless background. Without it the background will just disappear off the edge of the screen.

Of course the camera can be made to move along all screen axes - the "Z" axis providing zoom in and out - but the camera can't be rotated. It can however be acceler-

ated and decelerated and to assist in gauging the movement, the start and end positions can be set on screen using the "Start" and "End" buttons with the "Adjust" button. Adjusting an extremity along the "Z" axis entails holding down the Ctrl key while moving the mouse.

Also for the animator, the light table has been enhanced. Up to four screens can be over or underlaid and the frame depth and brightness/dimness are fully and independently definable. Animations can now be created on custom screen sizes. No more "Can't animate with page bigger than screen" messages. Great stuff.

A better airbrush

The Airbrush Tool is another big change item. To the standard airbrush of old has been added a new, more realistic sprayer. At least, it should prove to be more realistic on screens with higher resolutions and more colours than the 64 colour lo-res demo version. Basically though, the new brush anti-aliases the edges of the airbrush effect into whatever colours are in the background. This softens the edges and gives a more natural looking effect. The spread

Fig.3

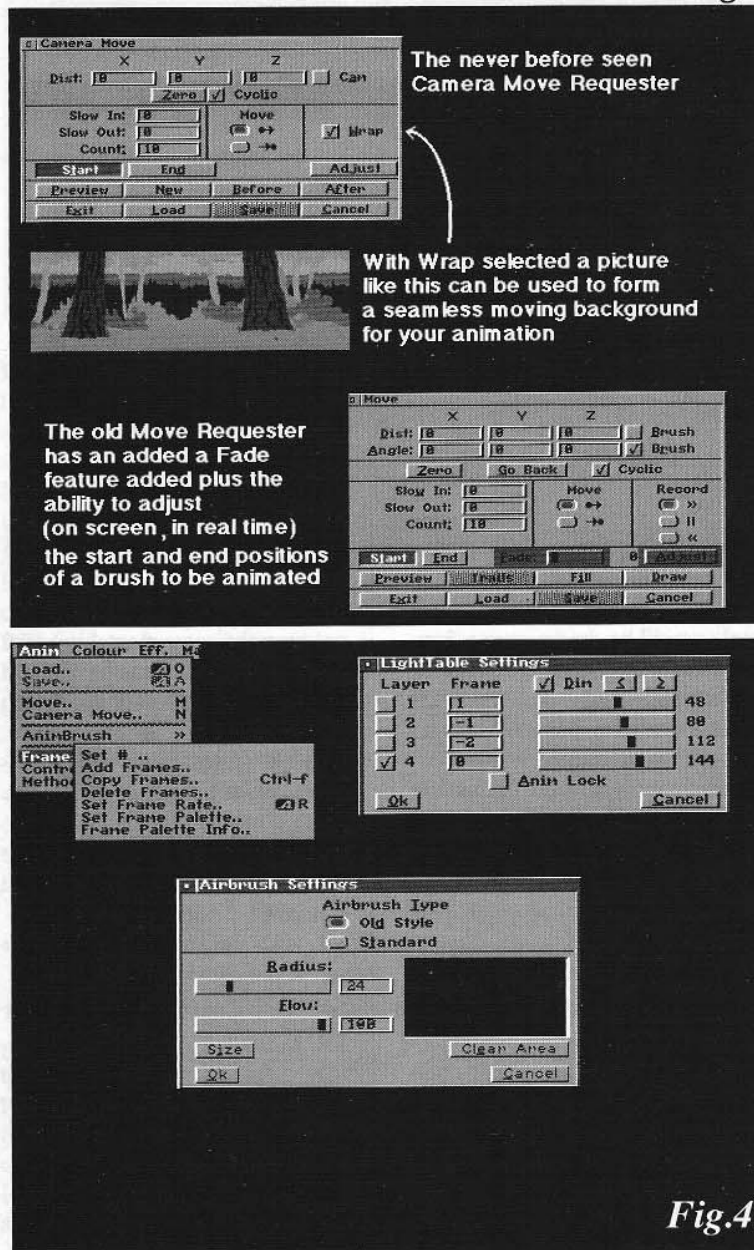


Fig.4

and depth (Radius and Flow) of the softening are user adjustable. Those are the major upgrades. Minor tweaks include the ability to select wireframe when working with a custom brush, and the free-hand brush pickup has finally become a genuine freehand movement rather than the point click, point click method of old. Once a brush has been lassoed, tap the

space bar to pick it up.

Rubthrough has been added to the Modes menu and also to the fill type requester. Right clicking a built-in brush in the toolbox now allows that brush to be sized up or down by holding down either mouse button. Translucency is no longer confined to a single level of transparency because gradient translucency fades can be created.

For the really serious artist the big big news will be the ability to create, edit, load and save 24 bit data. Unfortunately sampling of this feature was out of the question on the 64 colour demo version.

Finally just about every requester has come in for some redesign. Even the Load - and I suppose the disabled Save and Delete - requesters have been tipped upside down. The directories and files have been swapped around with the files now appearing above the directories. Unfortunately, the developers have still not seen fit to require double clicking on directories to open them. Double click a directory in a Deluxe Paint 5 requester and you can still find you've stepped down through another directory on the second click.

I'd still like to see the Wrap fill type switchable between convex and concave wraps, and a mouse decelerator for really fine work would be an advantage. The tool box and menu bars continue to hinder some effects if they're turned on, the most notable being flood fills which won't modify any colours hidden under them. The old Deluxe Paint 3 ability to load the program without loading all the tools is still off with the dodos and dinosaurs. For those who weren't around then, Deluxe Paint 3 could save considerable memory by only loading tools when they were required, then purging them from memory when another tool was selected. Less well heeled Amigans found this feature a boon, especially when creating large animations.

As far as I can tell, colour gradients can still have a maximum of 32 colours per gradient.

So there it is, a dissertation on Deluxe Paint 5, the demo version. I await the real thing with RSied fingers. It'll be brilliant. □

Workbench 3.1 Upgrade

By Daniel Rutter

► Yes, folks, you can finally go out and buy Workbench 3.1 for Amiga 500, 2000, 3000, 4000 and 1200 machines. It's been a long time coming thanks to the ongoing confusion over the death of the old Commodore and the rise, whenever it's going to happen, of the new - but now Australian buyers can get 3.1 for Australian dollars.

The actual package, though it bears the Commodore logo, is put together by the German outfit Village Tronic.

This is a result of the farming out of important projects that started as Commodore slid into the pit; another prominent example of the phenomenon is the Envoy networking package being produced by Intangible Assets Manufacturing.

These external manufacturing deals are a Good Thing - they ease the drought of Amiga OS updates that resulted from Commodore's demise.

The big question is - why should you bother shelling out \$200 odd for the upgrade? Is it as much of an improvement over Workbench 2 as 2 was over 1.x?

Well, no. If you're one of those

poor unfortunates still using 1.x, upgrade at least to 2.1 if you want to do anything serious with the computer. But if you've already got 2.x on an ECS machine, 3.1 will not be a quantum leap - and you have to weigh up whether the \$200 is worth it.

Whaddaya get?

In the 3.1 box you get ROMs to suit your A500, 2000 or 2500 (the AS 320 pack), your 3000 or 3000T (AS 330) or your A4000 (AS 340). You also get manuals for Workbench, DOS and AREXX, and the usual pile of disks.

The review version was an AS 330, and it went on the unaccelerated A3000 that does about half of the Amiga and PC Review DTP grunt work.

There's no 3.1 package for the A1200, but the software works with the 1200's old ROMs. I'll discuss below why A1200 ROMs are being eagerly awaited by some - the package should be along Real Soon Now.

Getting the ROMs into your machine isn't hard - the package comes with decent instructions for

people who've never opened their computer before. If you're not confident about ripping your machine open, it won't cost much to get a technician to put the ROMs in for you, but it's really not rocket science if you're working on the common A500 or A2000 machines.

Naturally, the review machine had to be a 3000, the most annoying Amiga in the world to change ROMs in thanks to its Swiss watch design philosophy.

You have to rip out all your cards, the card holding daughter-board, the power supply, the hard and floppy drives and the whole chassis all the above sit or lean on before you can reach the ROMs - and if you have a problem you get to do it all again. And again. And again.

Sorry. I just wanted to get that off my chest. Moving right along.

The 3.1 software comes on the traditional clutch of disks, and anyone who's installed Workbench 2.x will cruise through the installation; naturally, it uses the standard Installer program and there are no big changes here. As always, people who've added

**“3.1’s
new features are
good for some users,
but it’s not a mass
market product.”**

things to their startup-sequence or like to run odd patch programs may have to tidy things up by hand - but if you’re smart enough to patch your system in the first place, you should be able to handle the repairs.

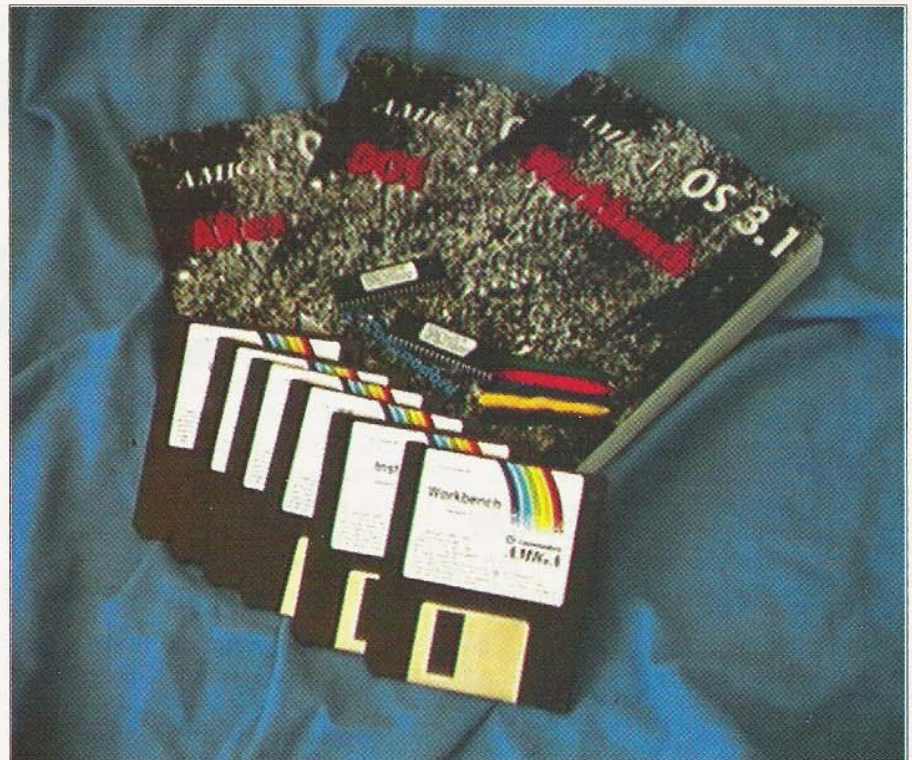
Improvements

Once you’ve installed the new system, there aren’t any spectacular changes on the face of it, unless you’ve got a 24 bit graphics board. The big differences between OS 2 and 3 are all graphic-based, and you don’t get much improvement unless your machine can display 256 or more colours.

If you do have a monster graphics board, you’ll be able to make use of a load of new graphics modes - DBLPAL, DBLNTSC, Super72 and so on, many of which give flicker free high resolution display without a flicker fixer.

Most of these are available to people using ECS, but with restricted colour choice - as with the older Productivity mode, you can only use them in four colours.

This is because all the operating system tweaking in the world can’t make the graphic chips more powerful; if you don’t have an AGA machine or a graphics board, you can have lots of colours OR high resolution.



It could be WB3.0 - except for the ROMS.

All the new graphic mode stuff is of minimal use to A3000 users, or anyone else who’s already got a flicker fixer. Using hires lace and overscan you can get as much display as you need; the higher refresh rates used by Super72 and the like do make the screen more stable, but give you fewer lines in exchange.

You get Multiview and Datatypes; 3.0 users will already be familiar with these. Multiview is the program that ties together all of the Amiga’s file displays and players. You can use Multiview as the default tool for any such file and it’ll winnow out the correct viewer.

Datatypes let you extend this concept, allowing datatype-aware programs to load any image format for which you have a datatype as if

it were IFF. Datatypes only work one way, so you can’t save in datatype formats, but it’s handy to be able to load GIFs, BMPs, JPGs and the like into your paint program without conversion.

Datatypes also work for sounds and animations, in any format somebody writes a datatype for. They’re not a quantum leap - there’s no major task you can perform with datatypes that you can’t with separate converters and temporary files - but they’re much more elegant.

CD support

3.1 has inbuilt CD-ROM support, via the new CDFileSystem in L:. The system comes with a DOS-Driver for a CD-ROM device which you can tweak to work with any CD-ROM that hangs off the

scsi.device (i.e. anything on a Commodore SCSI controller or and IDE CD-ROM on a 1200 or 4000).

You can play CDXL animation files with appropriate software, and you also get better support for booting from CD-ROM if you've got a drive with the appropriate firmware - for example, the PCMCIA Zappo drive for the 1200 (reviewed in the October 1994 Amiga Review).

Cutting through all this, the first feature's not very useful, because it only works on CD-ROMs on a Commodore controller and because you can get very good bundled CD-ROM driver software with any drive - or grab some from the public domain for virtually nothing.

3.1 does not make it possible to boot from a CD-ROM, in and of itself. You still don't get a driver built into the ROM, just a filesystem you can use when you've loaded Workbench and better support for CDTV and CD32 software.

The odd thing is that the big market for this particular feature is A1200 users with a Zappo or similar drive who'd like 90% compatibility with CD32 titles instead of the 50% or so you get with 3.0 - 3.0 Zappo users can't view any CDXL animations, and the one we tested crashed on many games that reached out and touched 3.1 features that weren't there.

But since you can't actually get 3.1 ROMs for the 1200 yet (watch this space...), CD32 cloners are left out.

Speed

The 3.1 chips have rewritten graphics and layers libraries (hardware libraries that deal with graphics), which means that there was about a 30% improvement in graphic speed on the A3000 test machine.

Amiga Intuition Based Benchmarks reported this - 30% faster in the WritePixel test, much the same for everything else. This means pure graphic operations are noticeably snappier - the classic example is plain old Workbench window-wrangling.

The faster graphics will be a help if you're doing animations, multimedia, desktop publishing or anything else where redraw speed is critical, but remember that the underlying operations that produce the graphics to be shown on the screen aren't running any faster, just the actual displaying, so you probably won't realise the entire 30% improvement in many applications.

I haven't done tests on the improvement 3.1 gives over AGA graphics speed (already twice as fast as ECS), but other users have reported it's not as great. And, of course, 1200 owners running the 3.1 software but not hardware will get precisely the same speed they had before.

There certainly won't be any speed boosts if you're not using the Commodore graphics libraries at all - in other words, if you've got a 24 bit graphics board with its own display libraries.

Problems

Naturally, it's not all peaches and cream. Every time an OS update comes along, we find another few programs that haven't been written to Commodore specification and fall on their faces in one way or another.

It's been getting better lately, with 3.0 actually managing to run some things that worked on 1.x but failed on 2.x, but while there are coders who want to cut corners to make their product a bit faster, a bit more compact or a bit closer to their idea of what a user interface should be, there'll be incompatible programs.

3.1 is pretty good in the compatibility department. Generally, if something works on 2.x it'll work on 3.1. But I did find a couple of failures.

In the minor annoyance department, DirOpus' built in picture viewer hung. This was not a fault with the viewer as such - it was because we had the fade in/fade out frill turned on, and that disagreed with the new chips. C'est la vie.

A more important problem manifested in Professional Page 4.1, which everyone already knows is not written in anything which could even in a dim light be taken by a person with impaired vision to be an officially sanctioned manner. Pro Page fell over somewhat when using a 16 colour screen; the program worked, but it didn't redraw the screen properly, turning everything gray at the slightest provocation.

A few calls confirmed that yes, it does this on other 3.1 machines and yes, you can solve the problem by the simple technique of using black and white mode (thanks, guys) or spending lots of money on a 24 bit graphics card (thanks again). Yay, Gold Disk!

There's also a hiccup in the 3.1 ROMs themselves, which you'll only notice if you're using an old SCSI hard drive. By old I mean late 80s vintage - Quantum drives before the LPS era trigger it, as did the elderly 170Mb Fujitsu drive in the test A3000. We've been using this drive for years; it's not dreadfully fast but it's reliable, and given the durability of recent SCSI devices it could give service for many years to come.

But not on a 3.1 machine.

The symptoms of the 3.1 old drive problem are very simple; when you turn the machine on, the SCSI light locks on and the computer becomes a vegetable. Doesn't make it to Kickstart. Have



1.x - Denotes any version of Workbench starting with 1. 1.0 was abysmally buggy and unstable, 1.1 a bit better. 1.2 was pretty good, and 1.3 added bootable hard drive and recoverable RAM disk support.

2.x - Any version of Workbench starting with 2. 2.00 was the original version, 2.04 was a bit more polished and was the version most people got in the old Workbench 2 upgrades, 2.05 had support for PCMCIA card sockets and so came with the Amiga 600, and 2.1 is the current version of 2 and is what you get in a current WB2 upgrade kit.

3.x - Any version of Workbench starting with 3. 3.0 is what comes with A1200 and 4000 machines, 3.1 is what comes with the CD32 and can now be bought for other machines too.

Kickstart ROMs - Amigas keep their basic operating system brains on a ROM chip inside the machine. The configuration of these ROMs differs depending on the model; 500s and 2000s have a single ROM chip, 3000s, 4000s and 1200s have two ROMs. Some Amigas don't have ROMs, notably the original A1000s, which need to be fed a Kickstart floppy disk before they can think straight and early 16MHz A3000s, which keep Kickstart in a file on their boot drive and read it off as part of startup.

Workbench/Kickstart - Often used interchangeably, these are the two parts of your Amiga's operating system. Kickstart is (usually - see above) the hardware part, and Workbench is the software. There are more versions of Workbench than Kickstart; the ROMs for WB2.04 and WB2.1 are the same.

OCS - Original Chip Set, the set of custom chips that old Amigas came with. OCS can't do Productivity or Super Hires graphics modes.

ECS - The best non-AGA chipset, that allows you to access the new and dubiously useful hires modes.

AGA - The current Amiga graphic chipset, which can do high resolution flicker free graphics in 256 colours for Workbench, or up to 262,144 colours in HAM8 mode. AGA is also about twice as fast as ECS at graphic operations.

a nice day. Unplug the offending drive and all's sweetness and light; plug it back in and welcome back to Hangsville, North Wisconsin - population: you.

The solution to the problem is as simple as it is expensive; replace the drive. No patches, no tweaks. Fortunately, few people should strike this bug since such antediluvian drives are pretty thin on the ground. But be warned. It certainly annoyed the heck out of me, and was responsible for the 3.1 review being postponed.

Overall

For most users, WB3.1's not really worth bothering with if you've already got 2.1. In special cases - graphic speed freaks, CDTV software users, owners of monster machines with 24 bit cards and early adopters who have to have the latest of everything - the \$199 is justifiable. And the mere \$50 margin over the 2.1 upgrade price makes 3.1 a good idea for anyone heartily sick of 1.x. Otherwise, don't worry about it.

The 1200 ROMs could be another story - along with a Zappo drive they give 1200 users very good CD32 compatibility and a regular CD-ROM drive as well. That upgrade will set a 1200 owner back a total of \$798, which is quite reasonable when you consider the price of a CD32 (if you can find one) plus separate 1200 CD-ROM, which would have to be SCSI controlled and hence require more money on expansion.

**Amiga OS 3.1 is \$199.
Distributed in Australia
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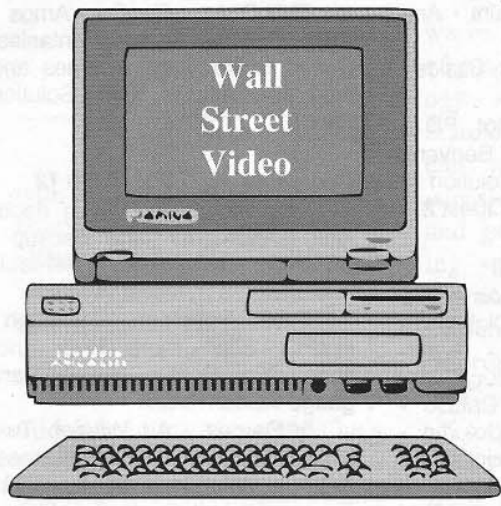
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| Final Blow | Super Cars II |
| Rodland | Pegasus |
| Double Dragon III | SwitchBlade II |
| Indy Heat | Wipe Out |
| Z-Out | CyberBlast |
| Turrican II | Globulus |
| Thunderstrike | Hero Quest |
| Fiendish Freddy | Gold of the Realm |
| Planet Fall | UGH! |
| Sword of Honour | Plan 9 (inc Video) |



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 - Saint Dragon (D)
 - Days of Thunder (C)
 - Rodland (C)
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 - Warlock (C&D)
 - Scrabble Deluxe (C)
 - Chessmaster 2100 (D)
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 - Mavis Beacon (D)
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- (D) = Disk (C) = Cassette

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PC-Task 3

PC Emulation on a budget

By Daniel Rutter

► It's a sad fact, but IBM compatible computers dominate the computing world. The architecture's old and crusty, the interfaces new but kludgy and the whole lurching organism should have been put down long ago, but there it is. They're out there. Get over it.

Since there are so many of the blighters, it's helpful to be able to speak their lingo. Now, a regular WB2.1+ Amiga can read and write IBM disks and has no trouble with many IBM data files (given the right conversion utilities), but if you want to run IBM programs you're left with something of a dilemma.

You could buy a whole IBM compatible machine. On the plus side, this'll be fast, as standard as a PC gets and completely separate from the Amiga, so you can play one of those cool IBM games on the PC while somebody else does some work on the real computer. But this option is certainly not cheap.

If you've got an appropriate big-box Amiga, you could buy a bridgeboard which puts a PC inside the same box. You can get bridgeboards up to a respectable

50MHz 80486 processor these days. This means you don't have to buy another box, but these fast bridgeboards are so expensive you really might as well spend a few hundred more and get a whole IBM clone, with its own hard drive, monitor and the rest.

XT and AT bridgeboards are much less pocket-damaging, but conversely slower, and the world's not exactly teeming with bridgeboarded Amigas so technical support can be a problem.

The final option is to run a software emulator - a program that builds an IBM inside your Amiga, doing real-time translation of IBM program instructions into language the Amiga processor can understand.

There are a couple of Amiga PC emulators, but the only one worth bothering with is and was Chris Hames' PC-Task. PC-Task started life as a "demoware" product (like shareware, but with a heavily restricted evaluation version), but as of the current version, v3, it's gone commercial, with some considerable changes.

There are now four actual PC-Task executable programs - 68000



and 68020+ optimised versions, each in plain and memory-hog turbo versions.

PC-Task supports MDA, CGA, EGA, VGA and SVGA video modes, with 256 colours in the appropriate modes if your machine can display them. Since it now pretends to be an 80286 processor instead of an 8086, it's even possible to run Windows - of which more later.

There's now support for up to 16Mb of RAM accessible to MS-DOS, you can run PC-Task in a window (run several - multitask MS-DOS!), you can use your CD-ROM drive from DOS, and, as always, the parallel and serial ports can be used by the IBM emulation,



so you can print from programs or use a modem or plug in an IBM mouse - although a built in driver for the Amiga mouse makes the last one pretty unnecessary.

Setup

Installing PC-Task is easy enough, but in order to get any real use out of it you're going to have to give it a hard disk to play with. Fortunately, you don't have to dedicate a whole hard disk partition to PC-Task (though you can if the urge strikes you); you can use a hard disk file, as used by bridgeboards, instead.

PC-Task makes it easy to build these files, and if all you want to do is use them from the emulator then you just have to make the file, then run PC-Task, FDISK and FORMAT the drive after booting from a suitably equipped DOS boot floppy and Robert's the brother of one of your parents.

What's particularly nice about the disk file idea, though, is that with a bit more effort and after adding an entry to your Mountlist you can make the "drive" available to AmigaDOS, too. This means you can do file manipulation on

PC-Task V3.00, Copyright 1992-94 Chris Hames. All rights reserved.

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To start the mouse driver press LeftAmiga-P (or use PCTMOUSE.EXE).
To quit press the RightAmiga-Del.

Processor: 80286 Conventional Memory: 640K Extended Memory: 1024K
Technical: (location \$0062B950 allocated 2048K)
Drive A is: pc2
Drive B is: DF1
HardDrive C is: 4:HardFile0
HardDrive D is: Unavailable

Starting MS-DOS...

Yes, now you can have the World's Least Attractive Operating System on your Amiga!

the PC-Task drive without having to run clumsy MS-DOS file management programs at lousy emulator speeds. It's possible for one OS to pull the rug out from under the other - changing a file simultaneously from both sides of the fence can cause some interesting explosions - but with a little care this system works very well indeed.

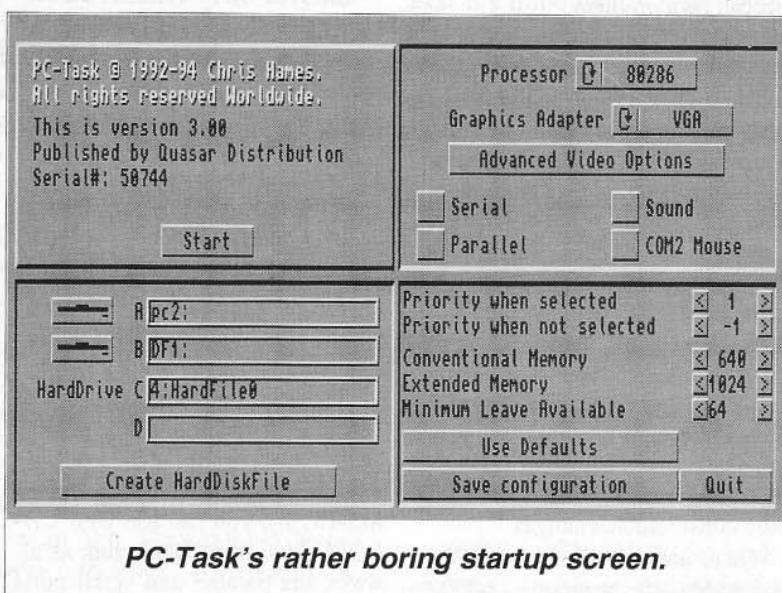
Speed

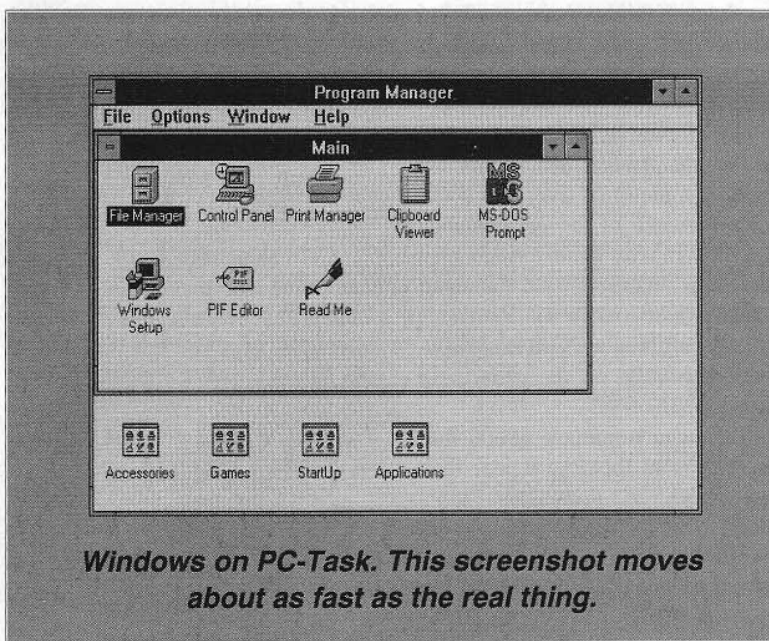
The most notable thing about PC-Task's speed is still that there isn't very much of it. Sorry. Remember, a software emulator is a dancing bear - the wonder is not how gracefully it dances, but that it dances at all. With that in mind, you'll find PC-Task's sluggish performance more tolerable.

My test machine is a Workbench 2.1 ECS A500, running a 68EC030 processor at 40MHz, no math coprocessor, 1Mb of chip RAM and 8Mb of fast RAM. The hard drive is a 1Gb DEC whose speed is considerably restricted by the GVP Series II SCSI-1 controller that's telling it what to do.

On this fairly speedy system (it's a mongrel, but it moves) I threw a number of benchmark programs at the turbo and non-turbo versions of PC-Task. Some of the benchmarks got profoundly puzzled by timing differences between PC and Amiga.

This discrepancy caused one program, which measured the speed of drawing of a 3D vector animation, to proudly announce





that the machine had scored 2.9 frames per second - quite respectable, about the speed of a slow 486. Unfortunately, I'd been sitting there watching the thing and let me tell you that it was closer to four SECONDS per FRAME.

Several other speed tests suffered this same problem, trumpeting impressive test scores based on crummy timing. I ignored everything that thought it'd been running for thirty seconds after you'd been watching it for five minutes; another sure sign were programs that decided the machine was a 70MHz AT.

Some tests simply fell on their faces when they tried to access nonexistent hardware features that the emulation would rather they didn't. Among the less addled tests, Landmark System Speed Test 6.00 decided I was running like a 3.5MHz AT.

The final result, taking everything into account, was that the turbo PC-Task on the 40MHz 030 runs about twice to 2.5 times as fast as an IBM XT.

The XT is not the slowest IBM compatible computer ever - that

honour goes to the original, 8088 based IBM PC - but it's certainly very very slow. Beating it is nothing to be proud of, objectively speaking. Somebody running a stock A500 with a bit of genuine fast RAM can look forward to about 30 per cent of XT speed - if you're cruising on a 40MHz 68040, you'll enjoy better than ten times XT speed.

But put this in perspective; a modern 486DX/33 clone selling with all the knobs on for \$2000 will wipe the floor with PC-Task on a 40MHz 030 by a factor of about 100. Heck, a second hand \$500 25MHz 80386'll beat it by a factor of more than 20. PC-Task is not fast.

Depending on the test, the low memory non-turbo PC-Task achieved from 60 to 100 per cent of the performance of its system-hog cousin. Predictably, it was never faster. But when you consider that to start a 640k, CGA version of the regular PC-Task sucked about 1.1Mb of RAM and the turbo version glommed a mighty 5.4Mb (!) the tradeoff seems quite reasonable.

Disk speed was a pleasant surprise, though. Since the gruntwork of disk access is really being handled by AmigaDOS, not painfully emulated MS-DOS system calls, the MS-DOS hard drive file worked pleasingly quickly.

With some trepidation, I ran the MS-DOS DEFRAG disk optimiser, but I'm happy to say it optimised my original 10Mb "drive" as quickly as I'd expect any real 286 to, thanks I suppose to the unusually fast drive and decent controller.

I got used to running a program, hearing a fraction of a second of disk access as the program got belched over to MS-DOS, and then twiddling my thumbs for many more seconds while the little green men inside the emulator flicked their abacus beads back and forth.

But I'm not complaining - this speedy disk access means disk-intensive tasks, like updating archives or indexing databases, won't run nearly as slowly as the crummy processor speed might suggest. However, the bigger the hard disk file, the slower it runs.

Graphics

PC-Task 3 deals with 256 colour modes quite well, even on ECS machines. Older versions couldn't do 256 colours, even if you had the AGA chipset; this one fools programs into thinking they're running on a system that can do 256 colours whether or not you really can, and then simply does its best with the graphics it's told to draw.

This means that ECS users can run programs that use more colours at once than they have, and simply have to put up with annoying, ugly, pseudo-random colour schemes. The programs run - that's the important thing.

Realistically, you're likely to spend most of your PC-Task time



using it in as few colours as possible, because the fewer the colours the less RAM you use, and the faster the graphics are. You can use two colour mode either by setting PC-Task up to run in the old MDA monochrome video mode or by using one of the other modes but setting PC-Task up to restrict the number of colours actually displayed.

Windows

PC-Task 3 runs Windows. I made sure that it did by making a bigger hard disk file and installing Windows 3.1 (you can't use 3.11 for Workgroups, because that only works with 80386 and higher processors, but if you can find the plain 3.11 that'll run).

Note that to install from a standard set of Windows disks you'll need a high density disk drive on your Amiga; getting the system set up otherwise will be a huge fiddle. And further remember that Microsoft doesn't care that you're running Windows on an emulator; you still need to buy a separate copy, not use a friend's, or you're breaking the law.

But, realistically, not many people are going to be running Windows on PC-Task anyway. It took one and three quarter hours to do the standard six-disk install, and when I ran Ziff-Davis Labs' WINBENCH suite of benchmarks, the results (when, after a very long time, they emerged) were lousy.

The graphics WINMARK result, which measures how fast a Windows machine can push graphics about and is an excellent measurement of its overall speed, was 65473 pixels per second.

This may sound good, but the comparison machine listed, a 33MHz 80486, scored more than seven MILLION pixels per second. And that's not too quick; Andrew Farrell's year-old COAC 486DX/66 scores 17 million, and

the Acer 60MHz Pentium we've got in the office at the moment clocks in at a howling 37 million or so.

So, if you've got a firebreathing 68040 Amiga that outspeeds mine by a factor of five, you'll enjoy a fifteenth of the performance of a 486/33 with a slow video card (like, for example, the Compaq machine that lost in PC Review's recent multimedia PC comparison, partly because of its irritatingly slow video).

If you're running a 68000 machine, you're looking at less than one 750th of this slow 486's speed, or a bit better than one six thousandth of the Pentium's performance. Hurrah.

I ran the disk WINMARK test as well, to see how fast data could be sent to and pulled from the drive - and the result there was just as crummy; at 1370 bytes/second. In other words, generally speaking, PC-Task on my machine managed to move data to and from disks as fast as my 14,400bps modem can move it to and from a bulletin board.

Of course, the PCs would perform even worse if some maniac managed to write them an Amiga emulator, but that's not the point. If you want to do anything vaguely useful with Windows and you don't have a 68060 Amiga or a spare day, forget it.

Overall

Setting PC-Task up is not dreadfully complicated. The mechanics of building a hard disk file and making it accessible to the Amiga side could be confusing for beginners, but the manual deals with the subject very clearly. If you can follow instructions you'll be right.

Running MS-DOS programs, though, is another matter. MS-DOS is a system that still shows its ancient CP/M lineage, and if you

try to do anything clever you'll be able to experience all the pain I go through every day with my PC Review hat on - only it'll take much longer for you to see what's wrong. And, as I said above, running Windows is like watching a tortoise race.

One shortcoming of PC-Task 3.0 is that the sound doesn't work. I thought it was me, and shut down a couple of programs that patch my sound to make amusing noises, but Quasar later confirmed that it's PC-Task's fault, and it'll be fixed in the free 3.1 upgrade.

Not a big deal, since the only sound you get is PC speaker anyway, which for the uninitiated was the state of the art in 1980.

So, realistically, PC-Task is still not a program you'll want to use for serious, regular tasks unless you've got an offensively fast Amiga with a huge steaming mound of RAM.

However, for doing things like extracting archives that the Amiga doesn't have a program for, or compiling PC executables of your portable source code, or indeed anything that you're not going to have to do every day and don't mind leaving to tick over in the background while you do something else on the Amiga side, PC-Task is the most cost-effective option on the block. I've found myself firing it up regularly when I grab some little IBM utility from a bulletin board and want to know if it's worth keeping without sticking it on a floppy and carting it off to work.

PC-Task 3.0 ain't magic, but it's not far short. It's certainly the most IBM you're going to get for \$129.

Contact:

Quasar Distribution

Ph: (03) 583 8806

Price: \$129



DICE 3.0

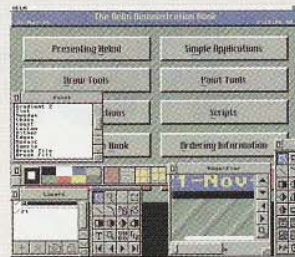
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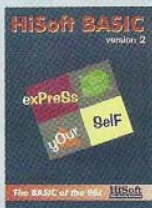


Helm

Helm is a complete multimedia authoring package. Features include buttons, charts (bar, column, line, pie, etc.), imagefields (supports animations, scrolling and more), shapes (boxes, ellipses, lines, curves, arrows etc.), textfields, selectors (mini control panels), a fully featured scripting language, play music and sound, move objects, call external programs, send data to serial port, printing, fades and dissolves. A 220 page manual and 3 disks packed with examples and clip art make Helm the leading authoring system for the Amiga. Best of all there's no dongle and the Browser is freely distributable.



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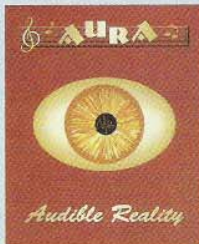


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RRP \$199.00

Personal Paint 6.1

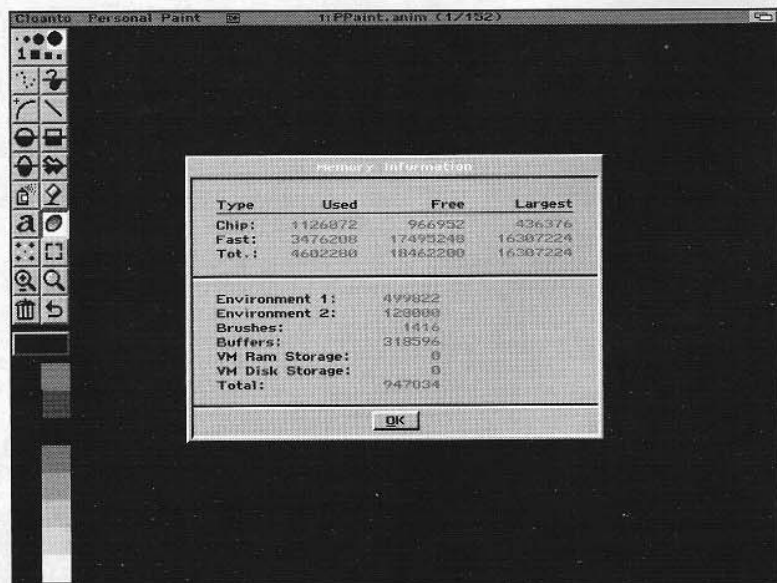
By Andrew Farrell

► Cloanto won accolades in Amiga magazines the world over for earlier versions of Personal Paint. In true Amiga style, they offered the sorts of features you would expect from high end professional software in a program aimed at and easily afforded by the first time buyer. Value for money points were high. PPaint used many of Deluxe Paint's standard keyboard shortcuts, so it was easy to move across to. The image processing features and ability to handle multiple file formats were also big winners. Sure, they cut a few corners here and there, but overall Personal Paint seemed to offer excellent bang for bucks.

So, when version 6.1 arrived at our office boasting animation support and numerous other improvements, we were pretty keen to see what they had added. Were Cloanto about to take on Deluxe Paint V - which should also sell for around \$99?

What's New

On spec, there's lots of new things to tinker with in version 6.1. These include virtual memory support, improved keyboard shortcuts, transparency effects and 24-bit printing and animation. The



odd thing is that rather than insert pages into the loose-leaf ring-bound user manual, Cloanto have opted for a separate stapled supplement on the new features, along with changes to the original documentation. This totally defeats the purpose of a loose-leaf manual in the first place! Additional features added from 6.0 to 6.1 are documented by way of a readme file on disk, including the SIRDs effect.

In operation the new version looks much the same, although a few of the requesters have been modified or improved. The biggest hint of something new is the pull-down animation menu. More on that shortly.

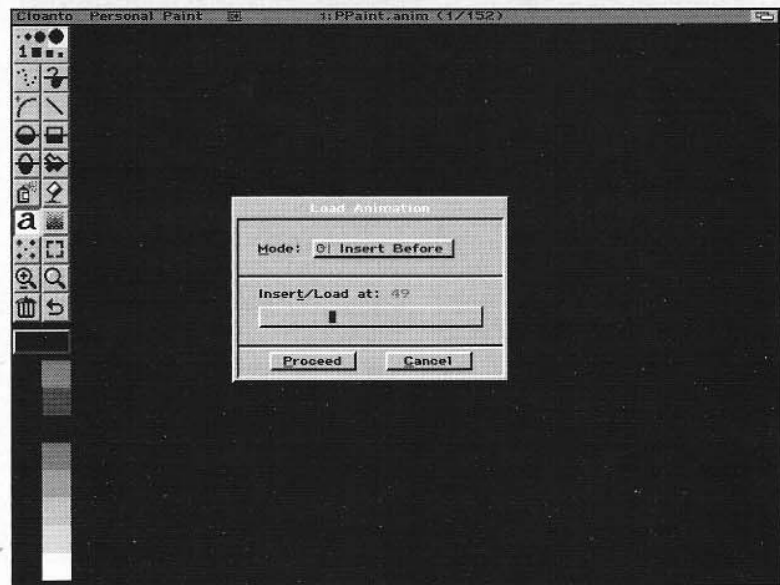
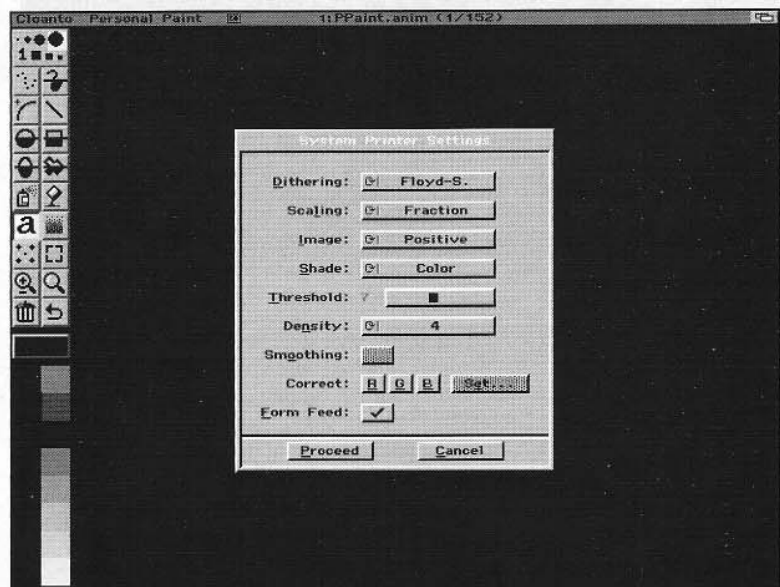
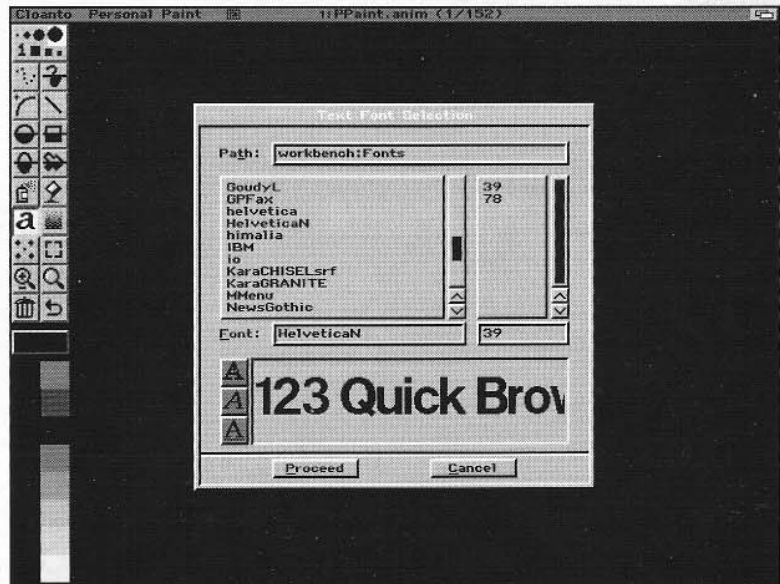
Virtual Memory

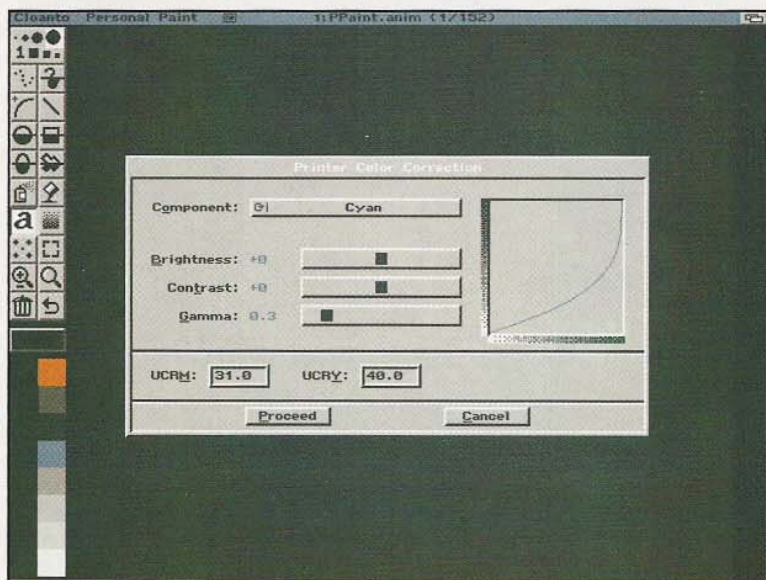
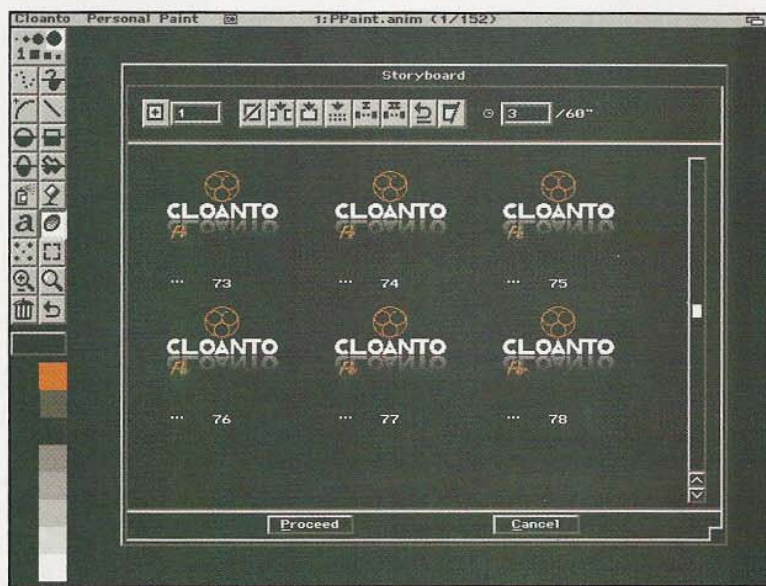
Working with large images, especially in 24-bit, is extremely demanding on memory. If you don't have enough RAM to hold an image, some programs allow you to use your hard disk as if it were extra memory - hence the term virtual memory. Personal Paint 6.1 does support virtual memory, but there are limits to what it can use it for.

Although images, animations, brushes, transparency and stencil planes, storyboard and environment undo buffers can all be stored in virtual memory, the current image, current brush and current screen must all sit in chip memory. The whole system is a little on the clumsy side. A memory information requester serves primarily to muddy the virtual waters. On the up side, there's some unique and very useful memory management hot keys to help you make it through low memory situations.

Transparency Effects

Sadly, the manual does not really explain some of the new features very well. Transparency sounds like it could be quite good,





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but it seems to be lacking the ability to be painted onto the current image. Likewise, the rub-through effect can only be stamped onto the current image. However, if you have several brushes, with different palettes, that you want to stamp down onto a background which also has a different palette, Personal Paint can manage to match the palettes without too much fussing around.

File Formats

Personal Paint will happily swallow a range of file formats. It will even crunch 24-bit images back to a displayable resolution and number of colours for your system. HAM and HAM8 images, along with 24 bit files, are all processed as 24 bit images. HAM images can be viewed as HAM while the program converts them - a nice touch. Personal Paint also supports DataType loaders - part of Workbench since version 3.0. A JPEG DataType is included and can be installed automatically when you install Personal Paint.

Animation

If anything could have thrust Personal Paint in front of Deluxe Paint it would have to be in the animation department. Despite its age, Deluxe Paint stands as the foremost 2D animation package on any personal computer today - but that doesn't mean there's no room for improvement. After playing with Personal Paint's animation capabilities, I got the distinct feeling these guys have decided to include everything they figured is missing from Deluxe Paint - but they've left out everything Deluxe Paint already has!

Cloanto have built a reasonably nifty Storyboard function, which lets you juggle frames as groups or one at a time. You can cut and splice a single animation with ease.

On an A4000 the speed is acceptable. A standard 1200 will have you wishing for a tall drink and something to nibble on. But Deluxe Paint could well do with a storyboard, and I take my hat off to Cloanto for thinking it up. I don't know how many times I've wished there was an easy way to move frames around without resorting to another program.

However, all that falls apart when you realise what's missing. There is no brush move facility. Deluxe Paint can take a brush and spin it off into the distance, slide it smoothly across the screen or with perspective on make it appear to move in a truly 3D way. Personal Paint does not have anything to touch this basic function.

Without move, you are faced with having to hand stamp any moving brushes.

Personal Paint is great for processing animations, but in my opinion it's not much chop when it comes to making them. Sure, you can work in ANIM7 or 5. Yes, it handles multi-palette anims and frames with variable timing. You can optimise an animation to delete repeated frames. You can even append an animation to the current anim in memory, or insert it before or after a particular frame. Marvellous stuff. But I want brush move too!

Wrap Up

There's various other goodies to play with if you own a good colour printer or high resolution graphics card. I'll leave a closer look at these and other nifty features to our close up comparison of Deluxe Paint V and Personal Paint 6.1 (a small update is expected any day now). Overall, this new version will make current owners very happy. It's also a useful aide to other paint programs that lack the ability to get in there and hack around with animations. However, a fast machine is recommended if you plan on doing much animation work. As a stand alone paint program, Personal Paint continues to pack a mean punch in the image processing area, but it has yet to offer any serious threat to Deluxe Paint in the business of rolling your own 2D masterpiece.

For more information contact Amadeus Computers on (02) 652 2712. RRP is \$99.

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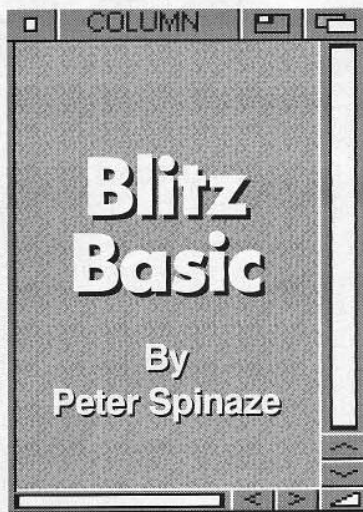
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Beginners start here!

Two of the most important concepts for a programmer to master are data storage and manipulation and program flow and control. This month, I'll kick off the beginners column with an brief look at these two areas.

Variables

All software is an exercise in data manipulation, be it the characters and formatting of text in a word processor, or the statistics of aliens in this year's re-release of yet another reflex-oriented arcade game.

Someone once said that programming is just the art of storing and manipulating data. If you look at the structure of a program, it's really only a collection of bytes in a certain order within the computer's memory.

The most important form of data in Blitz, or in any language for that matter, is the standard variable. Look at this little snippet of code:

```
Age=10
Age=Age+1
Print "Happy Birthday, you are
now "age," years old!"
```

There is only one variable here - "Age". A variable is like a letterbox inside the computer's memory. It holds data, or a

number. This example originally places the number 10 in the letterbox called "Age".

The command `Age=Age+1` tells Blitz to take the number already in the "Age" variable and add one to it, and place this new, modified number into the variable again. After this command in Blitz, "Age" now equals 11. The last line of the code just prints this fact out to the screen.

Variables have to be called something, so you can tell Blitz which variable you want to use for a command. Variable names can be any collection of letters, with a few exceptions.

These variable names are legal:

Age
number
a

These are illegal:

123numbers (starts with numbers)
Printer (contains a Blitz command - "Print")
a number (contains spaces)

There are different types of variables, depending on what sort of information you want to store inside the letterbox. Here's a quick run down of the types of variables available to you in Blitz Basic.

The Byte: Variables ending in ".b", such as `Age.b`. A byte is, of course, eight bits, which can store the integer numbers between -128 and +127. The main use of the byte variable is to conserve memory.

The Word: Variables ending in ".w", such as `Age.w`. A word is two bytes, stored one after another in memory. This makes sixteen bits available for storage, so a word can hold an integer between

-32768 and +32767. Words are good for storing bigger numbers than bytes, but take up twice as much memory.

The Longword: Variables ending in ".l", such as `Age.l`. A longword variable takes up four consecutive bytes. It is able to hold a wide range of integers, from -2147483648 to +2147483647! Longwords are mainly used to hold the "address" of something in memory. It takes four bytes to hold the exact address, since the Amiga's memory is a big world.

The Quick type: Variables ending in ".q", such as `Age.q`. This is the default variable type. If you don't put a suffix at the end of your variable name, Blitz will assume you want it to be a quick. A quick needs four bytes of memory to hold numbers from +32767 to -32768. The great thing about quick variables is that they can also have up to four decimal places, so a quick could hold 10245.8134, whereas a longword could only hold the integer component of that number.

The floating point: Variables ending in ".f", such as `Age.f`. Floating points also take four bytes of memory, and can hold numbers with numbers after the decimal point. They can hold the range $+9*10^{18}$. That's a huge range, but they suffer from a lack of accuracy and they are slow when they are used for calculations.

The String: Variables ending in the ".s" or ".\$" suffix, such as `Age$`. Strings are quite different from other variables, in that they are really a collection of letters, not a number. A string is a series of letters (or ASCII codes for the letters) stored one after another in memory to build up a word, name or a chunk of text. They take one byte of memory per letter.

As I have already said, Blitz treats all variables as though they

were quick unless you tell it not to. That means that you don't have to put the ".q" at the end of variables you want to be quick. If you want to make them another type, you have to add the appropriate suffix the first time the variable name appears in your code.

You only need to do it the first time because the compiler works top to bottom. The first time it sees a new variable, it sets it up in memory as the type you requested.

A common trap for beginners is to forget that variables contained within functions or statements are local, which means they apply only within the function, so the top to bottom rule of variable definition applies only within the function. That might mean your variable outside your function is a quick, but the one inside your function is a longword, even though they have the same name!

Another mistake made by newcomers is to forget that Blitz defaults all new variables to quick types. If you try to load a quick with data that should go into a longword, for example an address, it just won't work. If you pass this mangled number back as a pointer to the system, you'll get the wrong address completely, and a visit from the Guru is almost assured!

The solution to this problem is to tell Blitz to make the default variable different. The command DEFTYPE .I does just that, telling Blitz that all variables lacking a suffix are to be treated as longwords. Make sure to put this command at the start of your code.

Blitz veterans are not forgotten!

Need a quick way to store your array of data to a file? A common requirement for saved games or storing important data is to save the information to disk. Since

arrays are often used to store such data, let's look at a quick and clever way to store an array to a file very quickly. Let's say you have a two dimensional map array of 2000 byte sized elements, whose data, stored in the array named Map(), you want to save to a file.

Here's the slow way of saving it!

```
IF WRITEFILE (0,"Ram:Savedmap")
  FILEOUTPUT 0
  FOR x=1 TO 2000
    FOR y=1 TO 2000
      NPRINT Map(x,y)
    NEXT
  NEXT
ELSE
  NPRINT " ERROR! (Couldn't
  open the file: Ram:Savedmap)"
END IF
```

I know that a two dimensional array with 2000 elements would use about 4Mb of memory, but this is an example, all right?

This method loops through each element in the array, and NPRINTS it to the disk file. Doing it this way means Blitz has to perform 2000 time 2000 loops - that's four million loops! An extreme example perhaps, but it highlights my point.

Here's the quick way!

```
IF WRITEFILE (0,"Ram:Savedmap")
  WRITEMEM 0,&map(0,0),4004001
  NPRINT " ERROR! (Couldn't open
  Ram:Savedmap)"
END IF
```

This method uses the Blitz command WRITEMEM, which simply calls the internal Amiga system DOS function Write(). All you need to tell WRITEMEM is the starting address and the

number of bytes to save to disk, and it does the rest.

The trick is knowing that Blitz stores its two dimensional arrays sequentially in memory. In this example, this means that starting from the memory address of Map(0,0), all the elements lie one after another; Map(0,1), Map(0,2) and so on. We can find the location in memory of the first element by using the ampersand character - this is a Blitz command which returns the address of a variable. From there, it's just a matter of working out how many bytes to send to WRITEMEM. Here's the formula:

Number of X elements *
Number of Y elements * size of
variable

In this case, it's 2001 (remember all arrays start at zero!) times 2001, times 1 byte (2 bytes for words, 4 for quicks and longs). So that means we have to pass 4004001 bytes to WRITEMEM.


Loading the data back in is a reversal of the save routine:

```
IF READFILE
(0,"Ram:Savedmap")
  READMEM
  0,&map(0,0),4004001
ELSE
  NPRINT " ERROR! (Couldn't
  open Ram:Savedmap)"
END IF
```

This loads all the bytes previously saved to the disk file back into memory, directly into the array memory.

That's all for this month, more for beginners and veterans alike next month. Until then, Blitz on!

□



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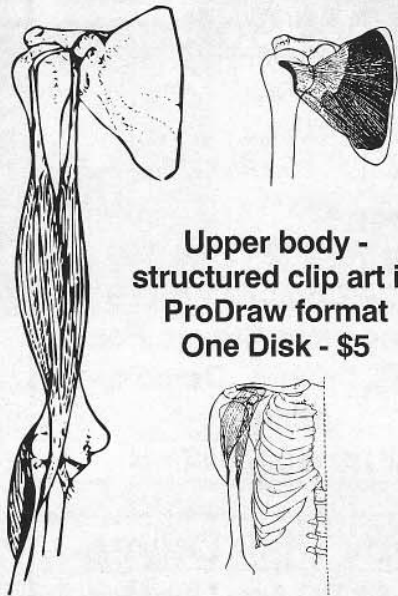
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Asimov, Douglas	Hitchhiker's Guide to the Galaxy, The	Solid Publishing	1986
Baum, L. Frank	Wizard of Oz, The	Mandarin Publishers Limited	1983
Berestford, Dick	Uncensored Boy's Own, The	Macdonald & Co (Publishers) Ltd	1980
Boardman, Tom Jr	Science Fiction Stories	Cochpou Books Limited	1983
Burnet, Frances Hodgson	Secret Garden, The	Cochpou Books Limited	1983
Carroll, Lewis	Alice's Adventures in Wonderland	Cochpou Books Limited	1981
Clarke, Arthur C.	2001 - Odyssey Two	Kranakis Publishing Limited	1982
Clarke, Arthur C.	2001 - Odyssey Three	Kranakis Books	1988
Crichton, Michael	Jurassic Park	Ranbun House	1991
Davis, Jin	Garfield: Here's Looking at You	Ranette Books Limited	1985
Davis, Jin	Garfield: Life Amid Laughs	Ranette Books Limited	1988
Davis, Jin	Garfield: We Love You Too	Ranette Books Limited	1985
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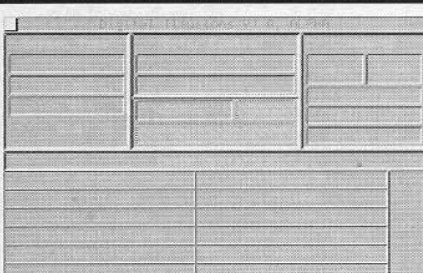
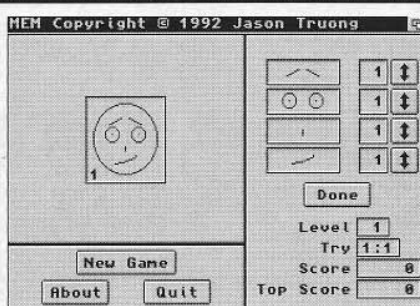
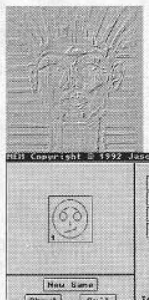


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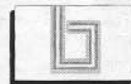
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The CEI bid ...an update

▶Last month we ran a feature on an online conference with Alex Amor, Creative Equipment International's chief. CEI and Commodore UK are the two favourites in the remarkably slow race to take over the Amiga technology, and on the 22nd of December Amor participated in another conference, this time on The *StarShip* on GENie. More than 150 people attended, and questions ran thick and fast. Many questions had to be answered offline afterwards, and we hope to bring you them in a future issue. In the meantime, here's the conference transcript!

<deb> Welcome and we're very glad you are here, Alex. I think you've got some opening remarks?

<CEI-ALEX> Thanks deb... To update all of you, the following events occurred in the last 7 days. CEI submitted an offer accompanied with a cash

deposit to the liquidator for the assets of Commodore. It's my understanding that at least one other party also submitted an offer; due to the non-standard bid form these offers were presented to the creditors to be analysed. We have been asked to submit additional documentation. But my understanding is that ours is currently the highest bid for the assets. I expect the creditors to determine the leading bid within the next seven days and set a date for the auction. No matter where we end up, we're planning on submitting a bid at the auction if we are not successful in this round.

The signs are good, since our deposit check was cashed by the creditors. Now we'll see the next steps. That concludes the update. Any questions?

<Zibri> Hi, Alex, this question was already asked before, but I wish to know what the "close future" plans of CEI for

Amiga are, and what will be the logo instead of the usual C=?

<CEI-ALEX> Plans for the new Amiga Corporation would be to have a world-wide logo contest. We are hoping to move the Amiga forward technologically and do something that C= failed to do (MARKETING). There is room at the top to move the Amiga forward (68060, RISC, better graphics, CD-ROM drive, etc.); the operating system needs to improve as the sophistication improves.

<Robert in Fargo> My fear is that the new Amigas will not be priced competitively. One can buy 486 PCs and '030 and '040 Macs with CD-ROM for about \$US1600. Will Amiga prices compete?

<CEI-ALEX> Yes, I fully understand where the current market is at. We will always be slightly more expensive, simply due to the lower volumes. But I

visit the major computer stores and see what Apples and PCs are selling for. There has never been a reason for the extreme high prices, other than greed on C='s part.

<Mike Simmons> Is Amiga the only platform for all formats? Can Amiga go the distances with the Macs and IBMs when it gets back up and running?

<CEI-ALEX> The Amiga will never be the standard when it comes to computers, but the Amiga's benefits are clear. We need to emphasise the strong points and attempt to move the technology forward and closer to the main stream.

<Jason-AR> How about the chips, chipsets, designs, etc. that Commodore has in closets that wouldn't be a priority to the new Amiga company? How seriously would you pursue licensing or selling off those technologies?

<CEI-ALEX> C= had a number of projects on the drawing board, unfortunately many were in the early stages. Our first goal is to produce the existing machines which there's a huge demand for, next the different technologies need to be analysed and a direction determined. Is the future AAA or 3D RISC, or maybe even something else? As far as licensing the technology, the answer is YES; Some of our partners want to use the technologies in other applications and we have agreed.

<Jason-AR> What I was really driving at was the past technology - things that were never even Amigas - i.e. licensing/selling off the 64 technology.

<CEI-ALEX> I don't believe there is a lot of demand for the C64 technologies. If someone is willing to pay us for it then FAB!:)

<DanWied> Does CEI have the source code for Amix? And if so, how can the development of Amix be continued when AT&T sold the source code to Novell which now sells it as UnixWare?

<CEI-ALEX> No, remember CEI does not own any of the intellectual property at this time. Part of the acquisition will be Amix. We believe that it is very important for the future of the Amiga to have multiple OSs.

<Rob Boyce> SMG has not shipped anything for a month (they said their computer was down). When do you expect that spare parts will become available for our Amigas? E.g. rev11 Buster, motherboards, etc. and what about warranty for buyers after April 93?

<CEI-ALEX> Obviously, I cannot speak for SMG. We are attempting to repair as much product as possible. Our repair staff has been doubled in the past few weeks. Our contract manufacturer is aware of the need for spare parts and that need is being addressed.

JETSTRIKE

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CLOCKWISER

- AMIGA CD32, AGA \$49.95

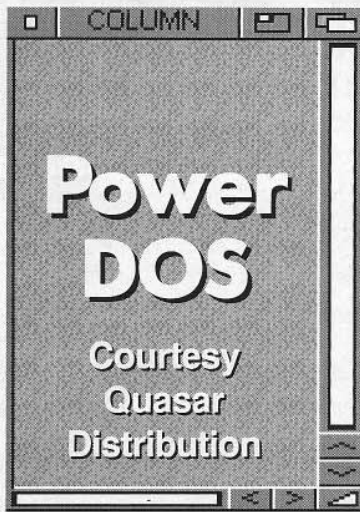
"Before you start playing Clockwiser I would advise you to take a week or two off work (or school, or whatever you do for a living) and get ready for a big electricity bill."

- James Attwood, Amiga Power, August 1994



Clockwiser is an unashamed puzzler. You have to rotate rectangles of blocks to make one side of the screen match the other - sounds simple, doesn't it? Floppy based versions contain 110 puzzles; you get 250 on the CD-based versions. There's also a puzzle editor, so you can create your own. Like all the classics, it's easy to start but hard to stop.

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MS-DOS Hard Disk Transfer

▶ Getting removable drives to work across platforms is a perennial hairy question. There are obvious benefits for professional Amiga users in being able to read the popular SyQuest cartridges from MS-DOS machines; this allows the Amiga user to move huge image or DTP files between machines without using slow, annoying serial connections.

To try to settle this once and for all, here's an edited excerpt from the PC-Task 3 manual, used with permission from Quasar Distribution. Enjoy!

While AmigaDOS's RDB (Rigid Disk Block) occupies the first 2 cylinders of a given hard disk, MS-DOS uses a different method.

Thus installing RDB's on a disk that is to be used as an MS-DOS device on another (non-Amiga) machine will render the disk useless. To get around this problem, you have to use a mountlist.

Any device that is listed when the "info" command is used, is "mounted". Most Amiga hard disk controllers auto-mount drives which have an RDB.

However, when a hard disk or controller does not contain or support RDB's, a mountlist is required. This is a text file either called "mountlist" and found in the

devs: drawer (AmigaOS 1.2-2.04), or a file named the same as the required device name in "devs:dosdrivers/" (AmigaOS 2.1+).

The mountlist tells AmigaDOS the specifications of the partition being mounted. This consists of the filesystem being used, the DOSType, the actual drive geometry and so on.

As we're trying to use a hard disk with an MS-DOS format on the Amiga, we require an MS-DOS filesystem such as MSH or CrossDOS.

CrossDOS is a commercial product that allows reading and writing of MS-DOS formatted disks (both floppy and hard) transparently from within AmigaDOS. CrossDOS is included with AmigaOS 2.1+.

CrossDOS will look for the first MS-DOS partition, and change the geometry you set to match it. PC-Task requires the actual drive geometry, so you can't use the CrossDOSFileSystem with PC-Task when you FDisk and format the drive.

If you just use CrossDOS, the disk may appear to format OK, but will be unreadable on an MS-DOS machine because the information written by FDisk will not be present.

In order to get the right drive geometry, we suggest you use HDToolBox on the Amiga. When the program is run, it will scan the SCSI bus to find any attached devices. Click on the device that you wish to format, and select Change Drive Type.

Select Define New and then Read Configuration.

You will need to write down the number of Heads, Cylinders and BlocksPerTrack. When you have written this down simply Cancel and Exit the program. Do

NOT save the changes to the drive!

These numbers can then be placed into a mountlist. Surfaces is equal to the number of Heads. LowCyl should be 0, and HighCyl is equal to the number of Cylinders minus 1.

The following is a mountlist for use with PC-Task. It is for a 44Mb SyQuest cartridge, and the cartridge is readable on real MS-DOS machines and Macintosh systems running "AccessPC" or similar.

```
PCD:
Device      = <your scsi device>
Unit        = <your unit number>
Flags       = 0
Surfaces    = 1
blocksPerTrack= 34
LowCyl      = 0
HighCyl     = 2549
DosType     = 0x4d534800
#
```

Simply insert this into your mountlist file and type "mount pcd:". This will make AmigaDOS aware of the drive, but you will not be able to access the drive from AmigaDOS.

Now boot up PC-Task and specify PCD: as drive C: at the option screen. Follow the instructions in Section 5.5 - Creating a Hard Disk Partition to FDisk and Format the drive.

You should now be able to read from and write to the hard disk with PC-Task and transfer files between AmigaDOS and PC-Task using the CopyToI and CopyToA commands.

While using these utilities is suitable for a small number of files, you may be required to transfer hundreds of files between a PC and your Amiga.

In instances like this it is far

Listing 1

```
PCC:
FileSystem=
L:CrossDOSFileSystem
Device = <your scsi device>
Unit = <your unit number>
Flags = 0
Surfaces = 1
blocksPerTrack = 34
LowCyl = 0
HighCyl = 2549
Buffers = 5
BufMemType= 1
StackSize = 600
Priority = 5
GlobVec = -1
DosType = 0x4d534800
#
```

easier to use your favourite directory utility to copy all the files across. In order to do this, you need CrossDOS and another mountlist that gives your device a filesystem to use under AmigaDOS. Listing 1 is an example mountlist entry for a 44MB SyQuest cartridge.

When this device is mounted, you will be able to read and write the device just like any AmigaDOS partition. It's simply a matter of using a CLI or a directory utility to copy any needed files across. Remember that all filenames will be truncated to MS-DOS's 8.3 format.

CrossDOS takes the first 8 characters before a point and the first three after. You may have to rename your files, as the files TESTFILE1.PICTURE and TESTFILE2.PICTURE would both be named TESTFILE.PIC when copied to the MS-DOS device.

We suggest that you name your devices as we have here. While it

doesn't matter what you call your device, the last letter of the CrossDOS mountlist name is very important.

As with AmigaDOS, MS-DOS hard disks may contain several partitions. The last letter of the CrossDOS name denotes which partition on the disk to mount. Ending the device name in C will access the first partition, ending in D will access the second partition and so on.

WARNING: Filesystems usually make the assumption that they are the only one with access to a drive, hence they often keep data internally.

Don't write to a drive from AmigaDOS and under PC-Task and expect both systems to know about the change. You can use the diskchange command from the Amiga side to tell the Amiga filesystem that the disk has been changed since it was last accessed, but no such command exists under MS-DOS.

We suggest you don't write to a drive from the Amiga side while PC-Task is running, to avoid this problem. In order to use another size device, all that needs to be changed are the Surfaces (equivalent to the number of Heads), BlocksPerTrack, and the HighCyl (the number of cylinders minus one).

A mountlist for an 88MB SyQuest cartridge for PC-Task would be

```
PCD:
Device = <your scsi
device>
Unit = <your unit
number>
Flags = 0
Surfaces= 1
blocksPerTrack = 64
LowCyl = 0
HighCyl = 2709
DosType = 0x4d534800
#
```

and for CrossDOS would be:

```
PCC:
FileSystem =
L:CrossDOSFileSystem
Device = <your scsi
device>
Unit = <your unit
number>
Flags = 0
Surfaces= 1
blocksPerTrack = 64
LowCyl = 0
HighCyl = 2709
Buffers = 5
BufMemType = 1
StackSize = 600
Priority = 5
GlobVec = -1
DosType = 0x4d534800
#
```

A mountlist for a 270MB SyQuest cartridge for PC-Task would be:

```
PCD:
Device = <your scsi
device>
Unit = <your unit
number>
Flags = 0
Surfaces= 1
blocksPerTrack = 192
LowCyl = 0
HighCyl = 2729
Buffers = 5
BufMemType = 1
StackSize = 600
Priority = 5
GlobVec = -1
DosType = 0x4d534800
#
```

and for CrossDOS would be:

```
PCC:
FileSystem =
L:CrossDOSFileSystem
Device = <your scsi
device>
Unit = <your unit
number>
Flags = 0
Surfaces = 1
blocksPerTrack = 192
LowCyl = 0
HighCyl = 2729
Buffers = 5
BufMemType = 1
StackSize = 600
Priority = 5
GlobVec = -1
DosType = 0x4d534800
#
```

□

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<Gary> Will those of us awaiting new A4000 motherboards under warranty replacement get motherboards with the 3.1 ROMs?

<CEI-ALEX> All new Amigas will ship with 3.1. We will implement a special price policy for C='s warranty repair customers.

<Lewis> I read in Amiga World a couple months ago that CEI was working on something secret that they would produce as soon as they got the rights to Amiga. Is this true and if so, what is it?

<CEI-ALEX> We promised a surprise when we complete the acquisition of C=. Time will tell!

<James Santiago> You have talked about licensing technology. Any plans for the other way around, as in an existing 060 board or maybe Sound Blaster type expansions?

<CEI-ALEX> The Amiga technology can be the cornerstone of new derivative products. There is no reason why we shouldn't attempt the "Trojan Horse" syndrome - an Amiga inside a PC.

<Zibri> On IRC conference you said that C= forgot the "low-price/good product credo" in the last years (especially about A4000 and A3000) - what are YOU gonna do?

And what did you mean with "slightly more expensive simply due to the lower vol-

umes"? It sounds like a "PLATE's HAND WASH" and will newer Amigas have CROSS-MAC, Emplant or PC-TASK-like applications in the newer Operating System?

<CEI-ALEX> Be REALISTIC, PC makers produce millions of PC in a typical year. The Amiga has traditionally

“Commodore
was greedy.”

sold hundreds of thousands of units in a year. Their cost on chips, hard drives, and so on is less.

<Zibri> Yeah, but how much more expensive? I'm afraid of another A4000 syndrome...

<CEI-ALEX> At the same time, there was no reason why an Amiga 4000 should cost \$US2500. Commodore was greedy.

The intelligent customer is willing to pay a few bucks more, but not be raked over the coals. If you think that you'll purchase an Amiga 4000T for less than a 486SX, then I think you are going to be disappointed.

<CEI-ALEX> PS Multiple OSes are important, yes Cross-Mac, yes Cross-Dos...

<Zibri> That's fine... but I think Commodore sold more A1200s to people who put accelerator boards in them than A4000s.

<CEI-ALEX> The market for the A1200 is completely different from the 4000 market. Most 1200s are sold in Europe. The consumer wants performance, connectivity with a television and the lowest price (sounds a lot like the old 64).

<Zibri> And A4000 doesn't even have a composite line out... lots of users use Amigas for home videos and titling and I think they shouldn't be forced to buy video boards or other stuff.

<CEI-ALEX> There is no reason we can't capitalise on this formula. Yes, all Amigas should have audio and video in/out.

<Sean> A couple of related questions: How has the liquidation delay affected your profit projections, in light of having missed the Christmas season, and how do you plan to fund a significant marketing campaign against the poor public perception of the Amiga? Will you be aiming marketing at first time buyers or previous owners?

<CEI-ALEX> Our projections never included Christmas. At the same time we believed



that we would have control of the assets in August. This has affected the timeframe and the profit projections. We have a large task ahead of us. First, filling demand and trying to keep the existing user base in check. Then comes the real tough job, which is attracting the new buyer. Enough funds have been set aside to accomplish this. Our marketing funds exceed C='s marketing funds for the last 2 years of operations.

<Gary Wolfe> Alex, I think Amiga fans everywhere are ecstatic! What are your plans for the mass market? My hope is for A1200s to sell like C64s. A cash cow is needed to continue all levels of development, I think. Also, don't forget the user groups! Cheap form of advertisement...

<CEI-ALEX> The best advertising is our existing user base. We have close to four million salespeople out there. It's going to be tough to get wide market appeal, but we have to start somewhere. Since being involved with the Amiga we have always supported the local user groups, and hope to expand that world-wide once we're operational.

<kevin s. frost> How long will it take for a next generation Amiga to see the light of day, and do your plans for advertising include TV spots in the US?

<CEI-ALEX> Development will resume immediately. Typi-

cally it takes nine months for new models, 18 months for new technology.

<Robert in Fargo> Currently one can buy an '030 Mac with 4Mb + 160Mb HD, CD-ROM, monitor, and software for \$1299 in Fargo. Will you be able to make and sell a 1200 package with HD and AGA-compatible monitor for \$800 or so to compete?

<CEI-ALEX> It's tough to discuss exact pricing until everything is operational. The short answer is yes, the A1200/CD/Monitor for under \$1000 is possible.

<deb> Alex, Kevin asked before and you must have overlooked it, about TV spots for the US?

<CEI-ALEX> No, the initial budget does not call for US TV spots. That would have to come at a later time, as distribution is improved in the US. In Europe the need for TV is more important.

<Evil Genius> Some folks say that the C= buyer will simply produce enough machines to fill demand, and then halt production. What assurances do you offer about this speculation? Being orphaned once is enough for me. Make me feel safe.

<CEI-ALEX> We've looked at that possibility and must admit it makes financial sense. But, the difference is that

I believe in the technology, I have been involved with C= for 16 years. In other words my heart, not just my wallet, is in this venture.

<Mike Simmons> Alex, What attempts will be made to get some of the past software developers and distributors that have dropped the Amiga line re-interested in the Amiga here in the US?

<CEI-ALEX> That looks like a two parter. First, if the Amiga is going to succeed we need all the developers back. We can accomplish this by bundling products, co-marketing programs, financial incentives, and having a true partnership.

Distribution is important also. Many times the consumer wanted to purchase products and no dealers were available. We have hired a consulting firm to locate and create a nation-wide dealer network in North America. Many of the old dealers are willing to come back.

<Scott Sawyer, Egad Intl.>
#1 Which markets will get Amigas first, U.S. or European (I'm a CEI dealer, I need Amigas... :-)? #2 When will the COD thing with CEI dealers end?

<CEI-ALEX> Plans call for both markets to get computers at the same time. Once we announce our manufacturing partner it will become evident how this is possible. Unfortunately, due to the unstable market with



C= filing for liquidation, a few bad apples spoiled it for the good dealers. As soon as the new corporation is operational, dealer terms and conditions will be provided to existing dealers (based on merit ;).

<Jack> In previous conferences you said that AAA Amigas will NOT be produced, instead R&D will focus on RISC Amigas. Is this still true? If so, I'm wondering - isn't it easier to produce AAA machines which are 95% done (according to Dave Haynie), instead of making whole new Amigas, with an OS that has to be basically re-written for RISC machines?

<CEI-ALEX> Jack, its hard to make firm decision without owning any of the assets. I will have to take a look at the work in progress before firm decisions are made. Do you realize that AAA has been around since before 1992? What I'm saying is let's take a look and determine if it's still viable today.

<Kelvin> What is your opinion of the new Amiga clone announced by MacroSystems Germany? Will you support these sorts of clone machines and are you willing to license the OS for them?

<CEI-ALEX> An Amiga clone is not an Amiga clone unless it can run ALL the software and hardware. MacroSystems has a great idea and a lot of work ahead. With the proper terms I see no reason why the

OS can't be licensed to them.

MacroSystems is also a great developer and supporter of the Amiga.

<Jason-AR> Clarification: The MacroSystems DraCo is like an Amiga, minus the custom chipset, plus a Retina for display hardware.

**“Typically
it takes nine months
for new models, 18
months for new
technology.”**

<daryl> What requirements will you put on new and current dealers, and how will the buying affect your other services?

<CEI-ALEX> This is not the forum to discuss dealer specifics. Existing dealers that are proven are not a problem. Coverage in new areas is a priority.

<floater> Assuming the situation resolves in a few weeks, when do you expect to have product available? And I think you should work to have a competent NYC dealer - which there hasn't been for YEARS!

<CEI-ALEX> Input taken on NYC. Amigas can be available 60 to 90 days after court approval.

<Doug Cotton @ CMD> Following up on Jason's question on the older (64/128) technology: Someone is indeed interested. Who should they contact at CEI to discuss that further?

<CEI-ALEX> If you are interested in purchasing the 64 technology call Dave Defelici at (305)266-2800 ext 108. Tell me it's true PLEASE ;)!

<Doug Cotton @ CMD> It is.

<Demetri [Speed Demon]> What are the chances of getting back the old Amiga crew, like Dave Haynie, Mike Sinz, Brian.Darren etc? With no more people left at C= (USA), how do you plan to enhance the Amiga with new features? Without the people who know about the OS and hardware, it's like starting over from scratch with a new crew. And how about the floor scrubber, will it get upgraded :)?

<CEI-ALEX> Jason is in charge of the floor scrubber. We have been in contact with engineers who have left C= in the past four years. As a general rule (no specifics) most of them are committed to the Amiga and are willing to return if the conditions are right (free pizzas every night) ;). At the same time I believe that bringing in some new blood might add new perspective to our technology.

<Jason-AR> As for the floor scrubber, we are already planning to make sure that the



new floorscrubber technology is backwards-compatible with all Amigas, and are working on a PCMCIA battery recharge interface.

<Alan> Alex, what would CEI's plans be for the CD32? Would you market it aggressively against the Sega and Nintendo in the US?

<CEI-ALEX> Reality sets in. There is a market for the CD32 and we will support it aggressively. But there is no feasible way of competing head to head against Nintendo and Sega. Their ad budgets are beyond belief. Let's concentrate on our strengths and dominate those markets.

<Rob Boyce> What was the status of the stuff in the warehouse in the Phillipines - anything of value? I have started to collect amigas and am curious ;). CD32s will sell themselves once they become widespread.

<CEI-ALEX> The inventory in the Far East is a shambles. It will take many months to sort out all the parts. There really is nothing of real value there.

<Sam Ormes> New company name? Headquarters location? Will Miami store remain? Manufacturing locations?

<CEI-ALEX> The working name is Amiga Technologies International, but that's subject to change as things get closer. Because most of the engineers live in the Philadelphia area, we're looking for facilities

there.

<ERIC MORRITT> Given all the information about the intent to continue manufacturing the Amiga, do you think it would be wise to base a computer graphics business on Amiga technology?

<CEI-ALEX> If I had to answer your question today I'd say no. We need to move the Amiga forward and have it gain wide acceptance in a number of new fields. Six months from now the answer should and will be yes.

<Shane @ DUP> How will CEI support small programming companies like Dark Unicorn Productions (developers kits, etc)? Also, is there any truth to the rumor that MicroSoft is backing CEI :(?

<CEI-ALEX> The Amiga developer has been traditionally been a small home based creator. It's important to remember this when setting prices on development tools and providing the information for reasonable costs.

Excuse me, that was Bill on the phone ;).

I'm sorry but do to the nature of the beast I am not able to disclose who our partners are.

<Bill> Will you be aggressive with your marketing like Apple is?

<CEI-ALEX> YES. Special pricing for schools, developers,

print ads, direct mail, etc. We realize that we must be aggressive.

<Odie> Will initial releases of the 1200 see 3.1 or any other changes? How about future 1200s - 030? Akiko? HD floppies? CD-ROM?

<CEI-ALEX> Yes to 3.1 on the initial 1200s. The 1200s have a lot of room for growth - built in CD, faster processors, more space for HDs, on board memory expansion and much more.

<DavidM> Will there be any upgrade deals for current A4000 owners like the old trade up deals of yore, or possibly upgrade kits like a real tower case kit with lots of slots and a larger power supply?

<CEI-ALEX> One of the few things which C= got right most of the time was their upgrade policies. By using standard form factor on boards this becomes easier.

<Peter> Will you be the CEO of this new Amiga company? Do you plan to introduce a better OS (with RTG, networking, etc.) before the next generation of hardware? This does not include 3.2.

<CEI-ALEX> Titles are not important. Yes, RTG is something the Amiga needs sooner rather than later. I see the ability to release yearly updates to the operating system and price them reasonably, instead of



releasing a new OS and charging an arm and a leg.

<CEI-ALEX> Improvements I would like to see include RTG, networking support, a more professional look, more speed...

<Mark> Have you had any recent contact with the C= UK management team, and if so what was the substance of those contacts? Competition at the bidding stage is understandable, but when all is said and done, the UK had the most successful and complete advertising machine, and the UK market earned much of the bread and butter which went to feed the production of the high end Amigas so beloved in the US.

<CEI-ALEX> Mark, we have made a number of overtures to the UK management team, unfortunately the decisions aren't up to them. The opposing group is composed of a Red Chinese investor and an Australian financier. Yes, we are willing to work with them when all is done and said.

<Don> Will we see beefier machines? Not 25MHz stuff - more like 40+MHz... it has to be cheaper for you to do it than for me to spend \$1300 after I buy my new 4000T!

<CEI-ALEX> YES YES YES YES YES YES YES YES

<Bill Hinkle> Have you had discussions with any major

retailers to sell hardware and/or software?

<CEI-ALEX> Yes, in the past few months we have had plenty of opportunity to speak

“An Amiga clone is not an Amiga clone unless it can run ALL the software and hardware.”

with major retailers. All of them expressed reservations about C= but are willing to work with a new entity if the conditions are right.

<deb> OK folks, it's nearly midnight for Alex and he's tired. And I'm still looking at a queue of over two dozen people with questions.

If you will leave me your question in email, either "Mail to sysops" at menu or to me directly, I'll fax them to him and he'll get answers back to you. Fair deal?

[Now that nobody else can talk, how can they argue?]

Thank you Alex, we've been keeping our fingers crossed.

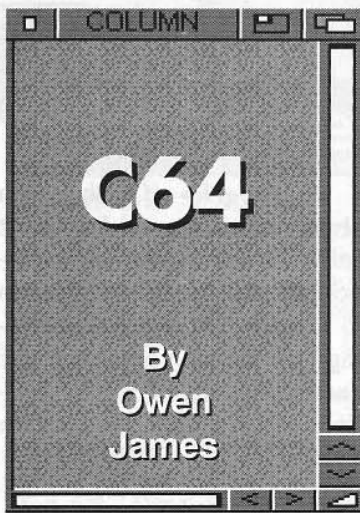
We will continue to keep our eyes peeled for news.

<Jason-AR> (Or they can always email me and I will just call CEI and harass the receptionists until someone owns up to actually being in the building.) :) Thank you, Alex, for once again violating your bedtime to have this conversation with us.

<CEI-ALEX> Thank you for the opportunity and support... In the past week we have received hundreds of notes, calls and letters of support and ideas. THANK YOU ALL!

As we said last month, we're still waiting to find out who's got the Amiga technology. At the time of writing there's still not been any official announcement, although occasional rumours still pop up and gain popularity before being squashed by the obvious absence of any corroborating evidence on any of the on-line information services.

Commodore UK have been very quiet indeed recently; we haven't heard anything much from them since their widely promoted November 4th finalisation date passed uneventfully. On the other hand, for all their conferencing and goal-stating, CEI haven't done anything official either. It's probable that there's a lot of behind the scenes action happening, but after all this time we can only wonder what's taking so long. No doubt it'll all be clear in about five years; in the meantime, all we can do is wait, and hope that sometime the optimistic bidders' statements will turn out to be correct. □



► Brunswick Publications has kindly been in contact, with details of some new public domain software releases for the C64. Most of these are sourced from Europe, where development of C64 software still continues. As always, the disks are available from Brunswick for \$5 each, and if you'd like a catalogue write to the address given below.

DISK 222, POWER BUDGET. A flexible home budget, management and filing system for the C64, written by the associate editor of the popular Lodestar magazine. Makes easy projections with tentative budgets for an entire year, and can handle the printing of yearly and monthly reports. Accessories include a calculator and a good online help facility.

DISK 224, ASTROLOGY. A comprehensive astrological personality profile from Hettiger's Astrologers of the USA. Simply enter a date and place of birth, and the program will produce an individualised personality profile that can be printed or viewed on screen. Fun, but not quite as fun as seeing lewd pictures in an inkblot.

DISK 230, MANDELBROT. Two mandelbrot generators for the C64. Includes some sample pictures, and one of the generators allows the saving of pictures to disk. Be warned that creating full-screen, detailed mandelbrots can take a considerable amount of time, but the images are always fascinating.

DISK 231, BANK ACCOUNTS. An updated shareware version of Jim Abronski's Bank Accounts program. It allows tracking of up to three accounts, stores information for monthly bills, prints mailing labels, and has hard copy facilities for all account details.

DISK 232, DISK UTILITIES. The complete version of DCMR, which keeps a database of disk directories and will print them in up to three columns. Includes documentation and support files. Also included on this disk are a series of disk utilities, including a program to format disks in six seconds. Very worthwhile.

DISK 233, BASIC FOR BEGINNERS. A compilation of tutorials for the beginner. Taken from issues 1-7 of Brunswick's regular disk magazine, and featured here with an auto-load menu for easy access. No previous knowledge of programming is necessary. Covers simple commands, sprites, character sets, and more.

DISK 236, DEMO DISK. Finally, the winning entries from the Elysium demo party held in Poland in June 1994. Includes the very popular Klepka/Vermes which has some of the best animations seen on the C64. Amaze your friends!

DISK 240, PAINT & DRAW. Hi-Res Edit is a fully functional paint program with Zoom, Airbrush, Undo, Brush, Pen size and all the usual features. Also includes a utility to make your own slideshow. Hard copies may be made to any Epson FX80 (MPS1230) or Centronics printer.

Brunswick also has plenty of new games disks and GEOS clip art and fonts available. Contact Brunswick by writing to PO Box 745, Campsie NSW 2194.

Interfacing with a network that spans the globe may sound beyond a C64. Many people are amazed

that the C64 can so easily use a modem and hook into a local BBS, let alone the international Internet.

The truth is, Internet access is a job the C64 can handle quite well, thanks to the very nature of the Internet. Firstly, a few explanations.

The Internet is a planet-wide web of linked computers. It can be used for retrieving research material, posting Email, grabbing pictures and sound, and even talking in a live worldwide forum. In theory it doesn't matter if the data you're looking at is stored on a PC in Sydney or a mainframe in Washington, the material can be accessed just as easily.

If you're logging onto the net from your home or office, your computer is usually doing little more than acting as a dumb terminal to the host computer. Whatever you type is sent to the host, and the output gets piped back to your screen. In this mode a C64 can operate just as well as a Mac, PC or Amiga. Of course, you won't have access to graphical interfaces like Mosaic, but the more common shell interface will do the job just as well, and a damn sight faster.

To hook in, you'll need a modem and a terminal program, preferably one capable of VT100 emulation. If your modem wasn't designed specifically for the C64 you'll also need an interface.

There have been several Internet articles in Amiga Review over the past few months, so I won't repeat the basics. Instead, starting next month I'll be looking at what's available specifically for C64/128 users.

Until then, if you'd like to contact me please write to The C64 Column, PO Box 288, Gladesville 2111. I also welcome feedback via Fido Netmail at 3:713/888.999 or via Internet to oj@code1.-dialix.oz.au. See you again next month. □

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May 1994 Vol 11 No 5

- Understanding Amiga Graphics - Computer images often require a compromise between quality and file size - we explain how to achieve the best balance - Modems - An introduction for Beginners - A modem can bring all kinds of information to your Amiga at a very reasonable cost - Up and Running - Making your modem work - trouble shooting and a checklist of what to do.

☆ Personal Write - super cheap word processing with interesting features - Map Studio Vol 1 - JPEG graphics - DPaint Tute - The DPaint beginners friend - Deluxe Paint Tutorial - The sky's not the limit - Education - Crossword Wizard - Hot PD - Utilities extract more from Workbench - Blitz Basic - Squeezing your Data - Desktop Publishing - Creating Reversed text - Help Line - Problems solved - Online AMIGA! - Start your own MAX'S BBS

☆ C64 Column - CMD picks up GEOS - Games - The Settlers, Second Samurai, Kingmaker - Quest for the Crown, CD32 Games - Trolls, Alien Breed/Quak, Project X.

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- Art Department Professional 2.5 - The latest version - The future with AAA, new AAA chips! - DirWork 2 - Amiga Picture Viewers, which is the best - we compare 20 of them - Neptune Genlock, Desktop Video just got better - Amiga Animation Software.

☆ DTP Column, Creating forms in Pro Page - Hot PD - Online Amiga - Blitz Basic - C64 - Games - Liberation - Captive II, Skidmarks, Cliffhanger, Apocalypse, Legacy of Sorasil - CD32 Games, Surf Ninjas, Global Effect.

July 1994 Vol 11 No 7

- Wordworth 3.0 First Impressions - Disk Expander Review - Imagine 3.0 Review - TypeSmith 2.02 - MiGraph MS1200 - Networking Intro - PARNET - PageStream 3.0 - Video Creator CD32

☆ Columns - Hot PD - Amos - CanDo - Arexx - Education - Real

3D - Online - Blitz - DTP Column - C64 - Entertainment, James Pond 3, Noddy's Big Adventure, Dyna Blaster, Mr Nutz - Hoppin' Mad, Star Trek 25th Anniversary

August 1994 Vol 11 No 8

- Wordworth 3.0 vs Final Writer, Is bigger always better? - Virtual Memory, Good as RAM? Using your hard disk to make up for low memory - TypeSmith Font Design, Convert, edit and create typefaces for your Amiga - Biomechanics, Podiatrists find a use for the Amiga with a video digitiser - Deluxe Paint Tutorial, Creating lifelike textures and animation - Microvitec Monitor, The ideal monitor surfaces at last, perfect for AGA machines - Imagine 3 Tutorial - Animation Column - InfraREXX Control - Software for Little Kids, a suite of programs for little kids.

☆ Columns - HotPD - DTP - Humorous - Online - CanDo - C64 - PowerDOS - AMOS - CD32.

☆ Edutainment - KidPix, painting made fun - Games, K240, Dragon Tiles.

September 1994 Vol 11 No 9

- Stepping up to CD-ROM, review of the NEC 3X triple speed drive - Piracy, Alive and Well - PAL Lightwave, Newtek's monster 3D rendering package is now available sans Toaster - SX-1 CD32 Expansion - Supra 28 Turbo, Supra 28Mhz 68000 accelerator gives you power without the price - DevCon Report.

☆ Columns - Hot PD - DTP - Online - CanDo - PowerDOS - Amos - CD32 - C Programming - Education.

☆ Games - Armour Geddon II - Fury of the Furries - Brian the Lion - Benefactor - Traps and Treasures.

October 1994 Vol 11 No 10

- A TBC on your desktop? Improve the quality of your next DTV effort - Amiga into the future, what Commodore UK has in store - Fast Animation, no hardware - A2000 revisited - Graphics boards and mode promotion - Personal Animation Recorder - Registering your Shareware - Turn your A1200

into a CD32... almost!

☆ Columns - HotPD - Blitz Basic - Online - Power DOS - C Programming - Games - Nick Faldo's Golf, Pirates, Impossible Mission 2025 "The special edition".

November/December 1994 Vol 11 No 11

- Brilliance 2.0, 24 bit painting without extra hardware - power to the people! - Disaster Recovery, when in trouble or in doubt, run in circles, scream and shout. Or read this. - Quark Express vs PageStream 3.0, How does the new kid on the Amiga DTP block stack up - Money Matters, a cash book for small business and home - G-Lock, GVP's software controlled genlock - Understanding Fonts - CD Roundup - Easy Ledgers, professional accounting.

☆ Columns - Blitz Basic - Online - AMOS - C64 C Programming - Games - JetStrike - Secrets of Frontier Elite Hintbook. Review of the Competition Pro Super CD32 Controller.

SPECIAL EDITION ANNUAL

January 95 Vol 12 No 1

- Lightwave Goodies, extra software finally in Australia - CEI Conference, hot from the Internet CEI boss Alex Amor speaks - Removeable storage shootout, comparison of the new Bernoulli and Fujitsu 230Mb drives - Magic Lantern - Surf the Net, Internet access with your Amiga.

☆ ANNUAL SPECIAL - Amiga Dealer List - Amiga Service Centre List - Amiga BBS Listing - Fish Listing

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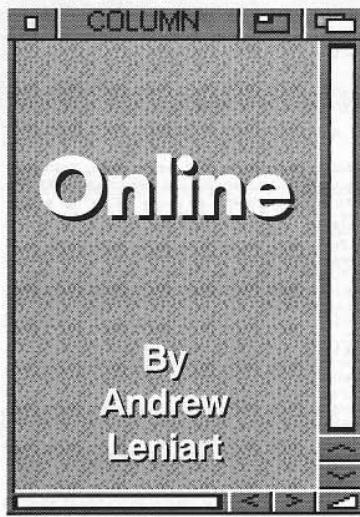


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► After the excellent article on Internet access by Robert Atkins in the January issue of Amiga Review, I thought I'd take a rest on the Internet topic this month and catch up on a few other items. More Internet hints and tips for beginners next issue, but for now, on with the show!

SPOT update

SPOT, arguably the best pointing software package currently available for the Amiga, has been updated. Version 1.3a has just been released, containing many bug fixes and a few new features. Note that Dean Brandt is no longer the Australian registration site for Spot - you need to register directly with the author. Look for the SPOT13A.LHA archive at a BBS near you.

BBS listing complaints

It seems a few sysops noticed errors in the Amiga BBS listing which appeared in the January Annual edition of ACAR. Well fellas, you're sending your hate mail to the wrong bunny. Daniel (I knew you'd slip up sooner or later, buster) Rutter compiled that list, so feel free to redirect all hate mail to his mailbox. [Right, that does it. Guido! Luigi! Visit the man! - DR]

On a serious note, it's near impossible to make sure that every Amiga supporting system is included in such a list [I just used every board in the Australian BBS

listing that ran on or listed support for Amigas - DR]. If you (or your favorite Amiga BBS) didn't appear in the list, then send in the details to the ACAR offices and we'll make sure your details appear in the next one we publish.

Heck, if you write a particularly sad story to us, you might even get a special mention to correct the problem, just like the one Keith Antoine scored below.

Yes folks, the Amiga modem-ing world should now be a much happier place because you'll all know that WindDragon Inn BBS in QLD, with FIVE gigabytes of files online, TWO lines and an Internet SLIP link is now available to take your calls.

But wait, that's not all! Did you know that WindDragon Inn also runs the Commodore Amiga Computer Group BBS in a piggy back fashion, and provides high end graphics and animation support running user accessible hardware? Well it does, and just when you thought you knew everything there was to know, you guessed it, there's still more!

Running under Xenolink Professional BBS software on an Amiga 3000, WindDragon can be accessed by dialing (07) 300-5569 (28.8k) or (07) 300-6357 for all speeds up to 14.4k. Fidonet and Amiganet message areas are also available for your reading entertainment.

So there you go folks. Give WindDragon Inn a call and tell Keith Antoine "Online Amiga" sent you. You never know - you just might score a free set of steak knives to boot!

Modem problems

The following scenario should ring a few bells for many modem users. You log into your favorite BBS to get your daily fix and not a few minutes into your session, wham - the modem suddenly loses

carrier. Sound familiar? No, it's NOT likely to be the sysop on the other end dropping carrier on you because he doesn't like you.

The above problem had plagued me many times over the years with four different modem brands, and despite calling the modem manufacturers and Telecom for advice several times on how to solve the problem, I continually ended up back in square one and none the wiser.

The modem manufacturers would blame the phone line, while Telecom would tell me (assuming I was able to get onto a technician that actually knew what a modem was) that the fault was likely to be with the modem. Sounding even more familiar now? Argghh!

So what's the solution? Simple. Forget about calling the modem manufacturers or Telecom and talk to people that have a better idea of what's probably going on. So who are these gurus? People on the nets. Fidonet echomail areas such as Aust Modem or conferences devoted to your brand of modem are an excellent source of good info, as are a few of the Internet news groups.

I believe I've now solved my carrier loss problems with other people's help and advice, so here's a few tips I found useful which might help you out. It involves a fair bit of experimentation, but it sure paid off for me, so was well worth the time I had to spend fiddling.

Voice telephones are nowhere near as sensitive to line quality as a modem is, so a bit of a crackle or a hum on the line for a second or two will not affect a normal telephone at all.

A modem, on the other hand, needs the line to be almost noise free and continuously monitors the line quality and compares it to its EQM (Eye Quality Monitor) threshold register setting. If the



line quality deteriorates below the modem's EQM register setting, the modem will either attempt to retrain to a lower connect speed or simply disconnect (the dreaded NO CARRIER message).

The obvious answer to this problem is to simply increase your modem's EQM S Register setting to a higher value - assuming your modem will allow you to do that of course. My Netcomm V32E7 SmartModem did with the ATS33 register setting, but you'll need to check your manuals to see if yours will allow you to alter the EQM setting and which S register to use.

Another S register to which might help correct the problem is the Lost Carrier/Hang Up delay. On the Netcom v32E7 Smartmodem, it's S10 and defaults to 18. Check your modem manual for which S register it uses for this delay configuration, and try increasing its default setting a bit to see if that helps the problem.

Next, check to see if your modem supports data compression (NOT MNP error correction). Data compression control on my modem was configured with the AT%C command and turned off with AT%C0, but again, your modem may well use a different command, so dig out that manual again.

If you find that your modem does support compression and that it's enabled, then turn it off. The purpose of data compression is to reduce the size of data being transferred, but this is only useful on straight text or other compressible. As 99% of material on bulletin boards is archived, all it will do is try to compress material that's already compressed anyway, making little difference to transfer speeds.

If all the above fails to alleviate your carrier loss problems, here are a couple of other things to try.

1. Firstly, check what sort of exchange the telephone line you

use to dial out with is on. I'm told that the best type for modem use is a digital exchange. To find out if you are on a digital exchange or not, give Telecom a call and ask if you can have the "Call Waiting" service on your line.

***“Don't talk
to the modem
manufacturers or
Telecom - talk to the
people who REALLY
know what's going
on!”***

If they answer yes, then you are on a digital exchange. If they say you can have it, but that they'll need to give you a new telephone number first, then you are on an old (non-digital) type exchange. Intermittent line quality problems can frequently occur on the older exchanges.

If you already have call waiting connected to your phone line, make sure it's turned off before you use your modem. If call waiting tones come through during a modem call (that little Easycall "beep-beep"), your modem will lose carrier nearly every time.

2. What does your phone line plug into? If you have the old type rectangular phone socket in your wall, ensure the little metal contacts (on either side of the plastic prongs) in the modem plug are nice and clean, without any corrosion. Give them a gentle rub with a fine nail file, pen eraser or similar to clean them up a bit.

If all else fails, you may need to send your modem back to the manufacturer to have it tested. Be sure to get a quote before doing

this though, because modem testing can cost you heaps once a modem is out of warranty. Sadly, if the modem does turn out faulty and requires repair, it can often be more cost effective to shelve or try to sell the the modem and simply purchase a new one.

NOTE - Before going to the last drastic step, make sure that the problems don't only occur with just one BBS system that you call. If you have problems with one BBS, but none with the others that you call, then you have to consider the possibility that it's the BBS end with the problems.

I was lucky enough to be able to solve my problems with simple modem configuration. I'll also soon be telling Telecom to switch my BBS line over to a digital exchange so I have a better chance of clearer lines. I'm hoping that the above information may help some of you solve your own similar problems just as cheaply and effectively. Long and solid carriers to one and all.

Send feedback direct to:

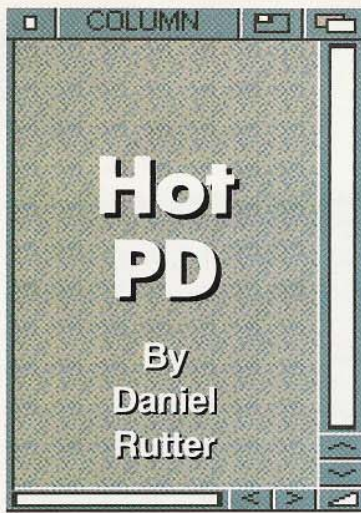
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Hoppers Crossing
Victoria 3029

or contact me via any one of the following methods.

**Andy's Attic BBS: (03) 749-4897
3:633/106 @Fidonet
41:300/106 @Amiganet**

*or via email at:
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□

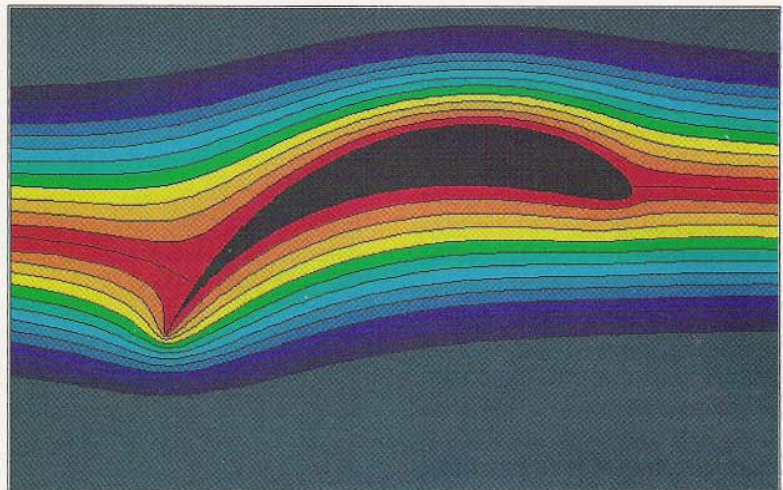


▮ I have been most remiss. Spoilt by people sending me software, and by Fred Fish's sterling efforts, and by the Aminet CD-ROMs' bounteous crop of cool freely distributable stuff, I have been neglecting my download directory. Every time I find something nifty on a BBS I snarf it down into my faithful data:down/ directory, but I haven't been clearing all this stuff nearly as quickly as I used to.

There is, as I speak, more than 87 megabytes of it. Much more with all the archives uncompressed. I consider this a tad excessive. So into the download directory I delve for this month's column!

* Shepherd

A decent shareware god game. There have been quite a few god games - Bullfrog's Populous, Populous II and Powermonger spring to mind, and Blue Byte's more recent The Settlers - but this is the only one you can legally evaluate for free. As usual, you're a god and the aim of the game is to get rid of anything that has the folly to follow someone other than you. Unlike most god games, there aren't any little people involved; your followers are all animals, which you create by using the god energy your faithful animals generate. You can also create extra fodder for the animals (essential as populations grow) and, of course, you can wreak holy vengeance upon the unfortunate critters of the Other Guy.



Airfoil

Shepherd isn't as good as even Populous 1 - it's a bit clunky, the graphics are average, there aren't a vast number of things to do and you can't play against another human - but it's good nonetheless and still worth a look. You need a megabyte of RAM to run the Shepherd, but that's the extent of the requirements.

**** Airfoil

An oddity, but useful for some. Airfoil does conformal mapping of the airflow around a configurable airfoil. If you want to do conformal mapping of the airflow around a configurable airfoil, Airfoil is the program for you. The accompanying picture may make the program's purpose clearer. Or not.

* Amiganoid

Just when you think there's nothing else you can do with a concept, some smart aleck comes along and tweaks it some more. This is a Breakout game (bounce the ball off the bat to break the bricks), incidentally from the makers of the graphically stunning commercial game Benefactor but with nothing like its complexity, that has two bats. One's at the bottom and is operated by moving the

mouse left and right, as is normal, but the other one's on the right hand side, and is operated by moving the mouse up and down.

Apart from that, this is a pretty ordinary Breakout game. But hey - how many gimmicks do you want in one program?

** How-Long

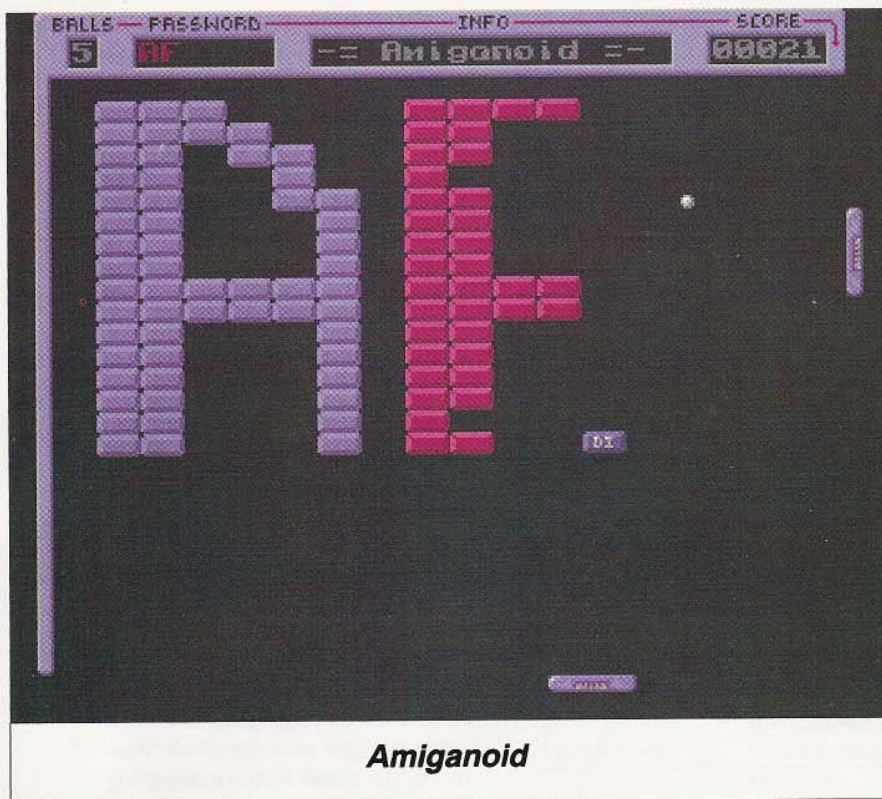
This almost offensively simple program tells you how long a file will take to send over a modem, or other low-speed data link. It's got a slider you move to tell it what transfer rate to calculate from, and a button you click to pop up a file requester to show it the file you're going to send. That's it.

* Racing Maniacs

Here's a simple vector graphic race game with computer opponents of variable quality, two player competition, a four-sided car damage system (lose a side and the

Program complexity guide:

- * Elmer
- ** Yosemite
- *** Daffy
- **** Bugs



Amiganoid

damage goes to your innards...), and, for spice, optional land mines and bonuses.

You can even do a reverse race, where the cars scream around in opposite directions (CHICK-EN!). Racing Maniacs isn't pretty but it's smooth and unpretentious, and it's good for a half hour of entertainment on a rainy afternoon, which is all I ask of a simple game like this.

*** ARCHandler

This one's a gem - though not as highly polished as it could be. If you do a lot of comms, you'll be swimming in archives - and they're common enough on PD disks and CDs, too. The dominant Amiga archive format is LhA, with few Amiga files coming in any other format, but having only one flavour doesn't make it any more palatable.

Directory utilities can simplify archive handling, but wouldn't it

be nice to have an Amiga system like the IBM directory utilities that let you treat archives like directories?

Tah-daaah! ARCHandler sets up an extra pseudo-disk device which you can use from Workbench, Shell or a directory utility, which contains a mirror image of all your devices - except any .lha archives are now treated like directories.

Unfortunately, ARCHandler thus far only supports read operations, which kills a lot of its possible uses. You can look inside an archive like a directory - no problem. You can copy files out of the archive - fine. But you can't move anything into it or delete anything from it - or edit any of the files it contains.

You should also be careful about using other system patches at the same time; the good old Kan system (that moves deleted files into a Kan directory and actually deletes them the next day) got puz-

zled about ARCHandler's pseudo-device and had to be stopped.

Those problems aside, this is a worthwhile addition to your system. It requires Workbench 2.

** GTuner

This little program produces the E-A-D-G-B-E tones to which a vanilla guitar is tuned. If you want to tune your guitar like Hendrix it won't help you, but for mere mortals it's quite cool. Cheaper than a plug in tuner, and perfectly accurate.

** BluffTitrer

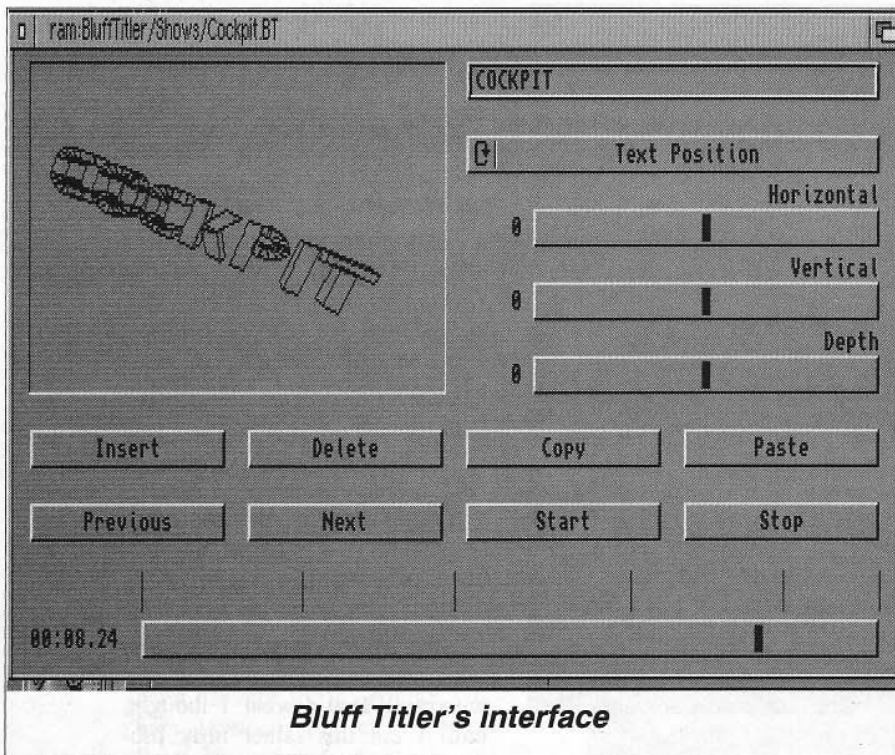
This oddly named offering is a video titler - well, a demo version of one, anyway.

Big deal, I hear you say. Seen 'em before. Scrolling text, whoopee. That's what I thought, until I ran this rather nifty program; it does 3D titling.

Until now, 3D titles required either fakery in Deluxe Paint or similar, or time wasting with a monster rendering package. Sure, an expert DPaint user or rendering guru could produce quick or gorgeous titles, respectively, but that left the average home user wanting a Ben Hur intro for his wedding video (it takes all sorts) out in the cold.

BluffTitrer produces a simple vector graphic 3D presentation of any title, up to 30 characters (including returns if you like). You type your text, then you drag a slider on a timeline and simply set points, telling BluffTitrer where you want the text to be at each point and in what orientation. BluffTitrer fills in the bits in between and bingo, a funky 3-D title.

There's only one font, but you can play with its width, height, spacing and slant as much as you like. You can also put groovy cop-perlist gradients on the text and background if you like - AGA



copperlists look rather nice, ECS ones rather cheesy. This demo version has a big cheerful untidily written "THIS IS A DEMO VERSION" on the screen all through the presentation, which is something of an encouragement to spend the \$US15 to register.

*** Bustest

This squib's aim in life is to tell you technical things about your memory data transfer speed, to and from. It measures chip and fast RAM speeds and ROM transfer speed as well, and it tells you how fast your Amiga's pushing data around internally. There are, of course, lies, damned lies, statistics and benchmarks, but one more little benchmark won't hurt.

Fastrates hoax

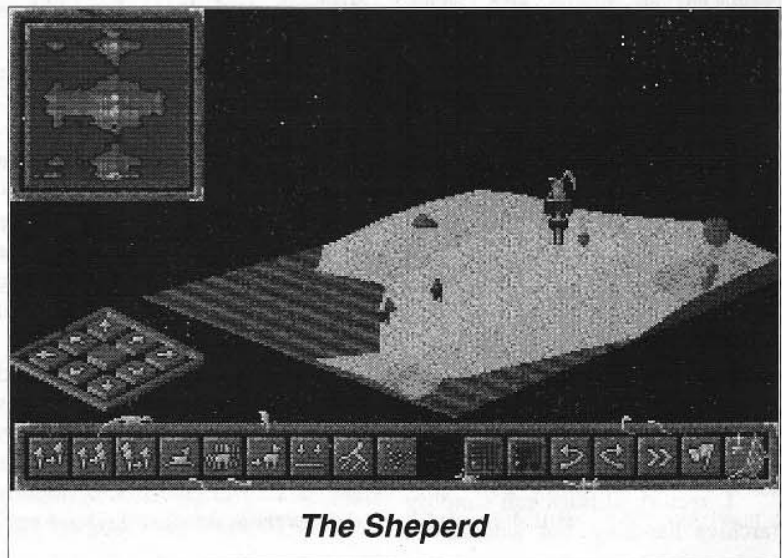
There's a deep-seated human desire to get something for nothing. Whenever a program or hack comes along which purports to do something magical for zero ex-

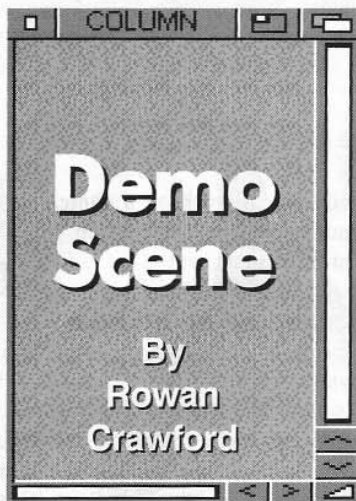
pense, a large number of people try it. These people might be better employed as pool filters, such suckers are they, and they usually get zapped by trojan horse programs that say they'll speed the computer up or make the hard disk bigger or make their car go faster but really do something nasty.

Fortunately, I'm not reporting one of these, but it's a hoax nonetheless. Fastrates, a program that claimed to increase your modem throughput, is a fake. When you run Fastrates (or FaST-R-aTeS, as it is known in q00l eLiTe D00D-zPeEk), modem transfer rates indeed rise, and this seeming evidence of its genuineness sent it blazing around the 0-dAyZ-wArEz b0aRdZ at a remarkable rate (d00d).

Unfortunately, Fastrates doesn't speed your modem up - it slows your clock down. The computer, looking at the slower clock, decides that more data is flowing per second and reports accordingly. I know this for sure because the program's author proudly admitted it, sniggering cheerfully at all the hopeful turkeys who took the bait. If you are among them, don't tell your friends and do ditch Fastrates. It doesn't make anything faster; all it does is eat more than 70k of your RAM.

All the programs listed in this month's column are available on the companion disks, available from Prime Artifax as HotPD 20 for \$9.50 the pair, post paid. See you next month!

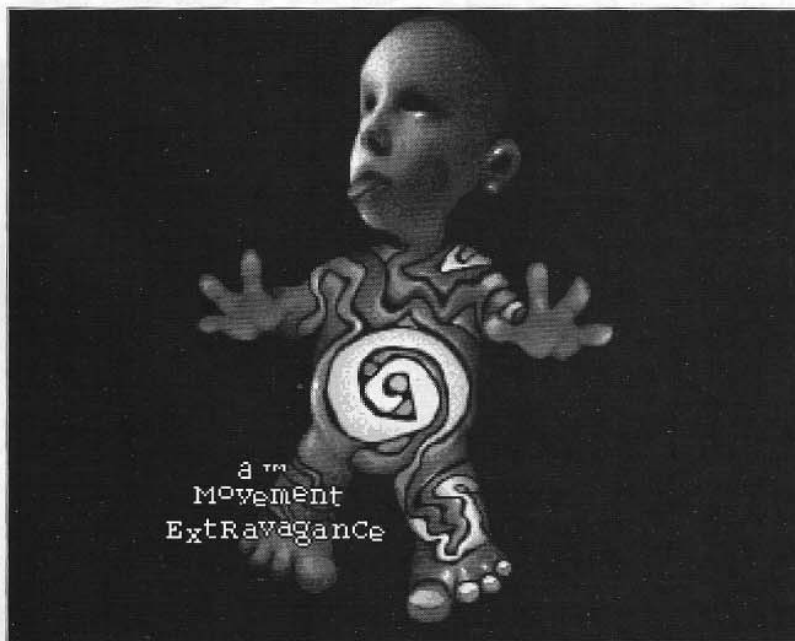




► Welcome to the first installment of demo corner. Every month I'll be discussing the intricacies of Amiga demos and the people who create them. This month's article is basically a primer, hoping to supply enough background information to help those of you unfamiliar with the demo scene understand future discussions.

Why?

Have you ever seen a demo, and wondered what the point was? A piece of music and a few nice pictures, all wrapped up with some routines and a touch of design...



A picture from the movement demo "Cooky".



"Amiga Rules" is a common theme in demos.

but why? All demos can be broken down into the three main components - code, graphics and music - with each part usually done by a different person. Each component on it's own has very little impact, yet the combined effect can often

be quite stunning.

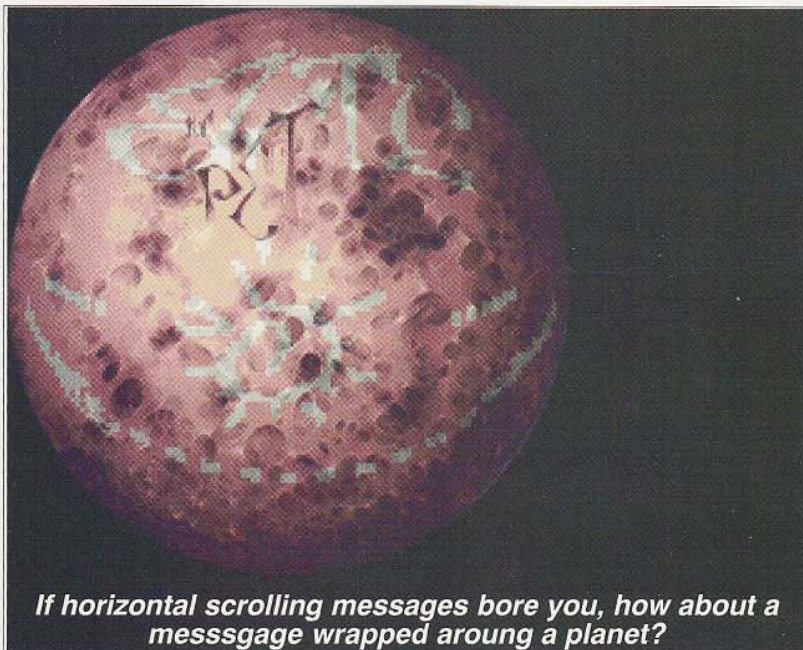
Demos are generally the result of friends, each with a different interest, combining their work into one product with the intention that the whole becomes greater than a sum of parts. It doesn't always come together with this ideal result, but the fun is in trying.

Far and wide

The demo scene, as it is known, covers virtually the entire globe, with the most production coming from European countries such as Finland and Germany. The reason is one of population density and Amiga popularity. Australia has a scene also, albeit not the most active .

But it's there, and if you would like to find out more about it, then see below.

Interaction between demo groups worldwide is quite considerable, and this is achieved by "swappers" - people who swap productions from their own group with swappers in other groups. A simple, but quite effective means of distribution which is most often



carried out via the postal service. It's not unknown for swappers to have in excess of 100 contacts around the world, and so this network is far more efficient than any PD library.

By now, you might begin to realise the scale of the demo scene. It is quite huge.

Competitive spirit can probably account for the ongoing interest in demos. This is particularly evident at special demo parties held in Europe, where big prizes are offered. An A4000 might be typical, but on one occasion a car was up for grabs.

Demos verses games

The question is often asked, "Why not write games instead?" A valid question, for sure, to which there are two answers. Reason numero uno is that the time required to write a demo is much, much less than that required to write a decent game. The longer you spend on a project, the more of a chore it becomes, and so demos are generally a lot more fun to write.

The other point is that writing demos requires a completely different approach to that required to write a game. Games, by nature, are repetitive and restrictive, and so, again, the fun factor comes back into the equation. A completely different frame of mind is

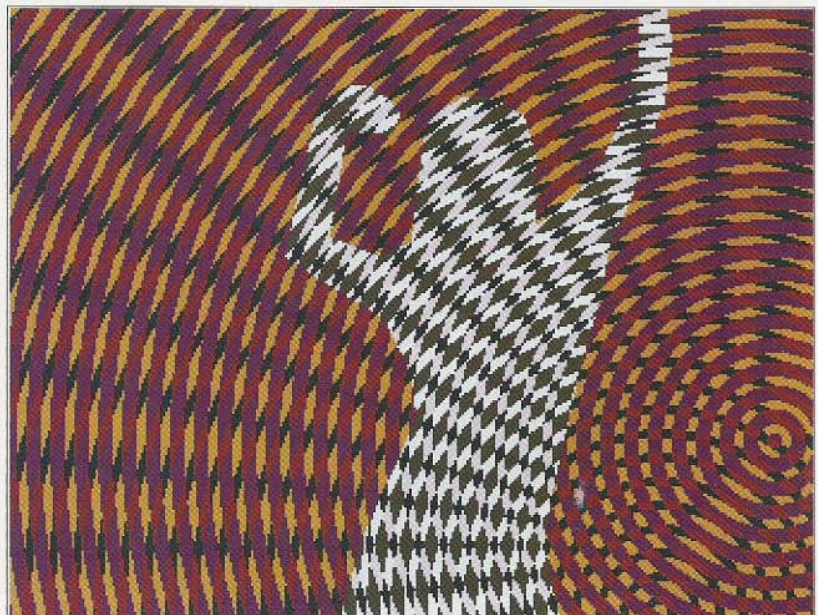
required to work on a game, with much more pressure being placed on the results.

Having said that, there is a reasonable amount of crossover between the two art forms, especially lately. Games like Stardust, Elf Mania, Banshee, and the entire early catalogue from Team17 were created by people who learnt their skills by creating demos. This trend is likely to continue, with the games industry expanding so rapidly and good money becoming available.

Many people make the mistake of relating demos to piracy. The two scenes are very similar in operation, but they do have a distinct difference; one is productive, the other is destructive. Demos also require skill to create, so in effect they are conflicting interests, especially since so many demo coders are now making their way into the game arena.

Repetition repetition

It's often noted that many demos seem to be the same, using the same routines and ideas. Cod-



Probably the most famous demo of them all, "State of the Art"

ing demos is, in its simplest form, a continual learning process, but for innovation to occur one must first learn the basics, and the best form of learning comes from studying other people's routines. So as to not let their learnt efforts go to waste, the routines invariably end up in another demo.

So the key is to look behind the face of a demo and understand its past. Even the most average looking demo took effort to create, and it's the creation you should appreciate. The ever popular Internet is also making intercontinental collaboration a reality. On Usenet, alt.sys.amiga.demos is the place to be and for IRC it's #amigascene. There's even a mailing list devoted to the Australian scene, which can be joined by sending mserv@twister.apana.org.au the message body:

```
subscribe ozscene
help ozscene
quit
```

To post to the list, simply send mail to ozscene@twister.apana.org.au. Everyone is welcome. The demo scene has been developing for more than ten years now, and to understand it fully is probably not possible. Like them or love them, demos will be around for a long time to come.

Next month

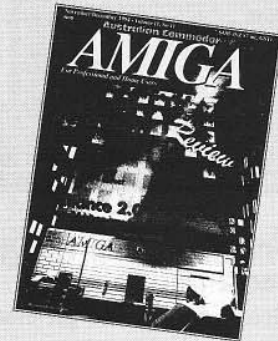
In further months, I will look deeper into each discipline and review some recent demos. There should be a ton of great releases from this year's "The Party" (held in Denmark between the 27th and 30th of December).

Rowan (Sumaleth/Pearl) can be contacted via ginseng@yoyo.cc.monash.edu.au.

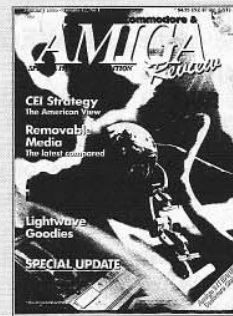
□



OCT '94



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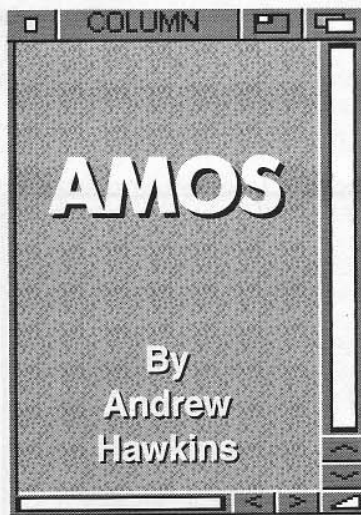
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Making the most of AMOS 3d Part 2

>Welcome back. Let's get cracking. So far we have a tank that moves around, but is fairly easy to shoot. It's not much fun after a short period of time. So this month we'll fix the problem for good.

Playability is the name of the game. What playability represents in a game is the level of restriction imposed on a player. These restrictions are the rules of the game, and they're what I'll deal with in this tutorial.

Right now we need to discuss OBJECT ORIENTATION. Why? Because it takes time to code some of the rules for the game, it makes sense to allow all the objects to use them. In this way we write a set of rules, and treat every object as a kind of empty script waiting for instructions. The object is defined

by what it does or how it performs.

Take, for example, a cup. It is capable of holding things and it can be held. It has mass so it can be thrown or caught and affects movement of other objects it comes into contact with. In the case of the enemy tank, it can move, it can be moved by other objects, it can fire and it can be fired upon.

In this tutorial we will include a list of objects to fill the game domain, each with its own rules to obey. Look at figure 1.0 for an example. These objects must first be created in the objectmodeller and saved to the object drawer on your game disk.

HAVE YOU MADE A BACK-UP?

I don't want to lecture, but stop reading right now and make a copy of your entire disk and put it away. Every night when you finish coding, copy your work disk onto this backup and record the time and date.

I've lost so much data to system crashes and read/write errors that I religiously backup all work disks. Enough of the lecture.

These objects are easy to create - the first two are 3d primitives! The house is made of a pyramid

and a cube stuck together. The door and room detail are created by using the surface detail tool. The lake is made of two 12 sided flat planes stuck end to end and point-edited to make round edges. The tree is an eight sided flat plane.

The hill is two pyramids stretched and stuck together. The scores are made by using a flat five sided plane and drawing the numbers on it. The POW is two pyramids stuck end on end with a five sided flat object stuck perpendicular to the flat end of a pyramid. The gun is a pyramid for a base using transparent surface detail to draw the legs.

To draw in transparent select the colour of the surface you are editing to draw with. The top of the gun is an eight-sided flat plane with surface detail.

The objects must be saved as follows, including under scoring.

```
1 pyramid 2 cube 3 house 4
tree 5 hill 6 swamp 7 score _ 250 8
score _ 500 9 score _ 1000 10
power _ up 11 gun _ mount
```

Just experiment and try your best to mimic these objects. As long as they look something like the diagrams you and whoever plays the game will recognise them.

RULES

Class	MOVE	ABLE	FIRE	TARGET	MASS	DAMAGE	INT	ROUND	PUSH
1 Tank	Yes	Yes	Yes	Yes	500	40	3	No	No
2 Pyramid	No	Yes	No	Yes	150	100	0	No	Yes
3 Cube	No	Yes	No	Yes	250	200	0	No	Yes
4 House	No	Yes	No	Yes	1000	300	0	No	No
5 Tree	No	Yes	No	Yes	100	50	0	Yes	No
6 Hill No	Yes	No	Yes	5000	-1	0	No	No	
7 Lake	No	-1	No	No	2000	-1	0	No	No
8 Score250	No	No	No	No	250	-1	0	Yes	No
9 Score500	No	No	No	No	500	-1	0	Yes	No
10 Score1000	No	No	No	No	1000	-1	0	Yes	No
11 POW	No	No	No	No	-1	-1	0	No	No
12 Gun	No	Yes	Yes	Yes	350	100	3	Yes	No

Table 1

To code the 'rules' of each object we must make a list of each object's class. There are several classes.

(See Table 1)

As you can see, there are only 9 rules but the variation of definitions is considerable.

1. MOVE means the object can access move routines.

2. ABLE means its trajectory and velocity can be affected by other objects; if it's -1 it slows the affecting object.

3. FIRE means the object can access the fire routines.

4. TARGET means it can be shot.

5. MASS refers to its weight, to take into consideration when it comes into contact with other objects, except for objects 8-10 where it's the SCORE and object 11 where it will look for a list of possible pick-ups it could be.

6. DAMAGE refers to how many hits it can take, except for objects 6-11 which take effect when the player touches them.

7. INT refers to the object's intelligence.

8. ROUND refers to whether the object looks the same from all sides.

9. PUSH refers to whether the object can be pushed by other objects.

Because class 1 (the tank) is movable, it needs some extra variables which are referred to as class extensions.

OBJ _ SPD(x) is the object's maximum forward speed.

SPD(x) is the object's current forward speed.

OBJ _ TRN(x) is the object's turn speed.

FIRE _ OK(x) is the object's ability to see the player.

Variables you're already using which need modification are:

OX(x) - the object's x co-

```
Dim CLASS(12,9), OBJ_SPD(30), SPD(30), OBJ_TRN(30), OX(30), OZ(30)
Dim OB(30), FIRE_OK(30), OBJ_CLASS(30), OBJ_DAM(30)
Dim BULL(10), SHOT(10)
Global CLASS(), OBJ_SPD(), SPD(), OBJ_TRN(), OX(), OZ()
Global OB(), FIRE_OK(), OBJ_CLASS(), OBJ_DAM()
Global BULL(), SHOT(), EN_GUN_DAM
Global _TANKS, BUILDINGS, LAKES, TREES, OBSTACLES, HILLS, GUNS
Global YEILD, RANGE, TERRAIN_CHK, XM, ZM, BM
Global MEM1, MEM2, MEM3, MEM4, GUN_DAM, WVE
Global SPEED, DAM, GAME, OLD_SCORE, OLD_DAM, SCORE
```

Listing 1

ordinate.

OZ(x) - the object's z co-ord.

_ KILL _ TANK - the status of an exploding object.

Notice the (x) after the variable. This means the object is an element of an array. This allows more than one object to use the same variable names, and therefore makes all objects compatible with object orientation routines.

Firstly, insert the following lines: (See Listing 1)

The arrays allow all procedures to access these values, and allows 30 objects to be accessible at one time. There are variables in there for score, the current chance for obstacles, and some MEM variables for general use across procedures.

Next you need to define the classes held within CLASS(x,y). There are 30 possible classes and nine possible rules, in accordance with the RULE chart.

Type in the following code and then, before the MAIN loop, type in the procedure call INITIALISE. It's a bit long, but you've got a whole month to work on this tutorial.

(See Listing 2)

Once you have completed the procedure, blockcopy these lines into the start of the INITIALISE procedure, just after the Shared OBJ\$ declaration.

Blockcopy these lines:

```
Screen Open 0,320,256,16,Lowres
Double Buffer
Autoback 0
Td Screen Height 200
Td Dir "df1:objects"
Td Load "tank"
Td Load "bullet"

Deletethisline:

Td Object 1,"tank",0,0,5000,0,0,0

Block copy theselines:

For P=1 To 10
GND(P,0)=5000-Rnd(10000)
GND(P,1)=-200
GND(P,2)=1000+Rnd(10000)
Next P
```

Listing 3

(See Listing 3)

Blockcopy can be set by positioning the cursor on the first line and pressing CTRL B (begin) then move the cursor to the last line and press CTRL E (end).

Now move the cursor down to the line below Procedure INITIALISE, press F10 (line insert) then press CTRL F3 (block move), hey presto! This tidies up the code somewhat.

INITIALISE works by copying object data into CLASS(x,y) based on the requirements for the wave. You could create an environment editor to make maps for later levels, but what this procedure does is works out a random set of rules that simulate an increasing level of

Listing 2

```

Procedure INITIALISE
If WVE=-1
  Shared OBJ$
  Td Load "tree"
  Td Load "house"
  Td Load "pyramid"
  Td Load "cube"
  Td Load "hill"
  Td Load "swamp"
  Td Load "gun_mount"
  Td Load "score_250"
  Td Load "score_500"
  Td Load "score_1000"
  Td Load "power_up"
  WVE=0
End If
DAM=20 : GUN_DAM=15 : EN_GUN_DAM=3+(WVE/4)
If EN_GUN_DAM>6
  EN_GUN_DAM=6
End If
Cls 0,130,201 To 190,256 : Ink 1 : Circle 160,228,17
Draw 158,226 To 150,220 : Draw 162,226 To 170,220
_ZOOM=500
Gr Writing 0 : Text 130,253,"X"+Str$_ZOOM/500
Screen Copy Logic(0),130,201,190,256 To Physic(0),130,201
Colour 0,$5 : Colour 1,$620 : Colour 2,$321 : Colour 3,$20
Colour 8,$447 : Colour 9,$550 : Colour 10,$228 : Colour 11,$660
Colour 12,$40 : Colour 14,$555
' read in data
Restore
For CLASS=1 To 12
  For RULE=1 To 9
    Read XX : CLASS(CLASS,RULE)=XX
    If RULE=7
      _INT=(WVE/3) : Add CLASS(CLASS,RULE),_INT
      If CLASS(CLASS,RULE)>10
        CLASS(CLASS,RULE)=10
      End If
    End If
  Next RULE
Next CLASS
' rem initialise wave
Inc WVE : _TANKS=1+(WVE/5) : YIELD=3+(WVE/3)
If _TANKS>3
  _TANKS=3
End If
If YIELD>10
  YIELD=10
End If
BUILDINGS=1+(WVE/3)
If BUILDINGS>3
  BUILDINGS=3
End If
LAKES=0+(WVE/3)
If LAKES>6
  LAKES=6
End If
TREES=3+(WVE/3)
If TREES>6
  TREES=6
End If
OBSTACLES=4+(WVE/3)
If OBSTACLES>6
  OBSTACLES=6
End If
GUNS=0+(WVE/3)
If GUNS>4
  GUNS=4
End If
HILLS=0+(WVE/3)
If HILLS>3
  HILLS=3
End If
If _TANKS>0
  For P=1 To _TANKS
    Td Object P,"tank",0,0,500,0,0,0
    OBJ_CLASS(P)=1
    If WVE<11
      TRN=WVE
    Else
      TRN=10
    End If
    OBJ_DAM(P)=CLASS(OBJ_CLASS(P),6)
    OBJ_TRN(P)=10+TRN/2
    OBJ_SPD(P)=100+(TRN)
    SPD(P)=0
  Next P
End If
For P=10 To 14
  BM=Rnd(360)*182
  GENERATE_TERRAIN[P]
Next P
'
Data 1,1,1,1,800,40,3,0,1
Data 0,1,0,1,400,30,0,0,1
Data 0,1,0,1,400,30,0,0,1
Data 0,1,0,1,600,300,0,0,0
Data 0,1,0,1,300,50,0,1,0
Data 0,1,0,0,2000,-1,0,0,0
Data 0,-1,0,0,1000,-1,0,0,0
Data 0,0,0,0,250,-1,0,1,0
Data 0,0,0,0,500,-1,0,1,0
Data 0,0,0,0,1000,-1,0,1,0
Data 0,0,0,0,-1,-1,0,0,0
Data 0,1,1,1,400,100,3,1,0
End Proc

```

difficult environments.

There is a formula to increase the tank(s) intelligence and performance as you increase into higher waves.

The terrain works by having a "seed" for particular areas on the map. TANKS is set to 1, and YIELD is set to 3, meaning that there can only be one tank at a time but there are three to shoot to complete the wave.

BUILDINGS is set to 1 in the first wave, which means when a new terrain object is to be created there is a 1 in 10 chance of it being a building. TREES is set to 3 to fill the area with trees occasionally. LAKES is set 0 so there are no lakes in the first wave.

OBSTACLES is set to 6 so there is a high chance of pyramids and cubes appearing. GUNS is set to 0 so there are no gun pods in the first wave. Don't run the program, because you still need a few more procedures.

The next two procedure to be written are TERRAIN_MANAGER and GENERATE_TERRAIN[x], so put a procedure call TERRAIN_MANAGER into the MAIN loop just before Td Redraw and enter the following code.

(See Listing 4)

What the TERRAIN_CHECKER procedure does is check the range of objects that are currently in the game domain. You'll notice the _TD_RANGE[] is used here, instead of the AMOS Td Range().

This is for speed. _TD_RANGE works out a range test only, whereas the AMOS Td Range works out attitude and bearing as well. You'll find this routine works accurately. Its precision for error is +/- 10-15% which is close enough for an arcade game.

_TD_RANGE is sent three parameters, the first being object1,

```

Procedure TERRAIN_MANAGER
Add TERRAIN_CHK,1,0 To 15
If TERRAIN_CHK<>0
  Pop Proc
End If
OBJ_INST=0
For P=10 To 14
  If OBJ_CLASS(P)<>0
    RANGE=999999 : _TD_RANGE[0,P,0]
    If RANGE>15000
      OBJ_CLASS(P)=0 : Td Kill P
    End If
  End If
  If OBJ_CLASS(P)=0 and OBJ_INST<3
    GENERATE_TERRAIN[P]
  End If
Next P
End Proc
Procedure GENERATE_TERRAIN[OBJ]
If Rnd(10)<OBSTACLES
  YM=0 : PR=0
  If Rnd(1)=0
    OBJ$="pyramid" : OBJ_CLASS(OBJ)=2 : Goto GEN_OBJ
  Else
    OBJ$="cube" : OBJ_CLASS(OBJ)=3 : Goto GEN_OBJ
  End If
End If
If Rnd(10)<GUNS
  YM=-50 : PR=0 : OBJ_CLASS(OBJ)=12 : OBJ$="gun_mount"
  Goto GEN_OBJ
End If
If Rnd(10)<TREES
  YM=50 : PR=0 : OBJ_CLASS(OBJ)=5 : OBJ$="tree"
  Goto GEN_OBJ
End If
If Rnd(10)<BUILDINGS
  YM=-50 : PR=0 : OBJ_CLASS(OBJ)=4 : OBJ$="house"
  Goto GEN_OBJ
End If
If Rnd(10)<HILLS
  YM=-50 : PR=0 : OBJ_CLASS(OBJ)=6 : OBJ$="hill"
  Goto GEN_OBJ
End If
If Rnd(10)<LAKES
  YM=-150 : PR=-1 : OBJ_CLASS(OBJ)=7 : OBJ$="swamp"
  Goto GEN_OBJ
End If
Goto EX_CHECK
GEN_OBJ:
Inc OBJ_INST :
OBJ_DAM(OBJ)=CLASS(OBJ_CLASS(OBJ),6)
Td Object OBJ,OBJ$,XM,YM,ZM,0,BM,0
Td Priority OBJ,PR
Td Angle Rel OBJ,0,Rnd(4000)-Rnd(8000),0
Td Forward OBJ,10000
If CLASS(OBJ_CLASS(P),8)=1
  Td Angle OBJ,0,0,0
Else
  Td Angle Rel OBJ,0,Rnd(360)*182,0
End If
OX(OBJ)=Td Position X(OBJ)
OZ(OBJ)=Td Position Z(OBJ)
OB(OBJ)=Td Attitude B(OBJ)
EX_CHECK:
End Proc
Procedure _TD_RANGE[OBJ1,OBJ2,MDE]
If MDE=0

```

```

CNST1=XM
CNST2=ZM
CNST3=OX(OBJ2)
CNST4=OZ(OBJ2)
End If
If MDE=1
  CNST1=Td Position X(OBJ1)
  CNST2=Td Position Z(OBJ1)
  CNST3=OX(OBJ2)
  CNST4=OZ(OBJ2)
End If
If MDE=2
  CNST1=OX(OBJ1)
  CNST2=OZ(OBJ1)
  CNST3=OX(OBJ2)
  CNST4=OZ(OBJ2)
End If
If MDE=3
  CNST1=Td Position X(OBJ1)
  CNST2=Td Position Z(OBJ1)
  CNST3=XM
  CNST4=ZM
End If
XR=Abs(CNST1-CNST3)
ZR=Abs(CNST2-CNST4)
RANGE=XR+ZR
End Proc

```

FOLD ALL your procedures. Your code should look like this:

```

Dim declarations
Global declarations
INITIALISE
MAIN:
Repeat
  Td Cls
  MOVE_PLAYER
  FIRING_ROUTINE
  MOVE_TANK
  KOLLISIONS
  TERRAIN_MANAGER
  Td Angle Rel 1,0,1000,0
  Td Redraw
  GROUND
  Screen Swap
  Wait Vbl
Until GAME=1
End
Procedure FIRING_ROUTINE
Procedure KOLLISIONS
Procedure MOVE_TANK
Procedure MOVE_PLAYER
Procedure GROUND
Procedure INITIALISE
Procedure TERRAIN_MANAGER
Procedure GENERATE_TERRAIN[OBJ1]
Procedure _TD_RANGE[OBJ1,OBJ2,MDE]

```

Finally, include the line

```
WVE=-1
```

before the call INITIALISE above the MAIN loop. Now we're starting to see some code developing. Save your code and continue.

usually the player, the second param is object2 usually the obstacles, and the third param is the mode, which determines which part of the `_TD_RANGE[x,y,z]` is used.

Once `TERRAIN_CHECKER` finds an object out of range (15000 VLU's) it kills it off, then checks a counter `OBJ_INST`. This determines how many objects are to be created in one cycle. The limit is set to 3 so that the game hurtles along at great speed.

There can only be 10 terrain objects in the game domain at one time, and these occupy objects 9-18. If `CLASS(x,y)` is zero (x is 9-18) it will create a new object based on the priority of classes to create. `OBSTACLES`, `GUNS`, `TREES`, `BUILDINGS`, `HILLS`, and `LAKES` is the priority order. The y element of the `CLASS(x,y)` array is set to the particular class and from here on in, the program treats the object according to its class.

Now run the program. You will see terrain objects appear, and you can still shoot the tank, but you won't see the `TERRAIN_CHECKER` creating new terrain because you can't move. Before we go all out and give you total freedom, we need to change various parts of the program to accommodate.

Firstly open the `MOVE_PLAYER` procedure and make the following changes.

Remove theselines:

(See Listing 5)

These lines are restrictions on the rotation of the tank, which are no longer needed. Now include the next line directly following the `J=Joy(1)` command.

Add theselines:

(See Listing 6)

Save the program and run it.

```

BP=Td Attitude B(0)
If BP>180*182 and BP<320*182
  BP=320*182
  Td Angle 0,0,BP,0
  Pop Proc
End If
BP=Td Attitude B(0)
If BP<180*182 and BP>40*182
  BP=40*182
  Td Angle 0,0,BP,0
  Pop Proc
End If

```

Listing 5

You now have full movement around the terrain. Move in one direction for a while and you will see new terrain appearing in the distance.

Swing around and try to find the tank. It will still be there amidst the ground dots, but it will be restricted to a small area in the game domain. You may even lose sight of it.

If you don't have the `TURBO` extension loaded, the `F PLOT` command in the `GROUND` procedure won't work. Change it to `PLOT` instead. I've run out of space, so we'll continue the tutorial on playability next month. If at this stage you've experienced problems with the code or you would like the full listing on disk, contact Amiga Review and ask them to pass the message on to me.

Also, if you're having any other problems with AMOS in general I will be happy to offer advice. I'm keen on doing a simple flight simulator with AMOS 3d, but the `ANGLE` system is a bit awkward to work with.

Does anybody out there know any formulas that will work? Drop me a line. Next month we'll get the radar working and include waves, scoring, damage control and more bad guys. Good luck!

□

Listing 6

```

If J=1 or J=9 or J=5 or J=17 or J=15 or J=21
  Add SPEED,40
End If
If J=2 or J=10 or J=6 or J=18 or J=12 or J=22
  Add SPEED,-40
End If
If SPEED<-150
  SPEED=-150
End If
If SPEED>250
  SPEED=250
End If

```

These next lines exist but need modification...

```

If (J>3 and J<8) or (J>19 and J<24)
  Td Angle Rel 0,0,-(1500-(Abs(SPEED*3))),0
End If
If (J>7 and J<11) or (J>23 and J<28)
  Td Angle Rel 0,0,1500-(Abs(SPEED*3)),0
End If

```

These are new lines...

```

If Joy(1)=0 or Joy(1)=16
  If SPEED<0
    Add SPEED,5
  End If
  If SPEED>0
    Add SPEED,-5
  End If
End If
Td Forward 0,SPEED
XM=Td Position X(0)
ZM=Td Position Z(0)
BM=Td Attitude B(0)

```

Finally, open the FIRING_ ROUTINE and change

```

  Td Object 20,"Bullet",0,0,0,0,0,0
to
  Td Object 20,"Bullet",XM,0,ZM,0,0,0

```

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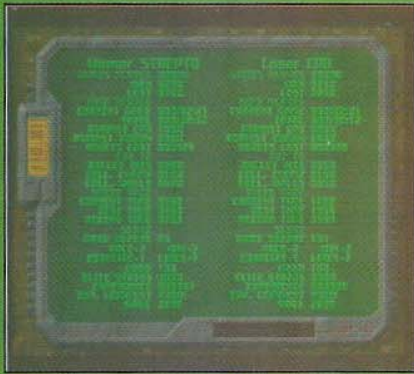
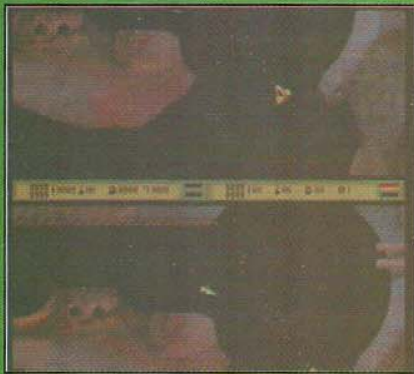
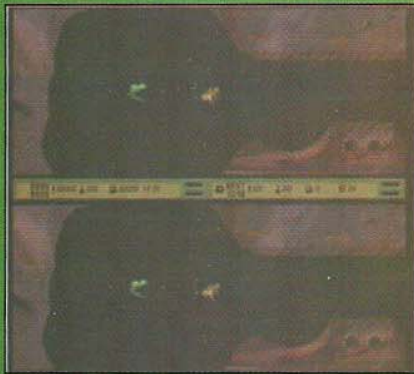
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It's a while since a freely distributable game's graced these pages - many are quite diverting, but it's not often you find one up to commercial standards.

Rocketz, though, is such a game. It belongs to the popular ancient game with modern revamp category, and it revamps any number of little spaceship combat games. The genre is immediately recognisable - two ships which can thrust, turn and shoot, zapping around levels made of very hard unfriendly walls and attempting to blast the tar out of each other.

My personal favourite game in this department is Gravity Force 2 (reviewed in the October 1994 Hot PD column), which has the hallmarks of a Traditional Good PD Game - dodgy graphics, no computer opponents, and a ton of options. Rocketz is different.

The most immediately remarkable thing about Rocketz is the graphics. This is an AGA game, and it shows. The levels are beautifully drawn, but the ships steal the show - shiny metal with lots of animation frames. The only Traditional Game holdovers are the rocket exhaust, explosions and bullets - all single white pixels.

The animation's very fluid and the ships fly realistically. This makes the game rather challenging, particularly on the cramped levels; you need a deft touch to avoid smacking your beautifully drawn spaceship into a beautifully drawn wall. Take enough damage

and your antigravity generator packs up, causing you to plummet. You can survive this, but you've got to be very, very good.

The sound's pretty groovy, too - funky music, nice effects. The whole presentation knocks Gravity Force into a cocked hat - it's very slick, with built in instructions, gorgeous options screens and tons of statistics after every battle.

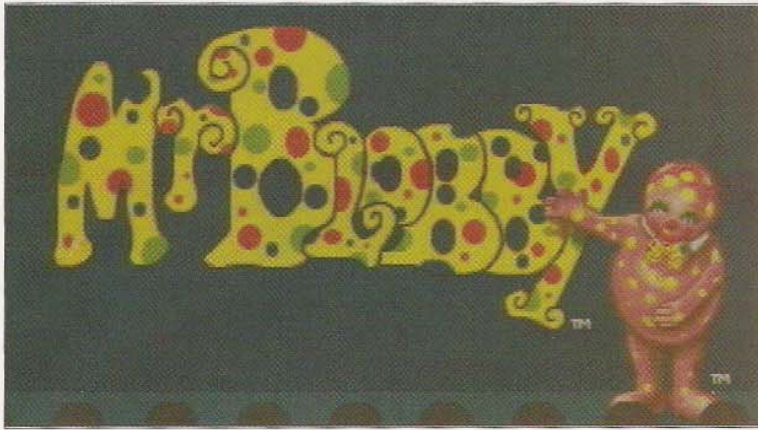
Rocketz' computer opponents are refreshingly human - they kiss walls, fly into your fire and generally do all the things you expect from a real live opponent. You can select the starting configuration of the computer opponents and give them a weedy ship if you like.

You can also pit the computer against itself for some couch potato gaming - and it's possible to place bets, too!

The freely distributable version of Rocketz can be had from any decent PD source - bulletin boards or PD libraries like Prime Artifax (plug plug) for not much money at all. To get the registered version with a lot more levels and more ships, you have to send off \$US15.

Overall, Rocketz isn't as easy to control as Gravity Force 2, nor does it have as many weapons or nearly as many environment adjustments. But if you're looking for a connoisseur's flight experience along with sock-knocking graphics, grab the evaluation version and have a punt!

□



▶ This is one of those games that lurks on the bottom of the "to be reviewed" heap and makes sure you review unpromising titles. You do this because you feel anything would be better than cracking the shrinkwrap on that dreaded bottom-dweller.

Fortunately, Mr Blobby isn't as dreadful as appearances might suggest. Sure, it's based on that odious misshapen pink and yellow organism from the UK show Noel's House Party, but if you disregard the identity of the protagonist you're left with a perfectly agreeable kiddy platform game.

You actually get three Blobbies to play with - Mr, Mrs and Baby. They all have the same abilities, but Baby's considerably smaller and so can avoid enemies better. The aim of the game is to work your way through various grey levels and colour them in, by the space age technique of walking about.

Whatever you touch becomes coloured, and you have to touch the entire perimeter of rectangular "windows" to fill them with colour - fill all the windows and you go to the next level.

Mr Blobby's saved from total tedium by a variety of bonuses, objects and monsters. Assorted food objects lie around on every level, and walking over them automatically picks them up. You can eat objects to gain points or

lob them at bad guys - if you don't have an object to lob you fire a cream pie instead. You can also pick up a water pistol, party blower smart bomb, and a variety of other objects.

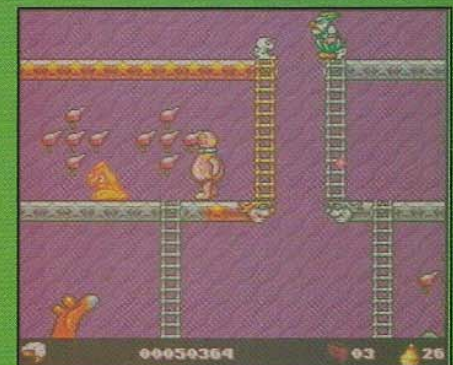
Mr Blobby's control system is smooth and easy to use; you can use the joystick or configure the keyboard whatever way you like. The animation is also slick, the sound effects are appropriate though not particularly remarkable and the music is predictably Romper Room-esque. All of the graphics are nicely drawn, though sparse; James Pond players will feel at home.

You shoot the bad guys, but you'd need a lot of imagination to get any violence into this soft, cornerless, warm, pink, fuzzy experience. Parents on the lookout for ideologically unsound material can rest assured there'll be no lakes of gore to concern them here.

Mr Blobby is definitely not a game for the white-knuckle razor sharp platform maniacs - but if you're after something inoffensive and involving to keep the kids quiet, this could well be it.

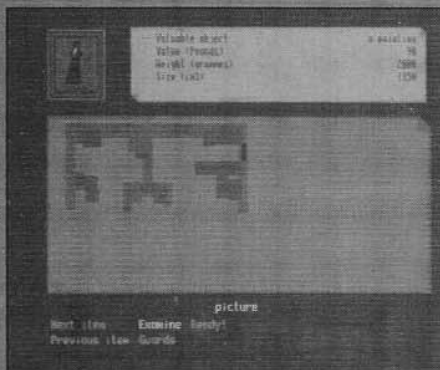
Any minute now I'll be reviewing a Barney the Dinosaur game, I can feel it.

□



Mr Blobby

Distributor: Hotpoint
Phone: (02) 634 6499
RRP: \$39.95



The Clue

Distributor: Hotpoint
Phone: (02) 634 6499
R.R.P.: \$69.95

THE CLUE!

► The year is 1953, and you're a young English burglar whose aim is to make off with the Crown Jewels. Unfortunately, you start off with no money, no burglarising tools, no getaway car and no henchmen.

So to attain your lofty goal, you have to make friends in all the wrong places, scrape some money together somehow and then acquire the tools of your trade. You go on to scout out promising places to burgle, case them from inside and out, lay your plans, choose your accomplices from whatever ne'er-do-wells you've found, and do the deed.

It all sounds rather interesting. The manual's full of information on the London locations you'll visit and rip off, how to deal with other people and the tools and vehicles you'll be using; though this might at first look like an adventure game, it's really strategy. You have to choose the right people to work with, the right places to go, the right things to nick. Cool. Then you actually start playing.

The interface is mouse driven, with keyboard shortcuts, and it's of the pic and menu variety - you view a static image and select options from various menus. These let you walk or taxi around town, enter various locations (dealers in stolen goods, bars, the hotel you live and plot in) and generally access all of the game features.

Unfortunately, everything feels really weird. We've been spoiled

recently by games with friendly interfaces, plausible characters and realistic construction; The Clue brought back memories of the days when strategy games were a challenge to work, before you got near the stuff on the back of the box.

The Clue has all the atmosphere of the planet Pluto, partly because despite its London setting it's all translated from German, apparently by a German. Everything sounds awfully stilted, with occasional prominent typos. Only in this game will you find the need to "wash" stolen money, or burglaries described as "coups". The Clue should sound like a 1950s Minder episode, not a dodgy phrasebook.

There's also a lot of fumbling around, despite the manual; unconnected events abound. Why, for example, when you're told about your first job (a pathetic little shack) do you simultaneously find out about a sumptuous club and an old folk's home? They haven't been mentioned, and you couldn't go to them before, but now you can take a taxi to either and line up a job at either of them instead!

It's possible that there's quite a lot of complexity in this game, but the interface is so crummy that nobody will probably ever know. The (unanimated) graphics are generally good with occasional appalling moments (planning and executing a robbery are particularly ugly), and the sound's just atmospheric music. Steer clear. □



Why do people keep making rear view sprite based race games? No, I know why they do, it's because people keep buying them. So, to rephrase - why do people keep buying them?

There are a few extra knobs on this one, but not enough to make it interesting. As always, you boot your car around an undulating track which has crosswise stripes so you can see you're moving, and there are other cars to weave around.

There are four levels of wet and dry tyres, four manual and four automatic gearboxes, four levels of front, side and rear armour, four engines and four nitro boost options, and you can paint the car any colour you like, and two people can play at once in a split screen.

The controls are the same as for any of the other two grillion games in this category, with space firing the nitrous. The music is OK, but the sound is lousy, with crummy engine sounds, a very wimpy tyre squeal and not much else.

The graphics are antiquated - they would have been fine on an A500 in 1990, but on an A1200 in 1995 they're lumpy, poorly scaled (trees in the distance look like brown pillars) and badly drawn - the big start/finish sign on the first track is just a red rectangle, for

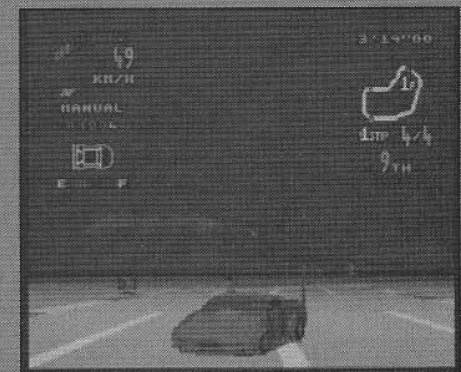
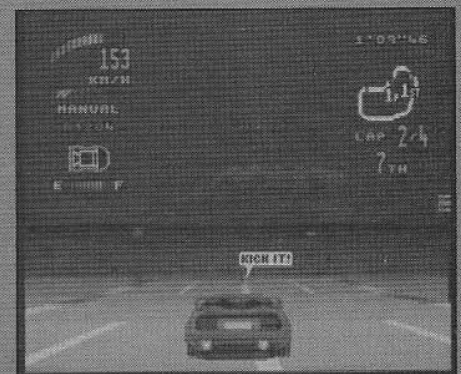
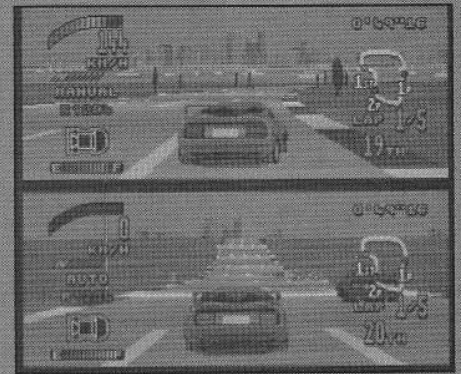
crying out loud! There's no excuse for this in this day and age.

There are many tracks to circle (16 countries with four tracks each), there are lots of opposing cars (and there's an update when you overtake somebody) and your car occasionally sprouts a speech bubble saying something of little profundity. If you prang hard enough to destroy your armour, your car will be damaged and run slower - but you can never actually destroy it.

The driving model is, as always, about as realistic as a particularly unrealistic thing on an unusually unrealistic day. Steer one way or the other and ease off on the throttle to turn a bit harder, and if you're considering doing anything at all that you could expect a real road or race car to do - forget it.

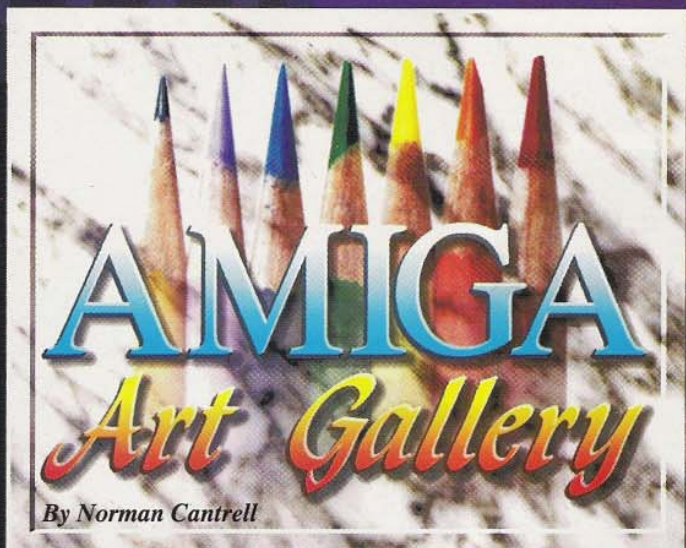
As always, enemy cars are unperturbed by crashing into you and all you do is lose speed, and - get this - going up or down a hill makes no difference to your speed.

Two player racing is good compared with the single player game, but it's still tedious compared with, say, mowing the lawn. If you're a race game nut, this is a race game and you may like it. Otherwise, it'll bore you. □



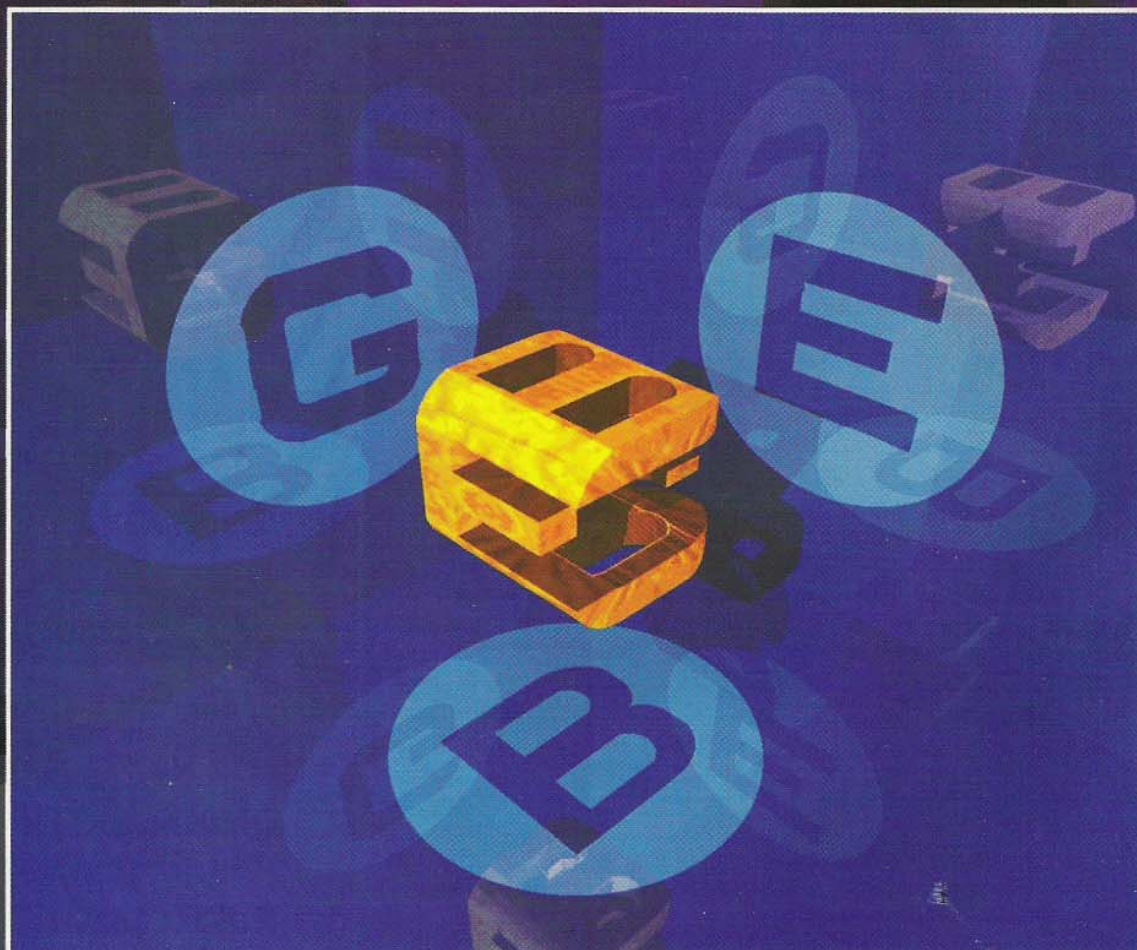
Top Gear 2

Distributor: Hotpoint
Phone: (02) 634 6499
R.R.P.: \$49.95



Welcome to this months Amiga Art Gallery. The boost has come! Keep sending in your pics, show everyone what you do, graphically speaking, on your Amiga. So, if you have some graphic art to contribute, why not shoot us a disk - or modem the file to our new number on (02) 879 4236.

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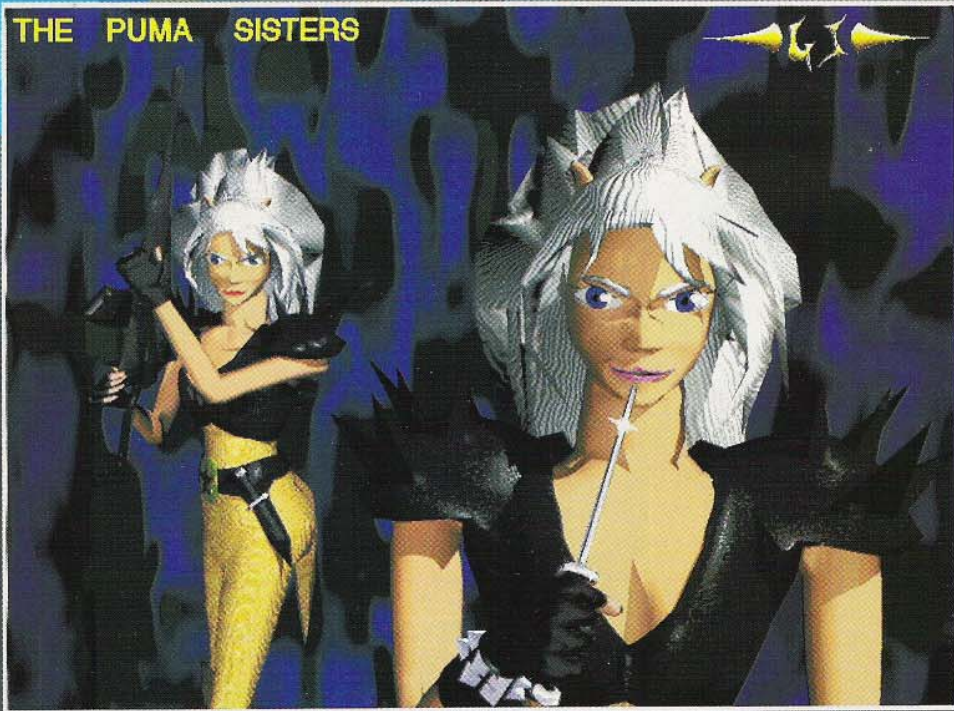


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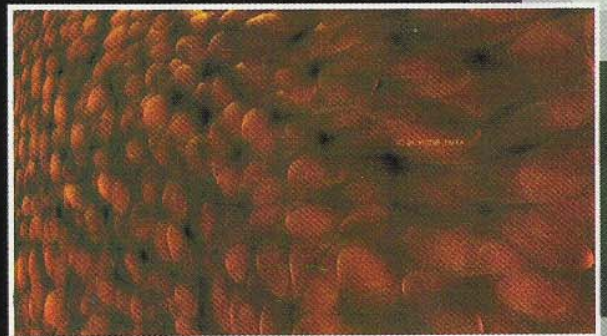
THE PUMA SISTERS



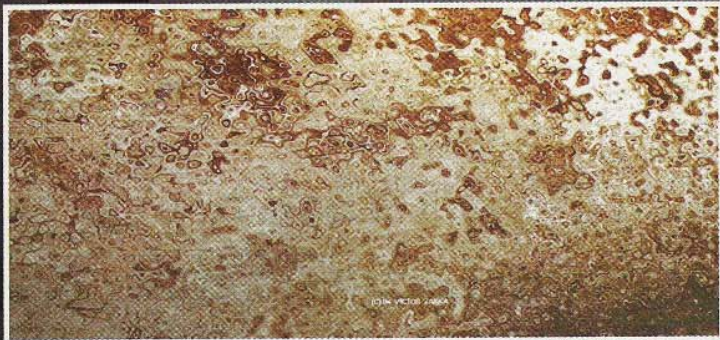
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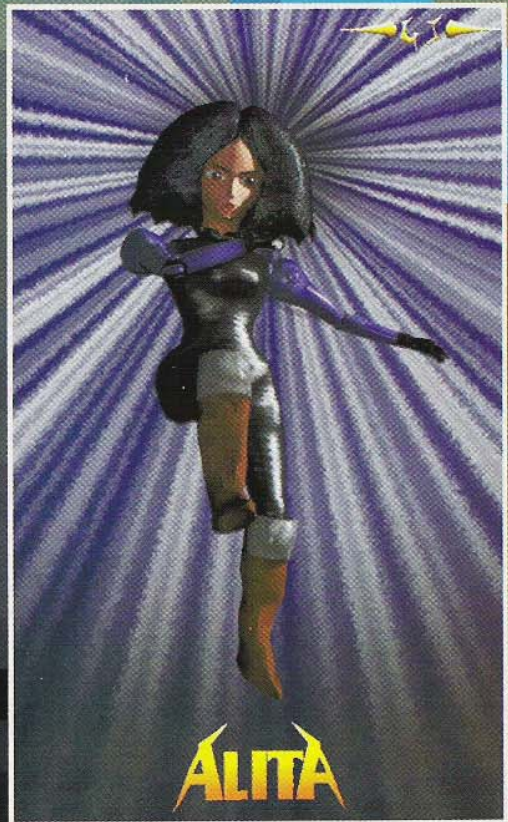
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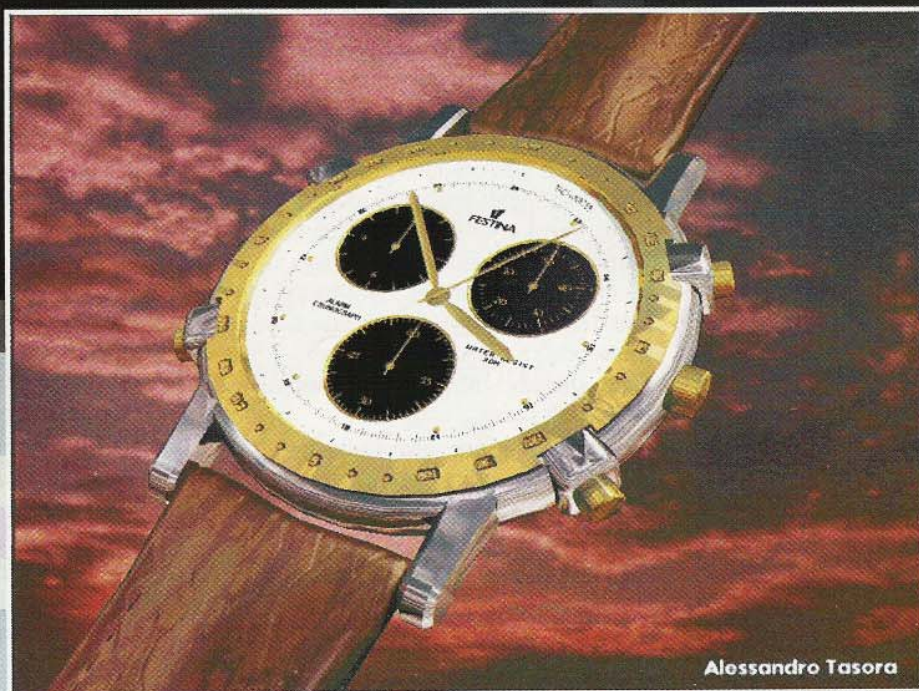
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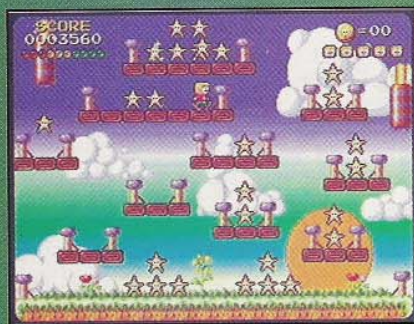
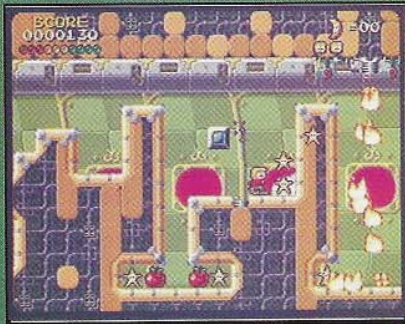
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Well, whaddaya know. A cute platform game for the CD32. Hold the front page.

Sure, the genre's been done to death, but there's always room for a well executed platform game with an assortment of colourful, cheerful looking bad guys.

Marvin's Marvellous Adventure puts you in the shoes of Marvin, a pizza delivery boy who... oh, who cares about the story in these things? What matters is the smoothness of the controls, the ingenuity of the level design and the niftiness of the gimmicks.

Marvin is a small sprite who can run and jump, tumble in the air while jumping a la Sonic, kick monsters with a remarkably effective foot and also lob things he picks up. The control system is good; you can jump and shoot, of course, but you can also drop from ledges and grab the ends of platforms in skin-of-the-teeth jumps. You can also crouch to fit through small gaps or evade overhead monsters, though you can't attack when you're crouched. As is normal, though, Mighty Platform Hero can't swim.

You deal with bad guys by kicking or shooting them, or (astonishingly) jumping on their heads. There are many baddies, but none are particularly inventive in design or behaviour. This is not surprising, since coming up with anything genuinely new in plat-

formers is, by now, like finding a truly fresh and interesting blonde joke.

Marvin's graphics are right on par for the genre; smooth, colourful, well drawn and smoothly animated. The sound is also good; the in-game effects are ordinary but the traditional Pumping CD32 Game Soundtrack makes up for them. There's also a shameless Bill and Ted-esque "Marvellous!" sample at the end of each level.

Marvin has its more challenging moments. It's got, for example, groovy blocks which, when jumped on, start multiplying, with new blocks stepping off from the original and forming an (often convoluted) path. Unfortunately, the older blocks in the line fall away, so you have to keep sprinting and leaping to stay on the remaining ones.

Marvin is considerably designed. There's no time limit. There are also frequent automatic save points in each level. - essentially, you get a save point before every difficult bit, so you don't have to wade through five screens of enemy dodging before you get back to the interesting part. You also get 60 levels in total, so you'll be playing for a while. Is Marvin's Marvellous Adventure original? Not even vaguely. But it's a well crafted genre piece; if you like platformers, give it a go.

Contact: HotPoint (02) 634 6499



RISE OF THE ROBOTS™

► Rise of the Robots is a fighting game in which you, a cyborg with a human brain, try to kick the daylight out of several robot nasties. Nothing very remarkable about that, but all of the graphics are gorgeous 3-D rendered jobbies (done on a PC, I'm afraid).

The game opens with an eye popping intro, cinematic shots of all the combatants, and reasonably fluid animation (it could be better, but it's not bad). The graphics are Rise's strong point.

I'm sorry to say, though, that the graphics are Rise's ONLY strong point. Sure, you can play against the computer or play two player, but there are only seven combatants and you can only play six of them yourself. And each robot only has six to eight moves (remember International Karate Plus, years and years ago? Even THAT had ten moves!). And the computer opponent's pathetic (Hard mode is moderately difficult, Medium lets you beat any enemy by repeating one move and Easy can be played with your eyes shut). And the collision detection's not very realistic - it's easy enough to hit your opponent, but the sprites overlap and bounce off each other like apples.

The controls are mushy (International Karate beats it into a cocked hat for snappiness) And the in-game sound is tedious (Clang! Clang! Clang!). The much-vaunted game music by Brian May is very boring. The hard

disk installer is on a non-bootable disk, and requires you to boot without a startup-sequence and run it from floppy. And said installer is happy to tell you you don't have enough disk space, but won't tell you how much you actually need (the box says you need 40Mb (!), but 14Mb'll do it). And the game itself doesn't have an icon.

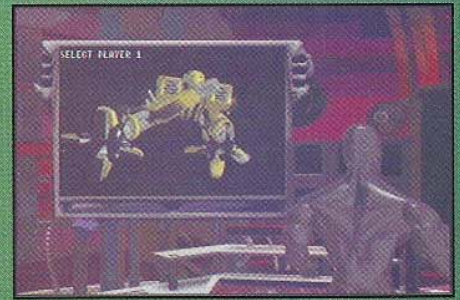
There are also a few niggling things, like the way the robots do that Mortal Kombat-esque deep breathing thing at the beginning of the rounds - what the heck is a robot doing puffing and panting?

When you compare Rise of the Robots to any game console punch-up, it's really quite sad to see how badly it loses. Let's face it, there's only so much you can do with a one button joystick - if the CD32 version used the full game pad it'd be better, but it doesn't.

Other features? You can set a handicap for two player games. You can do Training fights that let you practice as the cyborg against any of the robots, or play as any of the robots against the cyborg (you can't pit robot against robot, even in the two player game!).

Overall, Rise is certainly a nice jawdropping graphics demo, but if you want a fun, playable Amiga punch-up game then try to scare up an old International Karate. A1200/4000 disk version \$79, CD32 version \$69.

Call Amadeus on: (02) 652 2712



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Subscriber Information

Australian Amiga Review changed publishers as of the July '94 edition, but our editorial team has remained much the same. The magazine is now 100% produced using the Amiga, and it is 16 pages bigger.

We've been working on ensuring subscribers receive their copies of the magazine before it goes on sale at newsagents. Unfortunately, we've faced two problems in achieving this. Firstly, Amiga Review didn't change hands

until late June, so the July edition was not printed until late July.

We've caught up by doing this combined November/December issue, so that problem's been overcome. We've also had some problems with our shipping arrangements. These have now changed and we hope the problem has been fixed. For more information call (02) 879 7455.

FREE Reader Classifieds

For Reader Classifieds see pages 23, 24, 26, 27

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Contributors WANTED

Now that Amiga Review is bigger, we're looking for writers. Even if you've written for other Amiga magazines, we promise to give you a chance!

Plain English explanations, in an entertaining style, offering intelligent information on getting more out of the Amiga are preferred. Any wordprocessor format is acceptable, although straight ASCII is preferred. IFF images should include captions in a separate text file (or on the end of the main text file).

You can forward your contributions on disk or modem them to us by calling (02) 879 7455 first and then, once okayed, ringing back on our modem line on (02) 879 4236. Alternately, send them to The Editor, Amiga Review, PO Box 288, Gladesville 2111.

We do pay for contributions, starting from \$50 per 1,000 words up to \$150 for really good stuff. Please don't send your original disk, as we cannot guarantee safe return.

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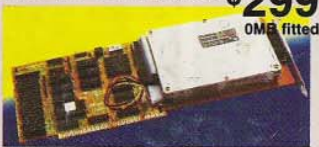
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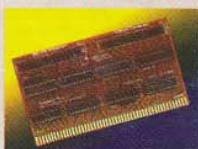
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