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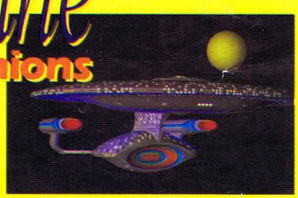
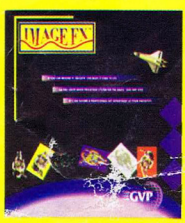
AMIGA DOWN UNDER

ONE WORLD OF SPORT

After a twelve-year arrangement with graphic veterans GCS fell through, subsequent attempts by TVNZ to find a satisfactory alternative proved unsuccessful. In desperation, they turned — with some trepidation — to the Amiga. Previously overlooked, it proved a worthy successor for the task of live; on-site scoring for international golf and athletics telecasts.
With the Amiga's future at TVNZ still uncertain, we venture behind the scenes...

imagine Companions





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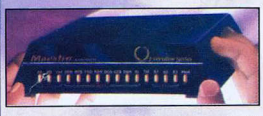

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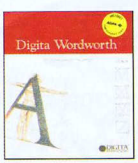

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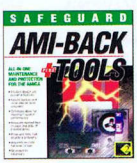

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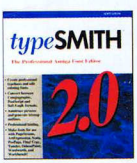

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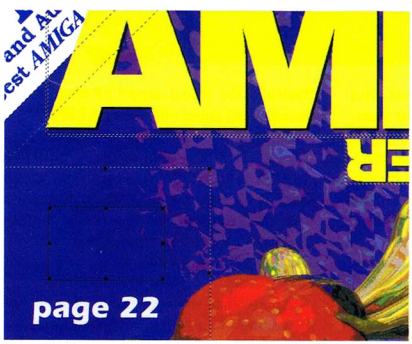

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KEEPING SCORE

Golf fans glued to television sets during major summer tournaments may have been surprised to see the prominent Commodore Amiga logo. Amiga stepped into the on-site scoring breach at short notice, as Mark Coldwell explained to ***Susan Buchanan****...*

VITAL TO THE success of televised sports coverage is the system of on-site scoring to keep viewers up with the play — until recently, dominated in New Zealand by Unisys, Government Computing Services (GCS) and Cardinal Network. When GCS withdrew from golf last year, and Cardinal Network also chose not to participate, two major tournaments in Auckland ran the risk of decreased coverage — until the Amiga solved TVNZ's dilemma.

Official scoring at both the Air New Zealand-Shell Golf Open at The Grange in December, and the NZ Golf Open at Remuera in January, was seen live onscreen in the homes of thousands of viewers, courtesy of Commodore, masterminded by their man responsible for professional applications of the Amiga, 26-year-old Mark Coldwell.

He shrinks from suggestions of a one-man band: "It wouldn't have happened without the rest of the team." Nonetheless, within six days of the initial suggestion that the Amiga could handle the demanding logistics of golf — 46 groups of three each day at The Grange; 44 at Remuera — Mark had in place a pilot system, with a leader board and general layouts.

Said Mark: "TVNZ looked to pursue that. They were impressed to see that something could come together that quickly — and it's probably only the Amiga that would have allowed that. Tying DPaint and Scala together is a very fast way of getting a working model for prototyping anything. I don't think I could have put it together on a DOS box or a Mac system. But at the end of the day, we had to put it to air, so we didn't really have any option. It had to be an Amiga."

And the Amiga definitely proved equal to the task, although Mark is the first to acknowledge problems encountered. Those aside, the Amiga set-up at both The Grange and Remuera, (followed by successful scoring at the Smokefree Track Series in Christchurch, Wellington and Auckland), made its mark and achieved the aim for TVNZ. Which, said Mark, was to provide a system that was portable, flexible, fast, and capable of providing live graphics.

The demands of bringing such a system to air in such a short time meant that food and sleep were put on hold, and Mark's life revolved around the logistics of covering a golf tournament with 144 competitors, on an 18-hole course, live, ball by ball.

"It took an enormous time out of my life. I couldn't sleep for two days afterwards. But it's been worth it, not just for me, but for the whole Amiga community. It's given a credibility statement to the Amiga, which says it's more than just a games machine. It is truly available to the communications industry in New Zealand, be it TVNZ, TV3, Sky, Canterbury TV (CTV), or production houses.

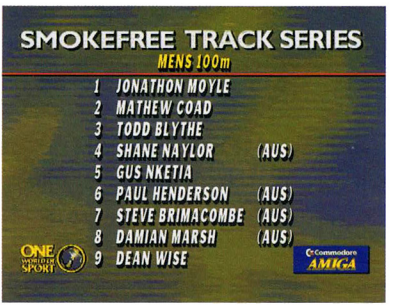
"TVNZ has used Amiga in the past. But this has put the Amiga back in an on-air situation which it had lost in the last two years, since it went off the weather and children's television. It's coming back because of its versatility and speed, not for routine television work, but for one-off requirements. As a result of the golf and the athletics, I feel that basically the fear has gone out of the Amiga. For example, there's still no character generation nor graphics capability in any Sony product. Sony don't have an OS; they don't have a graphics chipset; they don't have programs like DPaint, etc. to make it all happen."

A4000s were used throughout the golf. Said Mark: "Everything was done in super hi-res mode. We didn't use an OpalVision board or any other devices at all — it's really a PAL computer to start with. Most other graphics cards don't put out a video signal, so that pretty well eliminates them. We used pure, native Amiga. Basically the visual aspect of what was produced could come out of any A1200."

Using the multitasking advantages of the Amiga, Mark was able to frame grab source material from TVNZ, scale it down, recolour, touch it up, and change it round to suit whatever was required. In the initial stages, he could prototype the application with ease, since he was not moving away from the video environment.

Approval of the pilot last September led to the testing of an A4000 and Neriki genlock in the TVNZ environment, where broadcast engineers experimented with colour and signal to bring the system to broadcast specification. An invaluable contribution came from Simon Armstrong, who wrote the Sort

Mark Coldwell in action: "Basically the visual aspect of what was produced could come out of an A1200."



Engine in Blitz Basic — a program to sort the overwhelming amount of information coming in from the golf course during the course of the tournament.

Pointed out Mark: "Every time a competitor played, their status changed: the key thing was that when the camera cut to a golfer, the computer had to update the information with a graphic saying he's playing his second shot, or he's putting for par. It was quite definitive in terms of who he was and what position he was in the match; whether he was tournament leader or trailing the leader by two shots."

All groups covered by TVNZ were accompanied by an observer with a radio, who regularly called the outside broadcast (OB) media truck, where Mark's assistants were feeding the facts into their computers. Stationed in the adjacent OB truck, Mark was responsible for updating onscreen the wealth of statistics: his A4000, for example, would read the other computers on the network to assess the input, then sort the leader board accordingly.

"Five A4000s worked flat out, full-time," he said. "There really was a tremendous amount of information going round inside those systems."

Official scoring for groups not covered by TVNZ radios took place in the media tent, where scores were entered on a large whiteboard. Staff there collected and checked information at the end of each hole, unlike the live television coverage, which processed statistics ball by ball.

Recalled Mark: "The demands of television are truly like no others. It's not like a typo where you can look at an error and go back and change it. I put a graphic to air and it's wrong, it's gone, and it's on countless screens and VCRs around the country.

A cabling nightmare: long cables blow network cards!

"I think we did pretty well with what we came up with. What came out of the Amiga looked good. A bit soft in places — some of the edges were not as hard and tight as some of the text on other non-computer (dedicated video) systems. But then it's all a case of trade-off. And it's also a case of getting used to the system. Every time we did something, the next time it was better.

"We recovered from a deep hole that we dug on the Saturday at The Grange when a network card blew out, and did a fairly good show on the Sunday. At Remuera, however, it was better still. The leader boards looked better, so did the text, layout was improved, the collection of information was better — it was a really swept-up thing.

"Graphics purists say that the Amiga doesn't cut it — and to be absolutely fair, in some regards it doesn't. It's not as good as a $1 million Infinit system. You get pixels on the Amiga; you don't on the Infinit. You pay for the Infinit, you get fabulous results, and in many ways, it walks all over the Amiga. But what it doesn't do, is broadcast live; it doesn't allow for the computing end of things i.e., it can't say which of these three players won, and sort accordingly. That has to be all typed in by an operator. Australia's Channel 7 took an Infinit to the Barcelona Olympics and didn't get it going until after the Games had finished.

"There are certainly characteristics on the Amiga that we need to work on, but we acknowledge that, and it doesn't affect the

Continued on page 48

Okay, Okay, So It's A Digital Time Base Corrector, But can it...?

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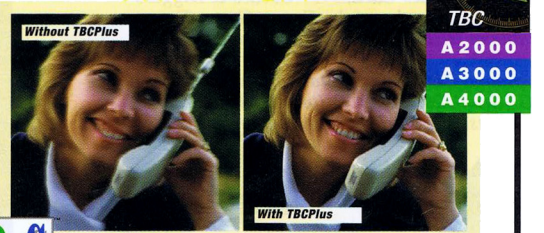

TBC
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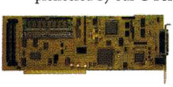
A3000
A4000



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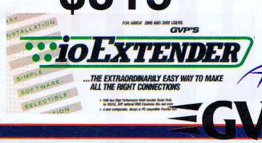

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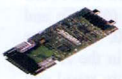

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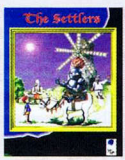

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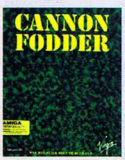

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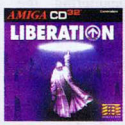

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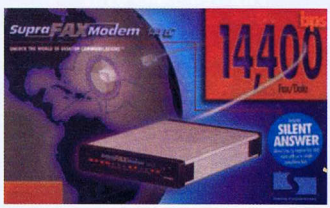

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APRIL 1994

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SHONA McMILLAN

Editor
GRAEME CHEESMAN

Production Supervisor
MURRAY O'NEILL

Design Editor
MATTHEW BUCHANAN

Contributing Editor
SUSAN BUCHANAN

Layout and Graphics
PETER "Crash" MORRISON

Production Assistant
KATE LINDEGREEN

Staff Writer
DUDLEY STOREY III

PD Disk
CLAYTON HYDES

CONTRIBUTING WRITERS
Ray Abram, Grant Berridge, Matthew Buchanan, Susan Buchanan, Graeme Cheesman, Elizabeth Corish, Jason Gibson, Michael Granat, Matthew Grove, Norbert Haley, Zane Hemingway, Aaron Koolen, Peter Moosberger, Peter Morrison, Grant Preston, Russell Robson, Thomas Scovell, Anthony Smith, Rowan Smith, Dudley Storey III, Jarno van der Linden

ADVERTISERS INDEX .. page 65

AMIGA DOWN UNDER (NZ)
PO Box 101411
North Shore Mail Centre
Auckland 1330
New Zealand
PH +64-9 444 3893
FAX +64-9 443 6132
BBS +64-9 634 6716

AMIGA DOWN UNDER (AUS)
PO Box 1197
Darlinghurst
NSW 2010
Australia
PH +61-2 360 9736
FAX +61-2 360 7654
BBS +61-2 970 6444

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FROM WHERE I SIT

IT LOOKS AS if I'll have to be more precise in my comments on the Amiga, judging by the response I had to my comment about the A4000 being flawed. I was referring to the speed of the memory in the A4000/040, but, without saying more, I'll let you make up your own mind. The chart below is the MemTest from AIBB 6.5. Compared are an A3000 and A4000/030 (You); an A1200 with MicroBotics RAM card; an A3000 with PP&S 040; an A500 with GVP A530 (68030); and lastly, a trusty old A4000/040. Judge for yourself. This is a design flaw in the A4000 — not a fault. The lack of memory speed will only reduce productivity. In no way, as far as we are aware, does it affect any hardware or software compatibility.

More bad news! What's happening to Commodore Australia, you all cry. Good question, but unfortunately, the answer is vague. No official comments are yet available. Unofficial sources tell us, however, that CBM Australia owes vast amounts, and accountant Max Donnelly has been appointed by the bank to investigate. The money is nowhere to be seen, and CBM Australia is for sale — for a couple of "mill". That's cheap, considering the size of the company and its turnover, but, of course, you also have to pay off the debts. Still, it might be a good buy, so if you're looking to upgrade your Amiga, here's your chance to own the company and get one cheaply! Of course, this is all unofficial and will probably be out of date by the time this issue hits the news stands.

"Commodore NZ get a big pat on the back from ADU."

In this issue we've profiled the people behind the TV One World of Sport use of Amigas in recent live coverage of golf and athletics. I consider this to be a milestone in the future success of the Amiga. Undoubtedly the word will spread and more companies, and television stations, will adopt the Amiga. And it won't just be in NZ either. Commodore NZ get a big pat on the back from ADU. Keep up the good work!

Watch out for more on Media-Flex which is also breaking into the very high end of the broadcasting industry. See page 21 for a brief summary. Look for an in-depth profile of the system and the man behind its success next issue.

As promised, we've also reviewed Fargo's latest wonder-beast, the Primera. Turn to page 66 for a look at this amazing little printer — if this isn't enough to convince you, your local dealer will be able to give you a complete demonstration of the future of colour printers.

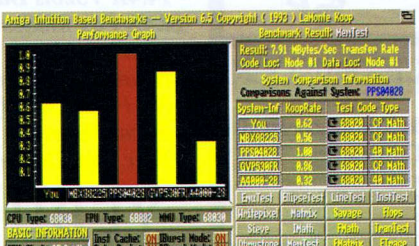
I've received several letters asking about Blitz Basic 2 tutorials, which have been temporarily on hold. It is a matter of pinning down Simon Armstrong, (co-author of Blitz 2), long enough for him to put together more tutes for you. He's been globetrotting recently, due to the enormous success in Europe of Blitz 2 and its spin-off, SkidMarks. So send me ideas on what you'd like to see and I'll pass them on.

Increasing numbers of readers are also asking for more beginners and WB1.3 material. We have taken your requests to heart and will be concentrating more on tutorials for beginners (in this issue), DPaint, and Workbench. We're keen to include a word processor tutorial too, but have not yet found a suitable writer. If word processing is your specialty and you would like to contribute in this way, please let me know.

Unfortunately, not much new software is written for WB1.3. Compatibility is more by accident than design. We intend to run an article on how easy and useful it is to upgrade from WB1.3 to WB2. I would highly recommend this step to anyone wishing both to keep using their Amiga, and to take advantage of the large range of new software and PD available.

Graeme

Editor



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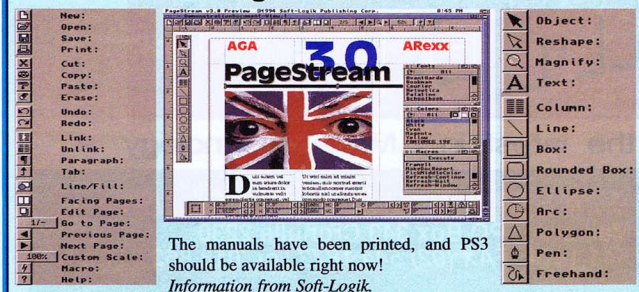
More ADU

We would like to extend a warm welcome to the two latest additions to the ADU team — Kate Lindegreen and Murray O'Neill.

PageStream 3 Arrives



The manuals have been printed, and PS3 should be available right now!

Information from Soft-Logik.

Snippets From The States

- MacroSystemUS have split into two companies: MacroSystemUS now handles all non-USA products, and the new MacroSystem Developments handles all USA-made hardware.
- The new Retina emulation software, which uses fast RAM instead of chip RAM, was due in mid-March.
- Also due in mid-March were the Toccata, Retina Z-III, and Warp Engine accelerators.
- MacroSystem Developments is alpha-testing the JPEG board right now.

Information from MacroSystemUS.

Whirlwind Vortex

The latest series of Golden Gate BridgeBoards from ICP now features a 25 MHz 486SLC2, with 16-bit data bus (32-bit internal) and 1 Kb onboard cache. Speed increases of 400% over a 386 of the same speed, and 2.5 Mb of RAM means that PC emulation need not be such a dreary task!

Software to run the BridgeBoards is now at version 1.31.27, available to current Golden Gate owners free of charge from Vortex. Simply send an Amiga disk, and enough postage to get it back to you, and enjoy speed increases from software improvements alone, of up to 20%.

Information from ICP.

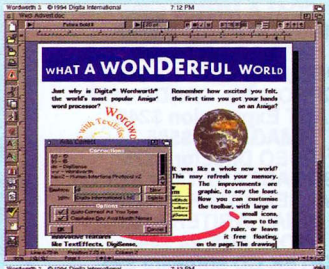
Montage Font Circus

Available now from InnoVision Technology is the Montage PostScript Module, allowing the Montage video-titler to load and use PostScript fonts. Features include the Montage "real time" scaling of PostScript fonts with independent, proportional horizontal and vertical resizing, and that famous 1-nanosecond resolution, regardless of size. Decoration of these fonts is fully supported, with all the usual colour fills, embossing, gradient spreads, translucency, and more, available through the Montage interface.

The PostScript Module also features ten PostScript fonts chosen specially for video applications, and should retail for US$300.

Information from InnoVision Technology.

Wordworth 3 Preview

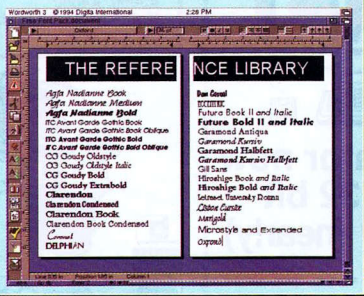


In response to Final Writer comes the update to Wordworth v2AGA. Promoting the so-called "HIP" Human Interface Protocol, one of the most impressive new features is the DigiSense auto-correction with typographical substitution — type "DI", and the program can automatically substitute "Digita International" (or, more commonly, type "teh", and the program will swap the letters to give "the".)

File support is built in, allowing files from Mac, MS-DOS, and Windows to be imported and exported, and there is a set of replacement printer drivers for maximum performance from dot matrix, Deskjet, Laserjet, and bubblejet printers.

Also available is the Reference Library of 50 Agfa Compugraphic fonts, sold separately for £70, or free with Wordworth 3. Suggested retail: £150 on its own, £50 as an upgrade from Wordworth 2, or £60 as an upgrade to any other word-processor.

Information from Digita International.



Electrifying Europeans

The European Computer Electronics Show will be held at the Business Design Centre, Islington, from April 10-12. This international trade fair showcases some of the leading-edge technology from designers and developers throughout the world.

Information from Commodore (UK).

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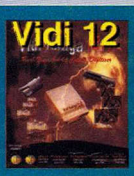

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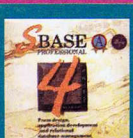

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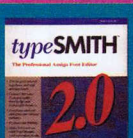

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Created using Amigas

Pegger — Pixel-Crusher

From Heifner Communications comes the revolutionary Pegger — an automatic image-compression program for the Amiga. Pegger is a fully-integrated JPEG compression utility that runs completely in software, and provides fast, efficient JPEG compression totally in the background.

Programs such as DPaint, or the Video Toaster, which do not support JPEG directly can now benefit from the seamless "snoop" feature, which automates the JPEG processing at the loading/saving stage, and executes in just seconds.

Pegger supports a full ARexx interface, multiple image format support, incredible RAM efficiency, and configurable priority levels for loading, saving, and file-selection.

Available now to DKB customers for US$60 (or everyone else for US$100), Pegger makes the rather large cost of a huge hard drive unnecessary!

Information from Heifner Communications.

Alice In Printerland

From the programmer behind DirectoryOpus comes the Amiga HP Explorer. Similar to the MS-DOS program of the same name (well, "HPEXPLOR.EXE", but a PC-weenie can't actually tell the difference...) the program gives the user complete control of the default settings of the Hewlett Packard 4L laser printer.

Running as an Amiga Commodity under Kickstart 2.0+, the Amiga HP Explorer is an all-Australian product, retailing for approximately A$39 from GSoft Australia.

Information from GSoft Pty Ltd.

Picasso II-and-a-bit

The latest update to the Picasso II software corrects the disappearing mouse problem noted in our review (ADU 7), and contains a monitor file editor. With this, users may now customise the monitor file scan frequencies and resolutions, to suit their particular monitor. A bypass also exists for Picasso-aware programs to bring up a Picasso-specific resolution requester, without having to use the Amiga-to-Picasso promotion program, and without using Preferences-standard screen requesters at all.

Information from Ruralcom Electronics Ltd.

EGS-Paint Improved

GVP have released a free upgrade to EGS-Paint, now known as EGS-SpectraPaint V1.2. The package is available electronically from the GVP Bulletin Board (+1-610-337-5815, 24 hours, settings: 8,N,1) as a patch program that modifies the original EGS-Paint distributed with the EGS-28/24 Spectrum.

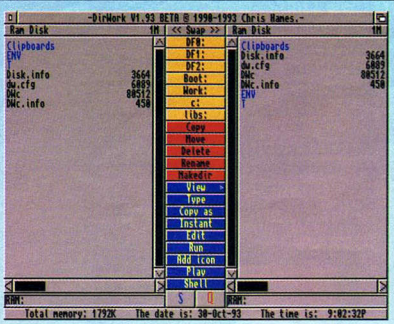
SpectraPaint incorporates more features, including new drawmodes, extra image, brush, and stencil functions, an enhanced IFF module, and a JPEG module.

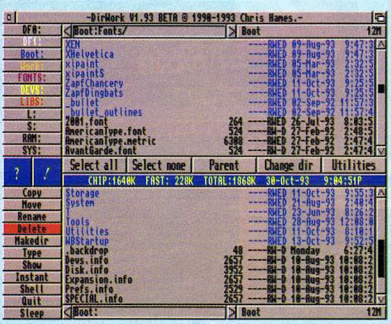
Information from GVP.

AMOS Stays ECS

AMOS fans will be unhappy to learn that EuroPress Software have shelved their plans to release an AGA update to AMOS Professional. The last update invited users to wait for one. Now it seems that the wait will be very long indeed.

Information from Hokianga Software.

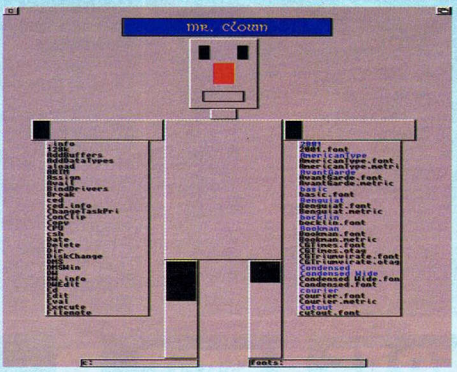




DirWork 2.0 Performs Live With Aerosmith

Hyped almost non-stop by Quasar Distribution since the 1993 World Of Commodore, DirWork 2.0 is now a reality, venturing into the treacherous world of "most versatile and configurable" programs for the Amiga.

These few screenshots show that DirWork 2.0 is indeed virtually infinitely configurable, and the list of features is impressive. Highlights include: instant file type recognition and action, unlimited number of customisable gadgets, all versions of Kickstart supported, full disk-copy functions, complete system statistics, and an ARexx port. Additionally, DirWork will run in only 512 Kb of memory, and can show all types of IFF images, load any datatype image subclass recognised by the Workbench 3+ datatypes library (but only if you're using Workbench 3, of course), play sounds, and run applications and scripts. It seems that DirectoryOpus could be in trouble...



Information from Quasar Distribution.

EtherNet network system for the Amiga.

Includes EtherNet card and networking software. Share program and data files between computers as well as peripherals like printers, CD-ROM drives, RAM drives and hard disk drives. Connect as many Amigas as you like with incredibly fast data transfers.

THE SYSTEM

QuickNet is a complete Network System consisting of a plug in EtherNet card and integrated software.

In any situation where more than one Amiga is involved QuickNet will allow computers to share files and peripherals (e.g. printers). This results in increased productivity, frees up hard drive space, reduces computer system administration and maximises the usage of computer resources.

THE HARDWARE

All models are equipped with thick EtherNet and either thin EtherNet (coaxial cable) or twisted pair. The hardware is based on an industry standard chip set and complies with the IEEE 802.3 standard.

THE SOFTWARE

* Version 1.3, 2.x and 3.x compatible.
* Works with any commercial accelerator and hard disk drive controller.
* QuickNet at it's name implies is FAST.
* Completely transparent in it's operation.
* QuickNet is easy to use.
* Installation is straight forward and comprehensively documented step by step.
* QuickNet has a unique system allowing "diskless" computers to boot "auto-magically" off any computer on the network equipped with a disk drive.
* The manual provides a good grounding in basic network technology and includes a comprehensive glossary of terms.
* QuickNet is a "peer to peer" network for maximum flexibility.
* SANA II device driver also included.

QN500

* Connects to the expansion connector on the left side.
* Optional memory expansion with upto 8 Meg of FAST RAM using 1 Meg or 4 Meg standard 72 pin SIMM's.

QN2000

* Plugs into any available 100 pin connector on the A2000, A3000 or A4000.

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Productivity

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

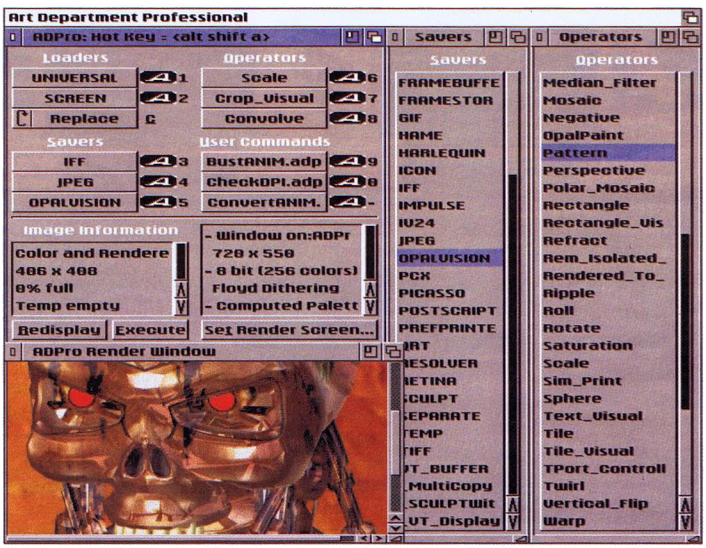
ADPro 2.5

Having used ADPro since version 2, I have eagerly awaited the arrival of the new ADPro for over a month. It seems that my constant complaints about the non-intuitive, playschool interface of the old ADPro had been echoed by the beta testers commissioned by ASDG to help in developing the new product.

Under the surface, ADPro is still the same old ADPro. The installation contains directories for the loaders ("Loaders2"), savers ("Savers2"), and operators ("Operators2" — go figure!). From here upwards, however, it's all new. ADPro's ARexx scripts are now called "commands", and have their own Commands2 directory. Up to three of these commands can be integrated into the button interface, and the entire list is available at the click of a button via the list-based interface.

ADPro now supports third-party display modules (installed in a separate directory), so that clicking "execute" no longer necessarily renders to a standard Amiga screen. Users lucky enough to own EGS, OpalVision, Picasso, Retina, or the FireCracker 24-bit boards can configure ADPro to render images to that particular board. Users with EGS, or some other mode-extending program can cause ADPro to run in an extended screenmode, and render images to a window on that very screen!

The set of operators has been greatly extended. One of my favourites is the "pattern" operator, that can apply a configurable pattern to an image on an edge-detection basis. This can produce pictures that look as if a flock of semi-transparent butterflies have landed on every edge in the image (for want of a better simile), or create a very convincing "dimpled glass" effect.



This version of ADPro no longer supports Kickstart 1.3 — ASDG assuming that anybody with image-processing needs serious enough to require ADPro, will also have had computing needs serious enough to require a system with 2.0 or better.

Look out for a full review in a future issue. **PM■**

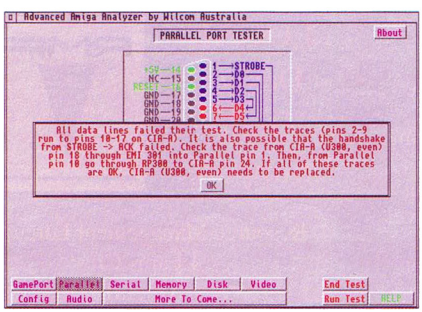
Reviewed by ADU

Advanced Amiga Analyzer

THE ADVANCED AMIGA Analyzer is a combination hardware/software diagnostic utility for the Amiga, which helps narrow down a problem to specific pieces of hardware, and, most importantly, lets you know when things are functioning properly.

Specific tests it can run include: game port function; power parallel port function; power serial port function; memory function; video port power; and audio hardware function. In addition, the Advanced Amiga Analyzer can tell you what hardware is installed in a system, without your having to open up the computer. You can assess which OS ROM is installed; which CPU is in use; which FPU exists; which Amiga chips are present (regular or Fat Agnus?); the memory installed; and expansion boards in use. All tests are run from a point and click interface.

In addition, the parallel and serial port testers require that the appropriate hardware dongles are plugged into the respective data ports (Amiga 1000 tests will require gender changers). Additional dongles are provided to check the power on the game and video ports.



Simply unplug your keyboard and monitor, plug in all the dongle cables, and power on your computer. Any lights on the dongle which fail to work indicate a problem with that port.

All tests have a simple, user-friendly interface. At the bottom left of the screen are two rows of buttons, each representing one of the tests. If you wish to understand your Amiga better, or, alternatively, can't afford to have it professionally repaired, the Advanced Amiga Analyzer is your answer. **RS■**

Reviewed by
The Parts Warehouse

Continued on page 21

Some Productivity reviews are produced by individual distributors. ADU makes every effort to ensure the accuracy of all contributions, but takes no responsibility for any incorrect information. All queries regarding Productivity merchandise should be made directly to the company concerned.

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

the CREATIVE TOUCH

TECHNOLOGY IS RACING ahead and, thankfully, the Amiga is right up there too. Forever on the lookout for new and better — and cheaper — ways to produce ADU, we now have three new resources at our disposal.

As you can see, I've updated the flow chart to include the expanded range of products we use to create ADU.

Digital Photography

We are now using the digital photography services of the bureau where we get film printed for ADU. They have a rather expensive setup, which includes a Sony triple-CCD still video camera.

The image is captured in a "RAM box" and the photo is retaken over and over again, with slight adjustments made each time to light levels, etc., until the desired result is achieved. When the right picture is captured, it is copied from the RAM box to a Mac and then saved as a TIFF file on our SyQuest cartridge. Photoshop (the Mac software in use) has an Amiga ILBM save option, but it certainly doesn't save its file in any format that we can use!

Gone are the days of traditional photography and the subsequent scanning of prints. Now we can see what we're getting before we finish the photo session, and walk away with sharp, focused, well-lit photographs, almost ready for importing into ProPage. All that remains is the conversion from TIFF format and we're ready to go. All hardware photographs that appear in this issue, as well as our last two issues, were photographed in this way.

Fonts

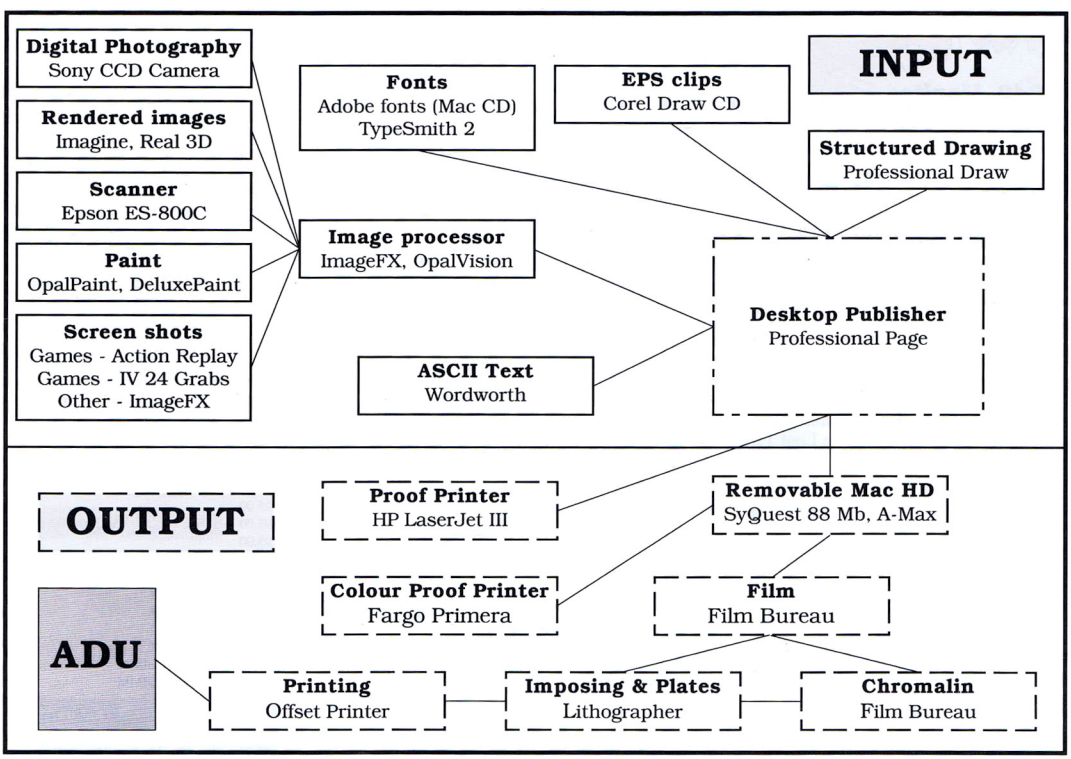
New Amiga fonts can be sourced from Adobe fonts, and one of the best sources is CD-ROM. Adobe fonts can be converted to CompuGraphic and then PostScript fonts, for use in DTP. This conversion, as well as editing of these fonts, or any other font, is easy with TypeSmith 2.

Colour Proofing

With the release of the Fargo Primera printer (reviewed on page 66), we no longer need to have colour proofs printed at a bureau. The Primera — in dye-sub mode — gives colours accurate enough to be used by our offset printer to set up his press. Now that is impressive!

Previously, we needed to get a chromalin printed for the offset printer to check colours. This was costing around $140 per A4 page, compared to $9 for the Primera dye-sub print. The colour proofs we were getting from the bureau at $45 in thermal wax are now costing us $2 per page on the Primera.

This new printer, which has Amiga drivers, saves us an enormous amount of time and money. ■



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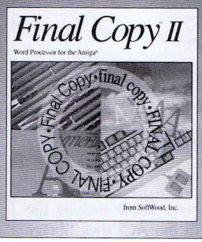

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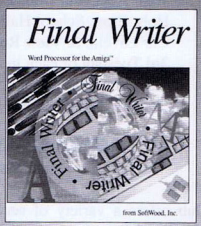

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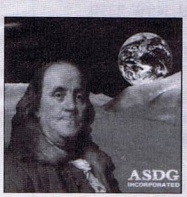

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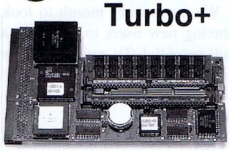

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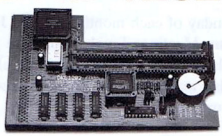

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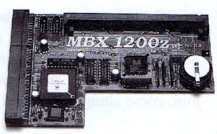

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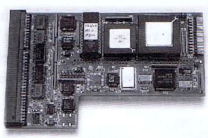

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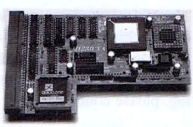

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New Plymouth, NZ

The club operates its own Bulletin Board and publishes "The Amiga Informer", our user group newsletter. We meet every month to look at new products, discuss ideas on introducing new users to our club, and learn how to utilise the Amiga to its full potential. To get in touch with us, contact:

Mark Blance (Club Secretary)
P.O. Box 634, New Plymouth
Ph. 0-6-753 5006 or
Karen Spence (President)
Ph. 0-6-756 6031

LAKELAND COMMODORE COMPUTER CLUB
Taupo, NZ

LCCC holds meetings on the last Monday of each month at the St. John Ambulance Hall in Taupo at 7.30 pm. Meetings involve software and hardware demonstrations and tutorials and the club publishes an alternating, bi-monthly newsletter and disk magazine. To find out how to join, come along to our next meeting or contact:

Ray Hollard (Chairman)
Ph. 0-7-378 6433 or write to:
Lakeland Commodore Computer Club
P.O. Box 149, Taupo

NELSON AMIGA USER GROUP
Nelson, NZ

The Nelson Amiga User Group is a non-profit organisation which meets on the third Thursday of every month, at a venue to be advised. The club also publishes a monthly newsletter, "Bytes of News", and membership is open to all. If you are interested in attending our next meeting, please contact:

James Chappell (President)
Ph. 0-3-548 9948 or write:
C/- 174B Atawhai Drive, Nelson

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AMIGA CHRISTCHURCH INC.
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Amiga Christchurch Incorporated
P.O. Box 35107
Christchurch

or phone Phil Stuart-Jones (Membership Officer)
Ph. 0-3-365 1448

EAST COAST AMIGA INC.
Gosford, NSW

Benefits available to members include a User Group Shop, special workshops, retail discounts and more. In addition the group publishes a bi-monthly magazine called "Output". If you would like to know more, please contact any of the following:

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or alternatively, write to ECA, P.O. Box 344, Gosford, NSW 2250

COMMODORE COMPUTER USERS' GROUP (QLD) INC.
Springwood, Queensland

Publishers of "Cursor", the group's informative monthly magazine. For further information on our activities and next meeting, please contact :

Phil Guerney (President)
Ph. 07-378 9756 or write to:
The Secretary
C.C.U.G. (Qld) Inc.
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COMMODORE HORNSBY USER GROUP INC.
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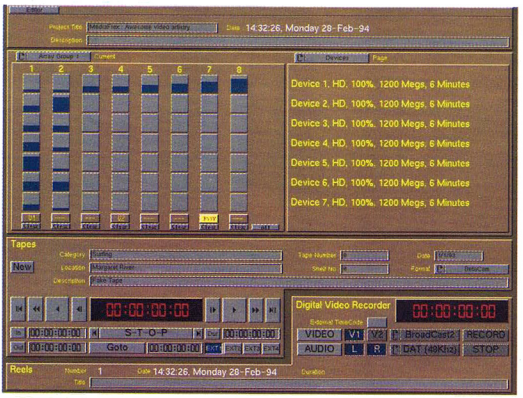
CHUG supports Amiga and Commodore C64 and C128 users. We meet twice monthly at St. Leo's College, Woolcott Avenue, Wahroonga. Dates and times to be advised. All visitors are welcome and you can contact the Club Secretary on 02-487 1062 for further information. We also have a doorway on the "Three Amigas" BBS 02-609 4458, which supports bps rates 300 to 9600. Settings are F8N1.

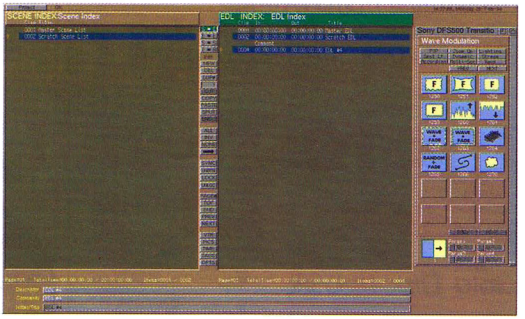
Continued from page 16

MediaFlex

Colour Computer Systems in Australia are due to release their online, non-linear editing system, MediaFlex.

MediaFlex is an advanced, Amiga-based, editing system like no other, and looks likely to be the next "Video Toaster" for the Amiga. It employs three Amiga 4000/040s, two DMI Digital Broadcaster 32 cards, a 14 GB array of fast SCSI AV hard disks, OpalVision and/or dedicated effects generators (i.e., Sony DFS500), a Sunrise 16 sound card, VLAN and a miscellaneous collection of custom hardware.





Complete with some rather nice custom software, MediaFlex basically offers you broadcast quality record and playback of audio and video direct to hard disk. Once in this form, it is totally free from the normal constraints of tape-based editing. This lets you perform edits in considerably less time and allows animators to see 3D animations being played back in realtime. Complex effects like morphing can be performed easily and seamlessly. Variable compression ratios and MPEG creation facilities are just a few of the system's talents. It is mounted in a rack system and allows two users to edit concurrently.

Release date: Mid-March. (OpalVision won't hold it up.)

For more information, phone: 0-25-949-452 **ASI**

Review by Anthony Smith

Personal Paint

DPaint is the standard for, it seems, almost every paint program produced for the Amiga. Not yet big enough to challenge this acceptance is Cloanto Italia, manufacturers of Personal Fonts Maker, Personal Write, and now Personal Paint.

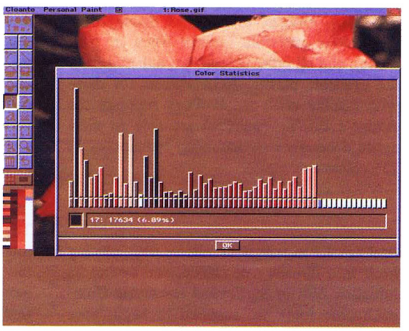
PPaint comes on two disks, comprising the program itself, a JPEG datatype for users of Workbench 3.0+, drivers for the HP DeskJet printer, the CloantoAudio audio driver (which acts as an audio rendezvous for all Cloanto programs needing to use the Amiga audio to make sounds), and a deluge of example pictures in GIF format.

Sharing many hotkeys with DPaint, the PPaint interface is clean and easy to read. Set out as a combination of toolbox and menus, it is easy to use, and can be run in a variety of languages. By removing any animation facility, Cloanto have made PPaint smaller and easier to handle than DPaint, but have also alienated themselves from a large portion of the DPaint market, who use the program primarily to create still frames, and animate them.

Despite the lack of animation, PPaint proves itself to be, at first glance, a worthy contender in the non 24-bit field of paint programs. The ability to load images using the datatypes.library means that esoteric formats like JPEG, GIF, and, of course, ILBM, are all automatically handled, without the need for complicated (and possibly inefficient) code within the program itself. Naturally, users not running Workbench 3.0+ will not enjoy these advantages, but the ILBM format is enclosed within PPaint, so that older versions of Workbench need not be a handicap.

A bonus in PPaint is the extensive and fully-featured PostScript output section. PPaint is the only paint program I know of that can directly output PostScript files. There are controls for crop marks, mirroring, UCR for the K, M, and C printing inks, and screen angles. Many of these options are for high-end printing machines only, and can safely be ignored.

The PPaint manual is also a gem. A small, unbound book of some 200 pages, it covers every function in PPaint extensively, containing excellent background information as well.



Our inhouse DPaint professional is all set to rip into PPaint with an extensive set of comparisons and comments. Look out for a review in a future issue of ADU. **PM**

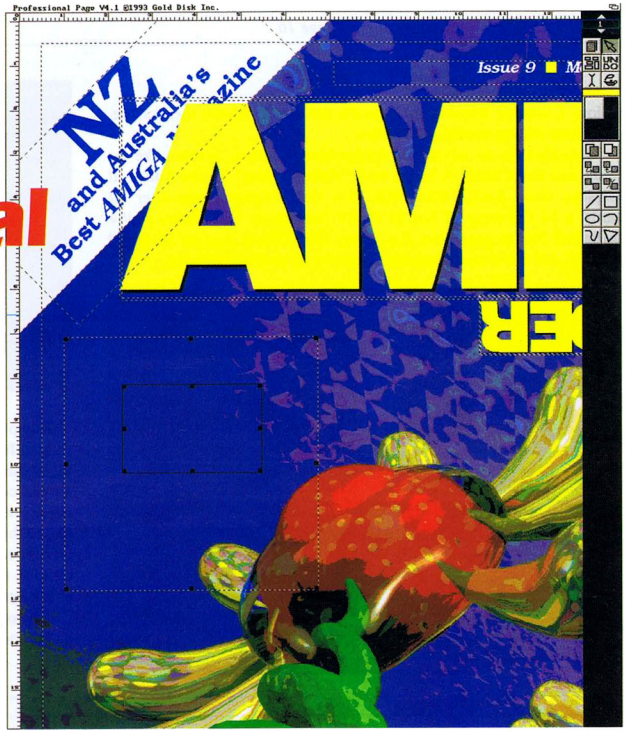
Cloanto Italia, Italy

Some productivity reviews are produced by individual distributors. ADU makes every effort to ensure the accuracy of all contributions, but takes no responsibility for any incorrect information. All queries regarding Productivity merchandise should be made directly to the company concerned.

Matthew Buchanan *— with assistance from* ***Graeme Cheesman*** *and* ***Peter Morrison*** *— gives his thoughts on DTP giant...*

Professional Page 4.1

Gold Disk ■ USA



Issues 1 through 8 have been created using ProPage, and, as you can see, our next issue is well on its way...

EARLY IN 1993, ADU was informed that Professional Page 4 was on its way, and with eager anticipation, we awaited its release from Gold Disk. Our DTP worries would finally be over, wouldn't they? Well, no, as a matter of fact. As professional *power* users, we wanted a faster product, endowed with features common to the high-quality equivalents available on those *other* platforms. The much-needed increase in speed provided by ProPage 4 was unfortunately matched by a host of nasty bugs — some of which have been eliminated in subsequent updates — not the least of which have cost us a great deal of time and money.

Professional Page 4.1 is an AGA-compatible, full-colour desktop publisher. On non-AGA Amigas, bitmaps are displayed in four-colour greyscale (except when in 1-bit mode), and all other colours are dithered from the available palette. AGA owners (or those with display cards — ProPage supports the Amiga's display database) are able to view entire documents — including bitmaps — in 256 colours.

Installation

ProPage 4.1 installs with relative ease, placing itself in a directory of choice, and saving its initiation files in S:. Several rescalable CompuGraphic fonts are supplied to begin your collection, and utilities are provided for both the conversion of Adobe fonts, and the creation of PostScript and Amiga fonts, from those supplied. Standard Amiga bitmap fonts are also supported, although CompuGraphic fonts give vastly superior output.

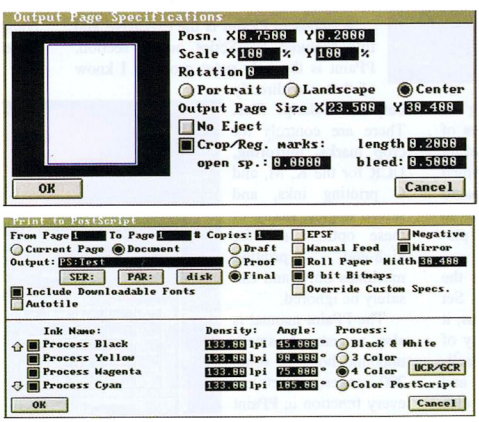
For those without hard drives, ProPage will run from two floppy drives, although, I suspect, rather laboriously. Arm yourself with a cup of tea. An 030 or better is *strongly* recommended to avoid hair-tearing frustration over slow screen refreshes. All told, though, it still leaves PageStream choking on its dust.

What's New?

AGA support tops the list of improvements over version 3, followed closely by support for custom screen sizes, an editable facing-pages mode, paragraph indentation control, a page sort window and, of course, greatly increased speed. Fill patterns and text preview are implemented; extra genies and graphics filters are supplied, along with a very simple bitmap editor and Article Editor (TransWrite 2 in disguise) — a fast, simple text editor which still doesn't sort directories alphabetically!

Let the Fun Begin

The Professional Page screen includes a multitude of pull-down menus and a toolbox to the right-hand side (the toolbox cannot be moved to any other position). Page templates, font selection and styling, style tags and miscellaneous tools are accessed through the menu system, and the most commonly used features, such as box creation, box grouping and ARexx "genies" are available in the toolbox.



Professional Page 4.1 uses a system of layered boxes into which text, graphics or structured drawings may be placed. Structured drawings remain part of the project, while bitmaps are stored as full pathnames, and can therefore be edited or replaced without the need for re-importing. Boxes can be dragged around on a page, positioned numerically using the Box Attributes requester — just double-click on the box in question — and locked from movement once positioned correctly. There is, however, no way to select a box entirely obscured by another. The only box depth tools provided are "Send to Back" and "Bring to Front", which can lead to problems when creating documents with multiple, layered boxes. The "BoxesFrontToBack" genie goes some way to alleviating the problem, but a hotkey to cycle through all boxes directly under the mouse point would eliminate it entirely.

ProPage's ARexx genies are an invaluable addition to a decidedly mediocre program. Scores of prewritten ARexx scripts are supplied as part of the program's installation, allowing the user automated access to everything from box attribute duplication, page manipulation, and group distribution, to automatic document saving and backup. Even a hotlink to ADPro!

ProPage's hotkey system is extensive, with almost all menu items accessible via the keyboard. One other hotkey which I would like to see implemented is a "repeat last genie" key. Instead, the genie requester must be opened every time a genie is required.

Some hotkeys bring up requesters that are neither documented nor implemented: e.g., alt-shift-a to "knockout black".

Caution: Contents Unstable

ProPage's memory handling is, quite simply, appalling. It will run on a 1 Mb system, but not for long. Working on a large document for an extended period — even with upwards of 10 Mb of free Fast RAM — will cause massive fragmentation of memory, necessitating an unavoidable reboot. And this is just the start of the problems. Professional Page 4.1's most severe and annoying bugs include, but are by no means limited to: the incorrect loading of all documents containing style tags (pre-defined text attributes) — tags must be removed before saving; an inability to load 8-bit greyscale images from either ADPro or ImageFX, or any DBLPAL files; the incorrect placement of colour boxes on a 16-colour screen; the apparent random placement of bitmaps after accepting the "Load Bitmaps Immediately" requester; and the inability to safely change screenmodes at any time other than just after the program is run.

Programmers running Enforcer will turn green and start to tremble after witnessing the multitude of hits generated by ProPage during normal activity. Although in many internal respects ProPage 4.1 is superior to PageStream 2.22, it is the exterior impression produced by the clumsy, non style-guide compliant interface, which leads to such easy criticism. ProPage's only real competitor in the Amiga marketplace, PageStream, presents a far better outward appearance than that of ProPage, though its bugs are far more manifest — it is easier to gloss over these, however, because the interface is so polished.

On machines with any less than 30 Mb of RAM, it isn't a good idea to quit ProPage either. It will crash, or at the very least, fragment some more memory.

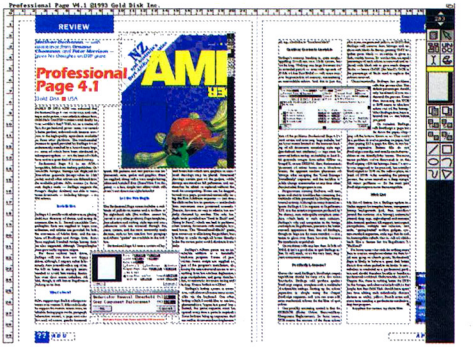
PostScript, Anyone?

Those who need ProPage's PostScript output capabilities should be wary of a few more drawbacks. ProPage will produce quality PostScript output, complete with a multitude of adjustable settings. Setting up for colour separation is simple using the Output PostScript requester, and you can even add extra mechanical colours for the likes of spot colour.

One possibly confusing control is that for UCR/GCR (Under Colour Removal/Grey Component Replacement). In basic terms, UCR means the amount of the three colour inks (cyan, magenta and yellow, or CMY) that ProPage will remove from bitmaps and replace with black. In theory, printing CMY together gives black — in reality, it gives a dark, muddy brown. To combat this, an equal percentage of each colour is removed and replaced with black ink to give much sharper blacks — hence CMYK (for blacK). GCR is the percentage of black used to replace the colours removed.

Characteristically, ProPage has problems with this process also. The default percentages should only be altered if you understand the process. Even then, increasing the UCR to 80% seems to take less colour out of the bitmap. What ProPage does here is beyond me — test before you print!

On occasion, ProPage will PostScript a page too far down the paper, chopping off the bottom 10mm or so. This won't be a problem if you're printing on paper, but when paying $15 a page for film, it can become expensive. Pattern fills do not PostScript correctly, and usually crash the machines at our friendly Mac bureau. The most recent problem we've discovered is in the PostScripting of 24-bit bitmaps. Issue 7's cover was supposed to be pure red, but actually PostScripted to 70% on the yellow plate, instead of 100%. After tweaking the printing process, the cover arrived as a deep orange. All *minor* problems — for the most part PostScript output is more than acceptable.



A work in progress: the ProPage layout for this review...

Wish List

My list of desires for a ProPage update includes support for irregular boxes, transparent bitmap backgrounds (and, thus, text-flow around the contours of a bitmap), automatic internal drop caps, right-aligned and numeric tabs, internal gradient fill support, text aspect manipulation, multiple text selection, text undo, "spring-loaded" toolbox gadgets, system-standard requesters, style tags that do and an interruptible refresh that is. All of which reads like a feature list for PageStream 3. 'Nuff said?

For home users who wish for nothing more than to create a simple newsletter for their local user group or church picnic, Professional Page is likely to behave a great deal better than it does when pushed to its limits. It nevertheless is marketed as a professional product, and should therefore be able to handle a professional workload. Unfortunately, it can't. Despite this, there is nothing better for DTP on the Amiga, and what we're left with is the simple fact that Gold Disk should have spent less time adding such ridiculously obscure features as sticky, yellow, Post-It notes and more time creating a productivity-conducive, bug-free program. ■

Supplied for review by Gold Disk

PROFESSIONAL PAGE 4.1
NZ$380 A$149

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FEATURES ★★★★★
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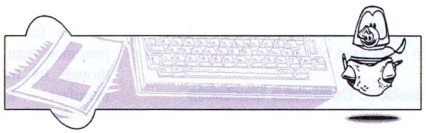


***Peter Moosberger** introduces the Workbench Preferences editor - an easy way to give the Workbench your own individual look.*

THIS ARTICLE TAKES a look at how you can change the "look and feel" of your Amiga to suit the way you work. "Hands-on" sections for WB 1.x and WB 2.x Amiga users show in detail how you can modify the mouse pointer. Try the examples — they're easy and they're fun!

Preferences – Giving Your Amiga That Personal Touch

The developers of the Amiga have made it a thoroughly flexible tool. The software controlling the basic operations ("the operating system"), has been designed to include a special group of routines, that allow you to control the working environment i.e., to alter its "look and feel". These routines are collectively known as Preferences.

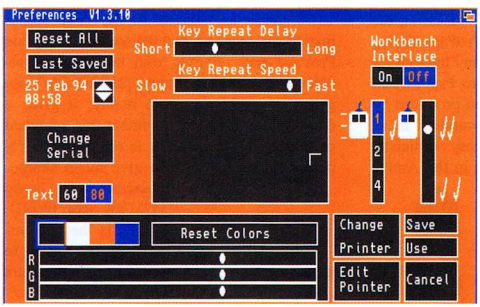
A word of caution might be appropriate here. Because personal computers are intended to be just that, users like to be able to personalise the way they interact with their Amiga. As is often the case in computing, there is a trade-off. Many Amiga owners are family groups. In the family user situation, it might not be wise to get too carried away with one member's wholesale customising. At least, not without the general agreement and cooperation of the others. That's being considerate and could save both arguments and other users shying away, if they become confused with a new look every time they sit down to use the computer.

The default settings in the early period of use standardise the Amiga interaction and this is, arguably, the most comfortable way for everyone to begin. On the other hand, certainly don't let that deter you from trying out Preferences to see what's what! You may need to revert some of your preferred settings back to the defaults after your foray — that's all. If in doubt, just "use" the settings instead of saving them; this way you can reboot back to standard settings again.

We now explore some of the possibilities at your disposal for such customisation of the computer, and offer tips to assist in making it work for you.

"Safe", common, early uses will include settings for time, date and printer. In general, the idea is that you use the various Preferences controls to bring about the effect you want, and then have those changes remembered by the computer by saving them. You can detect many of the settings taking effect right away. This interactivity is a very convenient way to set your requirements. To begin with, you will want to have your operating manuals handy, when you work through any changes.

Due to the major revamp of the operating system WB 2.x, over its earlier versions WB 1.x, it is convenient to discuss the Preferences for each separately.



The Early Workbenches (Versions 1.x)

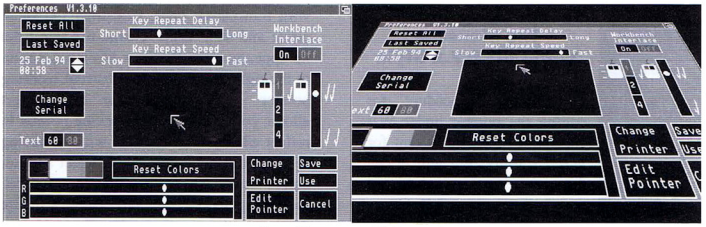
In hindsight, the Preferences options available in the early Workbenches, compared with the latest operating software, are few. Nonetheless, you can still make quite dramatic changes. Many of the older models still using these Workbenches are floppy disk-based machines. In the case of multiple users, each could have his/her own diskette containing Workbench Preferences to suit that particular user. In effect, it is like having an individual computer, except that the one set of hardware is shared. Each user could, for example, have his/her own Kindwords word processor disk, containing its abbreviated Workbench, individually configured. This method of working is still available to multi-user hard disk models, although not recommended (it tends to be clumsy, with the danger of introducing viruses, due to the need to boot from floppy, etc). So typically, with a hard disk model, just the one shared set of Preferences results, unless you are able to set up multiple start-up sequences to cater for various users. (The latter is beyond the scope of this beginners' section.)

Access to make settings is through the Preferences Tool — normally an icon sporting a large question mark, labelled "Preferences" or "Prefs". Double-click on the icon and the entry/exit window for Preferences appears. Current settings are displayed and you can make changes. Choices can be saved to your Workbench disk by clicking on the Save button. Alternatively, you can elect to simply Use the choices for that particular session or Cancel any changes. Selecting any of these buttons returns you to the Workbench screen. By the way, the two "droid"-like figures (gondolas?) are an interesting mystery to most newcomers. They in fact represent the mouse Prefs — speed and double-click delay. Try them — click one of the non-highlighted mouse speed numbers or drag the delay slider and see/feel the effect.

It is important to note that your Preferences can still be edited and saved to your boot disk, without that disk's containing the Preferences Tool. This is often the situation with application software. The application program may take up a large part of the storage capacity on the floppy disk, only leaving room for the barest of WB essentials. So to work with Preferences in this situation, boot the Amiga with the program disk to the WB screen stage. Then insert any disk containing the Preferences Tool and activate it. You will be requested to insert the boot disk. The current Preferences configuration on that disk will be read and will appear for you to edit.

Are you droid or mouse? Find out with v1.3 Preferences.

A surprising number of choices is available, notwithstanding a first impression

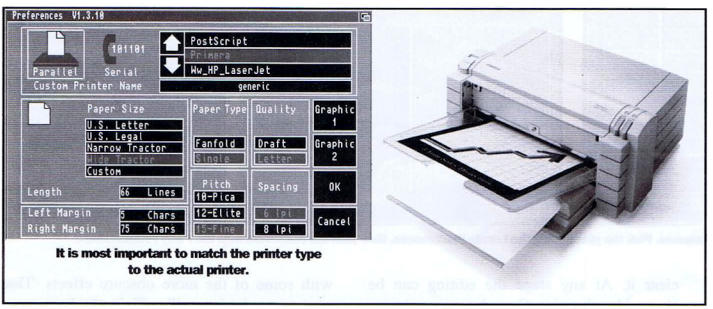


You will never see this happen!

of compactness. Try the screen centring control (the one in the centre of the window). Also check that the text control is set to 80, if you have an Amiga monitor. The 60 setting should be used when a TV monitor is connected. Mind how you set the Workbench colour sliders for each of the four display colours. It's possible to completely lose sight of the controls! Reset Colours is great for regaining the old colours (as long as you can see the button to click in it; otherwise you'll have to guess where to click!). This is a favourite area for youngsters to indulge themselves. Don't be surprised if the next time you load Workbench, it appears in outrageously garish tones!

The time and date controls are operated through the up and down pointing arrow buttons. Simply click on the category on the left, which you want to change, then on the up or down arrow to increase or decrease its value.

Three buttons give access to separate subwindows. These relate to the serial port, the printer and the pointer.



It is most important to match the printer type to the actual printer.

In the Change Printer Screen, the most important setting is Printer Type. For the printer type to be selectable, you must first have copied the appropriate printer driver into the Devs/Printer directory. Prefs simply allow you to specify the one you want to be in effect. You must specify whether your printer interface is parallel (more than likely) or serial. The remaining options enable you to set up your most preferred printer/word processor settings. Be aware that these will be the defaults that will be in effect when you activate your word processor. Normally, any setting can be changed locally, from within the word processor itself. Printer graphics settings have their own window or windows (depending on version), and for the beginner, these are best left alone. However, if you have a colour printer, make sure that you choose Colour from the Shade options.

Messing With The Mouse

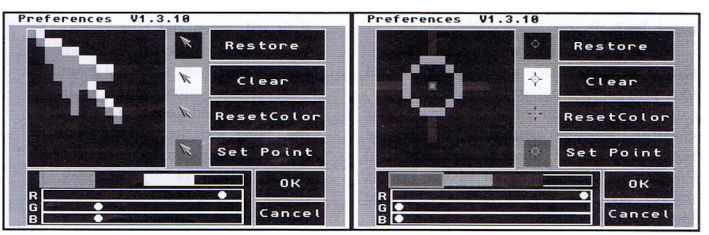
Now for some "hands-on". Let's edit the pointer. A "safe" way to practise with Prefs is to use a copy of your original WB disk. You can then apply what you have learnt to real work disks.

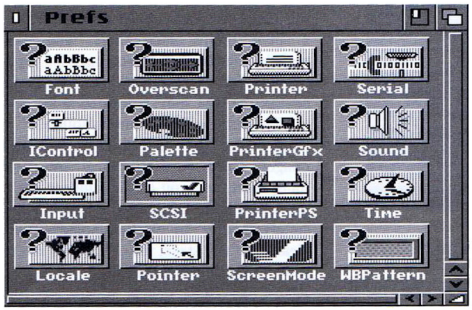
In my time working with a great many eager Amiga users, I have come across an interesting variety of customised pointers — shapes, colours and "hot spot" positions. The "hot spot" is the single pixel every pointer possesses, that must be inside an icon's box, in order to select the icon.

Everyone, at some time, wants to create their very own pointer design. The pointer is central to operating the Amiga, so go ahead and indulge.

1 Access the Prefs screen by double-clicking on the Prefs Tool icon.
2 Select Edit Pointer and the pointer editing window appears.
3 You will see a magnified image of the current pointer in the upper left-hand corner. This is the drawing area you can alter to change the pointer. Note the four life-size pointers set against each of the WB colours, on the right of the magnified image. You will want to avoid using colours for your pointer that coincide with these WB colours. Note also the point pixel indicated by the smaller square inside one of the pixels. In preference to the standard WB pointer, I have often used a simple, but functional, crosshair pointer, consisting of a small, bright green circle, with short north/south/east/west lines outside, highlighted with a central, bright red dot. Of course, the "hot spot" is located at the centre. Try creating this pointer as follows.
4 Click on the Clear gadget. The five pointer images vanish i.e., all pixels are made transparent, and you can commence creating a new one. Of course, if you want to simply modify the existing pointer, don't clear it. At any stage, the old pointer can be restored by choosing Restore.
5 Above the RGB colour sliders are four colour selection buttons. You cannot alter the rightmost one; it is the transparent "colour". Use it to draw transparent areas on your pointer and to effectively undo any other coloured pixels. WB colours will "show through" these pixels. The other three colours can be modified by selecting them and changing their red, green and blue components. Start by selecting the leftmost colour and modifying it to lime green. Draw on the drawing area, either by individual clicks or by dragging. Remember, you can undo wrongly-placed colour pixels by substituting with transparent ones. Construct the small circle and short arms. Gauge the size from its appearance in the four life-sized copies to the right. Note that your current working pointer is unchanged. The new pointer only becomes usable after you select Use or Save when exiting from the Preferences Tool. Now select the second colour, modifying it to bright red. Draw a centre dot inside the crosshair.
6 Select Set Point. Click in the very centre of your image. The point pixel moves from its previous place to the new position.
Hint: Position the "hot spot" in an obvious place on your pointer i.e., tip of arrowhead; otherwise your co-users won't easily twig to where to point! If you come across a pointer failing to respond to selection clicks, it's more than likely that the point pixel has been placed away from where it should intuitively be. And in the extreme situation — which, incidentally, one Amiga-oriented family, who once called for assistance, was trying to cope with — the pointer and point can be completely transparent!
7 Select OK when the pointer is the way you want it. You will be returned to the main Preferences entry/exit window. Select Save or Use to put your pointer into effect.

Following the "hands-on" example will give you a pointer like the one on the right.





The Later Workbenches (Versions 2.x)

As mentioned previously, Prefs 2.0 and later are a major revision over the early Prefs. This is part of the long-awaited, "professional" (as opposed to "games") interface, which has given the Amiga consumer image a much-needed fillip in the last few years. Known as the Preference editors, these are contained in the Prefs drawer. Their collective capability far outstrips options previously available. Users of Amigas running these upgrades will want to refer to the relevant documentation. In particular, Commodore's Using The AMIGA Workbench (Chapter 3: Preferences), shipped with most Amigas, contains an excellent introduction to the wealth of customising you can effect. All sorts of handy gadgets in Prefs make your computer so much more enjoyable and functional. For example, take a look at the Time editor, where you can view instant monthly calendars, simply by editing month and year settings.

There are also editors for background patterns, fonts, screenmodes and interface control shortcuts, to mention just a few, as well as the equivalents of earlier Workbench Preferences.

Note that there are two main printer editors. The Printer Gfx editor gives control over graphics and colour.

In addition, each editor features menus enabling multiple configurations of the same editor to be saved. These so-called Presets are normally saved to the Presets drawer and are readily available to be implemented at any time.

Messing With The Mouse — Workbench 2.x Style

The general procedure for editing the pointer under WB 1.x applies directly to that for WB 2.x users. We will create the same green and red crosshair pointer as follows:

1 Access the Prefs window by opening the Prefs drawer icon in your WB window.

2 Open the Pointer icon and the Pointer Preferences window appears.

3 You will see a magnified image of the current pointer in the upper left-hand corner. This is the drawing area you can alter to change the pointer. Note the four life-size pointers set against each of the WB colours on the right of the magnified image. You will want to avoid using colours for your pointer that coincide with these WB colours. Note also the point pixel indicated by the smaller square inside one of the pixels.

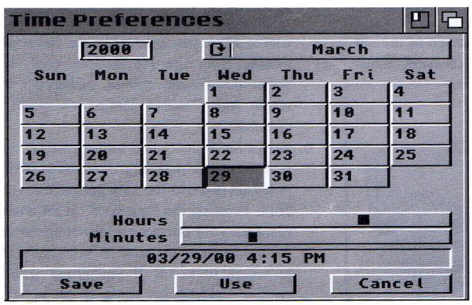
4 Click on the Clear gadget. The five pointer images vanish i.e., all pixels are made transparent, and you can commence creating a new one. Of course, if you want to simply modify the existing pointer, don't clear it. At any stage the editing can be aborted by choosing Cancel.

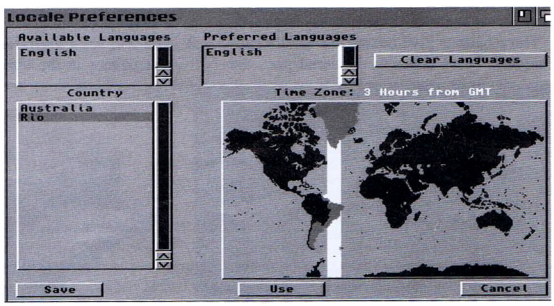
5 Above the RGB colour sliders are four colour selection buttons. This differs from earlier Workbenches in that it is the left-most "colour" that is transparent and which cannot be altered. Use it to draw transparent areas on your pointer and to effectively undo any other coloured pixels. WB colours will "show through" these pixels. The other three colours can be modified by selecting them and changing their red, green and blue components. Start by selecting the second one and modifying it to lime green. The selected colour shows in its own box immediately to the left of the colour selection gadget. Draw on the drawing area, either by individual clicks or by dragging. Remember, you can undo wrongly-placed colour pixels by substituting with transparent ones. Construct the small circle and short arms. Gauge the size from its appearance in the four life-sized copies to the right. Note that your current working pointer is unchanged. The Test gadget allows you to update the working pointer to reflect what you've created, without having to exit from the editor. Now select another colour from the colour selection gadget, modifying it to bright red. Draw a centre dot inside the crosshair. The Reset Colour gadget will reset the colour selection gadget with the set of colours that were last saved.

6 Select Set Point. Click in the very centre of your image. The point pixel moves from its previous place to the new position.
Read the hint in the WB 1.x "hands-on" section, concerning placement of the point pixel.

7 When the pointer is the way you want it, it may be saved or just used for the current working session, after selecting either Save or Use at the time you exit from the Pointer Preferences window. You will be returned to the main Prefs window.

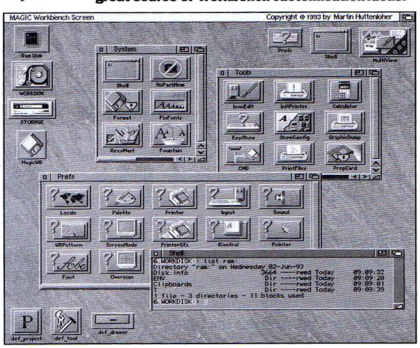
The Prefs chapter spanning some 60 pages is a useful and practical introduction. Many publications deal with the intricacies of Prefs in this new operating environment. You are encouraged to carefully study and practise the introductory literature and then experiment with some of the more obscure effects. That way your Amiga will efficiently hum your particular tunes! Now more than ever, the Amiga can be individualised, while retaining its universal power. ■





Pick the day of your birthday using the Time Preferences. Pick the place using the Locale Preferences. Now plan the festivities with the Party Preferences...

MagicWB, released on the PD disk for ADU 6, is a great source of Workbench customisation ideas.



THE DREADED PIRASAURUS REX

by Michael Granat

IT LIVES. It breathes. More than likely, it stalks its prey in your own home. It is the Pirasaurus Rex or, to use its scientific name, Pirasauripoffmerchanticus Virusspreadicus Rexyoursystemus. The killer of quality software development for your Amiga computer.

Killer Inside Me

Many an innocent Amiga user has succumbed to its bird-like call of "Cheepapplications", only to have the very computer they tried to feed from the hands of Pirasaurus Rex, simply curl up and die at a critical moment. An innocent Amiga, starved of quality software, development and manufacturer support.

Good software applications are the lifeblood of the Amiga. Commercial software is created by people who conceive, design and test software for a living. People who must make an income from what they do, to provide themselves and their families with the necessities and good things of life. But every time you buy a pirated disk, or make a copy of your new software for a "friend", who just happens to notice your latest acquisition, you are feeding the Pirasaurus Rex and keeping it alive to slowly, but surely, kill your Amiga.

"...$30,000 for a basic version of InterLeaf — $100,000 for the version with the lot."

Predators And Prey

You see, the Pirasaurus Rex eats into the living of the very people who develop the magnificent software, and write the helpful, readable user manuals, that make the Amiga so approachable, intuitive and powerful. It also eats into the living of those who work long and hard to bring that software to you. After all, don't they deserve to make a living from their efforts? Feeding the Pirasaurus Rex hurts them, and their families too. And when they see the Pirasaurus Rex lurking so close to every Amiga user, it is no wonder that Amiga software distributors and retailers often feel disheartened, even though they are Amiga enthusiasts too.

The Virusaur

Worse still, wherever the Pirasaurus Rex goes, it carries a small creature on its back. Sometimes dormant, and usually invisible, until it wishes to rear its ugly head, the Virusaur spreads disease to every Amiga disk it can touch. Only through genuine, original software, can you be sure of totally avoiding the evil Virusaur, a creature born of the sickest minds in computing. The pyromaniac of the digital domain.

Take a good look around you and you will see that the Pirasaurus Rex has no need to exist in the Amiga community, apart from the selfishness of those who feed it. Amiga software features the most reasonably priced programs for any computer platform. Buying a desktop publishing package for UNIX costs $30,000 for a basic version of Interleaf — $100,000 for the version with the lot. Recommended retail for Quark Xpress for IBM and Macintosh? $1884. The importer's advertised price for PageStream 2.2: $165. Where is the benefit in feeding the Pirasaurus Rex, when first-rate word processing software can be had for as low as a seventh of the price of the IBM equivalents? What is the sense in copying a children's paint program like Hoopy Paint, when an Australian programmer's livelihood is threatened for the sake of $60? Why copy PC-Task, when the $50 or so that you pay finances the career of a brilliant young Australian programmer, who continues to produce and develop other absolutely invaluable programs for our Amigas?

A New Dawn

I cannot honestly say that the Pirasaurus Rex has not been in my home. Even its companion, the Virusaur, once breathed a sickness into my Amiga that almost ended my business at a critical time. But as I remove the "evaluation copies" from my collection and replace them with new and original software, good things happen. My shelves fill with attractive boxes and informative manuals. Little plug-in devices, called dongles, are provided to ensure that programs load and run without a hitch. Software developers send me fascinating newsletters, full of useful tips and special offers on new releases for my computer. My programs start and run quickly. No messages appear on the screen to Pirasaurus Rexi near and far. No inane or offensive demonstration screens hamper my access to what is my business tool. My Amiga.

And with every genuine, top-quality and ridiculously inexpensive software application I buy, to run with complete reliability on my Amiga, I have the pleasure of knowing that I am driving all the Pirasaurus Rexi and Virusaur beasts back where they belong. Into the depths of the Pirasea, to die before they do any more harm to our Amigas. ■

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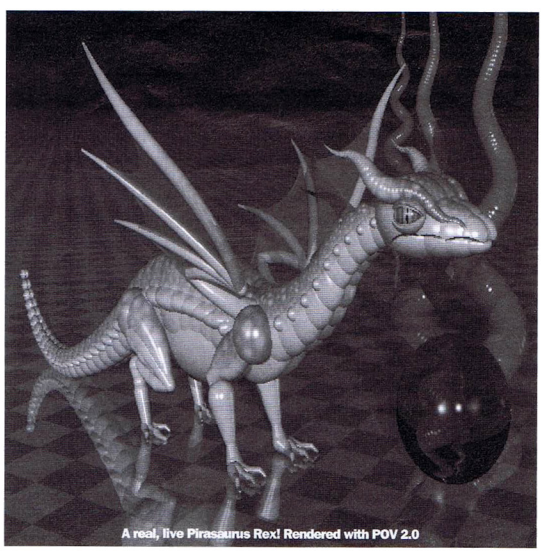


A real, live Pirasaurus Rex! Rendered with POV 2.0

LETTERS TO THE EDITOR

Dear ADU,

I find it difficult to know where to begin so from the beginning ... 38 ... male ... Brisbane born, graphic and fine artist. Computers I have used ... Quantel Paintbox, Mac SE & Mac II, Amiga 500 (this is a toy ... originally purchased as a word processor for my wife, who subsequently bought herself a dedicated WP). Without a hard drive, it was more trouble than it was worth. So I purchased an A4000/040 as I had a contract for doing graphics for a couple of American telemovies. I thought instead of updating my A500, I may as well go the whole hog and get THE BEST.

How disappointed I was when I bought Pro Draw 3 and found it didn't work on the A4000, having been assured by the software retailer that it would run ... I eventually purchased a second GVP HD+ for the 500 and updated to WB2 which got me through... just. Never mind the slowness of screen updates or the printing times of 30 or 40 minutes. That cost me $800, and my "you beaut" A4000 sat doing nothing for three months. For my next show I had to have something better, so while I waited for the update to PD3 to turn up, I purchased a fandangle new program called Art Expression which I was led to believe through reviews to be WB3 compatible?

It would not print 100% in both width and height. It would print multiple overlapping images, the higher the resolution the more images. Some files are saved scrambled, the positions of various objects/text were altered, some scattered beyond the page boundaries. I now have version 1.04 (Soft-Logik were quick in their response to my faxes). Unfortunately the problem with the files scrambling is still there, though not nearly as bad. Back to PD3 ... The update to PD3 works ...well ... sorta, apart from the fact that it will crash at the slightest provocation. Though perhaps it might be the Public Domain fonts. Whatever ... it is so unstable I rarely use it any more.

Of the two programs, PD3 is the more powerful but I tend to use Art Expression 90% of the time because I find it much more intuitive to use. Neither of these programs uses the AGA capabilities of the A4000. I have no desire to delve into the depths of the Amiga. It is a tool. I just want to open a program and work. Unfortunately the amateurishness of these programs has soured the whole Amiga experience for me. And so to hardware ...and you thought I'd finished. The clock went kaput very shortly after purchase (repaired under warranty). On booting up ... the hard drive doesn't, if you get my drift. Apparently a common problem, to do with too much power to the drive, or so I'm told (yet to be fixed as I don't get a lot of down time). Where to end ... I am sick to death of Amiga mags in general telling me how wonderful and powerful the Amiga is and making excuses why programs aren't being written for it. Bottom line: hardware is there to run software! Funny thing that!

P.S. You use PD3 and appear to think it marvellous. What have I done wrong? Did I kick a dog in my previous life? Will the Amiga take over the world (certainly not mine)? Who can or will answer my questions?

Randy Vellacott
Oxenford, Australia

Well, Randy, you sure have had a rough time of it. I can't blame you for the way you feel. The Amiga 4000 is certainly not a perfect machine, but what computer is? What gets up my nose are dealers who sell you a product and are not fully aware of what is compatible. Then they proceed to tell you all sorts of rubbish to try and get out of it.

I checked on the "too much power to drive" problem and got laughed at. Someone's trying to pull the wool over your eyes there. The A4000 did have a boot problem and Commodore released a tech update in May 1993 explaining the fix. You need a 391470-02 chip in board location PAL U204 which should solve your problem.

You're right that a computer is a tool to be used, not a weekend project that takes you all your time to get it to do what it is supposed to. Believe me when I say I know what you mean.

I can't do much to resolve your particular problem, but I do agree that the Amiga is presented in a less than professional manner, and the service and support available can be diabolical. As you rightly ask about the future of Amiga, I have to wonder what is in store when, on the rare occasion a professional does decide it is the right machine to use, that he runs into more frustration and costs than are tolerable.

By the way, we don't think PDraw is marvellous; we think it is adequate. And we have never said the A4000 is wonderful or powerful. It has reasonable speed, 8-bit colour and other goodies, but is not the ultimate or there wouldn't be a next generation, would there?

Faulty chips are OK as long as they are replaced quickly, and incompatibilities are OK as long as the buyer is told BEFORE he buys. However, it must also be said that reputations of professional, knowledgable dealers are tarnished by those who just want a quick sale. Unfortunately a few bad apples spoil the bunch. **-Ed.**

Dear Sir,

I am writing this letter as a concerned Amiga user who would like to express his opinions about the current state and the future of Commodore Amiga. I own an Amiga 500, and it has given me much pleasure, satisfaction and many good grades during high school. I am now at the University of Melbourne and my trusty Amiga is still at it, working away with a new lease of life with 1.2/2.05 ROM, thanks to a ROM switcher.

Well, how about the current state of Amiga affairs? Word is out that retargetable graphics or Display PostScript is scheduled to arrive in Workbench 4.0. What else would I like to see in Workbench 4.0? Built-in networking for starters. Not only should it support Amigas networked with other Amigas, but also Amigas with other platforms. There are a couple of things that should be standard on all Amigas. These include a DSP chip, AGA or AAA chipset in all machines (including the A600), large hard drives, at least a 68030, true 24-bit graphics, 16-bit sound, SCSI-II on high end machines, IDE on low end machines, stereo sound inputs, a CD-ROM (CDTV/CD^{32}) port on the low end machines (since they don't have SCSI) and networking AmigaNET ports.

Talking of hardware, everyone knows about Commodore's A2024 high resolution monitor. If Commodore releases a full colour version of this monitor, with multisync capabilities, it will have a hit on its hands. Commodore also has to release a version of the CD^{32} which can be plugged into the SCSI, parallel or serial port of any Amiga! An internal version should also be released for the 2000, 3000T, 4000 and the up and coming 4000T.

It's time to talk about software. The Amiga OS is improving all the time, but of course there is always room for improvement, so it's about time we got AmigaGuide. It should be part of the OS offering help on any Amiga topic. It should also be supported by all Amiga programs. It will make the Amiga a better platform. Other aesthetic changes should include a 640x512 Workbench screen, instead of the current 640x256 medium resolution, and also better 3D definition of icons and gadgets on the Workbench, by using different shades of grey and black around them for improved looks. If Amiga is to be taken seriously, it has to get its software up to or to surpass the standard of the software on other platforms. What Commodore should do is look at all the software released for the Amiga and put a little sticker on the box on programs that comply with all the standards set by Commodore, such as ASL requesters and multitasking. Games should not be excluded.

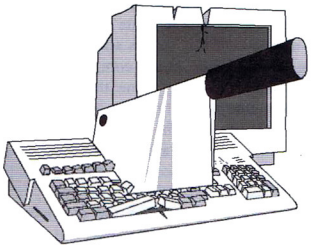
Commodore's marketing is improving, but it has to get better. It needs to target general PC magazines like BYTE and general print media such as large newspapers and general lifestyle, teenage, music and video magazines.

Finally I would like to comment on the quality of your magazine. I think it is top class. Definitely better than ACAR. I believe it will one day surpass the likes of Amiga World, which many believe is "the Amiga magazine".

Mike Papasimeon
Melbourne, Australia

Some very interesting comments, Mike. I hope some of the right people read this.

Thanks for your comments on ADU. We think it is, we know we are and we hope so too. **-Ed.** ■



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

HELP! KEY

We are unable to publish all the letters we receive, but if you have a question on any Amiga-related subject, or an answer to a question printed here, send it to:
Help Key, c/- ADU
(see page 10 for address.)

Sound Advice

Everyone talks about converting graphics from one format to another. Whether it be JPEG, TIFF, GIF or EPS, everyone knows how it should be done, and what to use to do it. What about sound, then? Is it possible to take a sound module from a PC (say a .WAV file) and use it on the Amiga? If so how?

Ken Woodward, New Lambton, Australia.

There is a Public Domain program called SoundZap which converts a number of different sound file formats into Amiga 8SVX format. Also available is AmiSox (via FTP from AmiNet), the Amiga version of the Sound-Exchange program, which will convert to and from just about any format known to man.

Peter Morrison.

Amy PD Disk

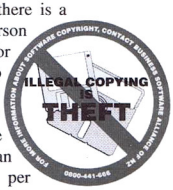
Amy PD Review on the latest ADU subscriber disk gurus my A1200, no matter what screenmode or chipset emulation I boot up with. I note that it was tested ONLY with WB1.3! Don't you think that all magazine disks should work with all Amiga OS versions?

Trevor Parker, Ballina, Australia.

You are correct on two counts, Trevor. The Amy PD disk won't boot on the A1200 and it should be compatible with all OS versions. We tested it with WB1.3 and WB2.1, but our WB3.0 machine was not available at the time and we assumed there would be no problems. It was quickly brought to our attention by a local reader and, upon investigation, we discovered that it is one of the DPaint files that doesn't like WB3.0. When the disk boots, there is an ADU title screen created by us in Ham mode. It is a DPaint file but contains a chunk not recognised by WB3. In order to make the disk boot, do the following: delete the ADUpic file on the disk and then clone the file named FrontPage with the new name of ADUpic. As this file is OK under WB3.0, the disk will boot. You must have a Magnetic Pages graphic file named ADUpic, so make sure you clone the FrontPage file.

Ed.

Piracy



I know that over in England there is a reward for "dobbing" in a person to the F.A.S.T organisation (for software piracy). I happen to know a pretty bad pirate who gets his stuff from overseas by modem and I happen to be poor. The only games I can afford are through him ($6 per disk). If there is an NZ organisation offering rewards (like F.A.S.T), I would be very happy to "dob" him in and wipe all my pirated disks.

Name withheld.

There is no legislation in New Zealand at this moment regarding software piracy — an organisation called the Business Software Alliance can field any enquiries, however, if you telephone their hotline on 0800 101 800. If you are feeling a strong sense of community spirit, they would be happy to take your call. Sorry no rewards! Their aim is to curtail business software piracy and games are currently excluded from interest, mainly because the manufacturers have yet to join the alliance. (No information was available for Australia at time of going to press. However any reports should be directed through the police.)

Ed.

EGS Developer

I am currently a fledgling assembler programmer (a very inexperienced one at that) and was interested in the potential uses of the EGS libraries. Unfortunately, I have not been able to find them or their documentation in any Bulletin Boards that have PD areas. I was wondering if you could give me an address of some organisation which could provide them?

Timothy Eyre, Pukekohe, New Zealand.

The EGS libraries, autodocs, and includes are all available from the GVP Bulletin Board in the USA (+1-215-337-5815, 24 hours, settings: 8,N,1). Unfortunately, this requires a lengthy toll call, since the archive size is in the order of 900 Kb! Also, EGS includes are available somewhere on InterNet (that's where I got them: "somewhere"...), but the libraries and other binaries are not.

Peter Morrison.

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Has Blitz Been Blitzed?

I would like to raise the following points: 1. What happened to your section on Blitz Basic 2? 2. I've got a really old "Super 5-CP80" printer and I was wondering (if you have heard of it), what printer driver I should use?

Jason Le Vaillant, Waharoa, New Zealand.

Never fear, the Blitz Basic section will return when Simon Armstrong has time to write it, between new games launches and development. On your second question, Super 5 printers are Epson-compatible, so use the EpsonX Preferences printer driver. Most dot matrix printers are Epson-compatible, whether 9-pin or 24-pin.

Ed.

Printer Driver

I have an OKI Microline 172 9-pin printer but cannot find a driver for it. Do you know if one is available?

David Rae, Gulgong, Australia.

According to the OKI agents your printer is standard Epson driver-compatible, so try the EpsonX driver 9-pin, or failing that, the EpsonQ 24-pin driver should do the job.

Ed.

Video Conversion

Is 1000 x 1000 on monitor translated to a better image on video tape than 600 x 400? Can a Panasonic MX12 Mixer be converted for Chroma key?

A.D. Smythe, Morayfield, Qld, Australia.

No, the scan frequency of a video signal is too low. Contact your local Panasonic dealer for information about the MX12 specifically. There is Chroma keying equipment available for the Amiga which may do the job.

Anthony Smith.

It Came From The Desert

In response to Craig Munro of Ashburton, who made a query in ADU 5 about how to beat the ants in the game "It Came From The Desert", I have successfully completed the game by doing the following: waiting until day 8, phoning the weather station, if the temperature is going to be hot, that means the entrance to the ants' nest is going to be open for long periods of time, giving you the opportunity to enter and destroy the queen ant. To locate the nest, fly a plane from the airport to the southern crater, (following the roads is the best way), or jump in a tank and drive down. The ants' nest is south of the crater, so land your plane on the dirt road running to the crater and walk south. You will see the ants crawling out of the nest, and if the hole is staying open for long enough after an ant comes out, go in. Once inside, use the flame thrower which you are automatically given, to burn the ants, and go through the inter-connecting holes. This may take a bit of experimenting, until you find the queen ant. You automatically place an explosive under her; you'll hear a ticking sound when the explosive is set and placed. Then haul butt out of the hole!

Bill Tremayne, Rotorua, New Zealand.

Cover Disk

I bought a copy of "Amiga Computing" which contained a cover disk called Personal Finance Manager which I find really good, but to get the full potential out of it, I need a copy of the manual. Could you tell me where I can get a copy or do I have to send overseas to Microdeal Ltd, who distribute it in the UK?

Jason Lee-Leong, Paddington, Qld, Aus.

Cover disk programs are generally for promotional purposes so that you will buy the full version. If a local dealer can't upgrade for you, contact the manufacturer or publisher direct.

Ed.

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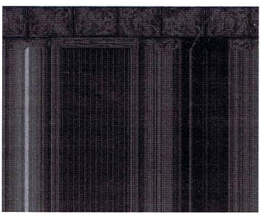
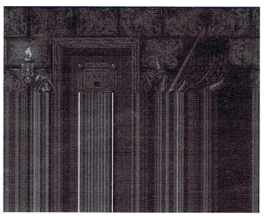
AMAZING FX Copper Tricks

by Ray Abram

MANY WILL BE familiar with the effect in demos or computer presentations, where a picture appears to flow or be "poured" on to the screen, or where the base of the screen reflects the image above it. If you want the inside story on these two techniques, be prepared to see the amazing, as I show you how Amos can achieve them with the greatest of ease...

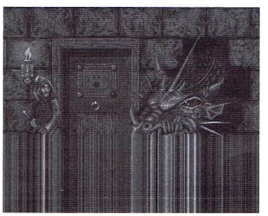




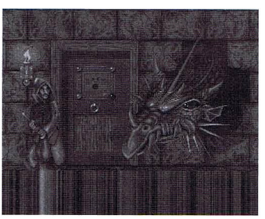
Get Real!

Before you say that this is impossible in Amos, think again. With a little hacking into Amos's Copper list, and guidance on how to program the Amiga's Copper list, you can very easily achieve the tricks in this issue.

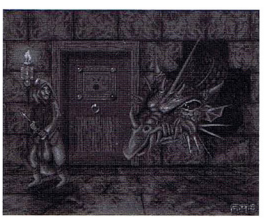
Those sceptical as to the speed of achieving these effects should note that both are direct manipulations of the information stored in Amos's Copper list (a list of commands that tell the Amiga's hardware what to display). Little work is actually done by Amos to maintain these effects, which are therefore performed with great speed — probably much the same as the equivalent machine code routines.



Over past issues, I have explained how a screen on your Amiga is actually made up i.e., colours, bitplanes (or layers) etc., which are combined by the Amiga's graphics hardware to produce what is shown on your monitor.



We now need to understand how the information (stored as bytes), indicated by the bitplane pointers, is stored in Chip RAM. (Note: The following information is specific to Amos and could differ for Workbench.)



Brassing Off The Copper

As the screen's data is sent out to the monitor (stored scan line by scan line), the bitplanes are incre-

```
Rem==============================
Rem=        Flow Effect          =
Rem=                             =
Rem=        By  Ray Abram        =
Rem=                  (C)1994 =
Rem==============================

Rem Get Picture to Use
Rem *** Reference 1
Screen Close 0
Load Iff"Picture.iff",0
Wait 2

Rem get start of copper list in memory
Rem *** Reference 2
Copper Off
Cop Swap
COP_END=Cop Logic
Copper On

Rem find end of copper list in memory
Rem *** Reference 3
Repeat
   Add COP_END,4
Until(Leek(COP_END) and $FFFF0000)=$1BE0000
Add COP_END,4

Rem remember where the cop wait command in the copper list is
Rem *** Reference 4
COP_WAIT=COP_END
Add COP_END,4

Rem get amos's wait command
HERE=Leek(COP_END-4)

Rem now poke in new modulus value
Rem *** Reference 5
Wait Vbl
SKIP=Screen Width/8
Doke COP_END,$108
Add COP_END,2
Doke COP_END,-SKIP
Add COP_END,2
Doke COP_END,$10A
Add COP_END,2
Doke COP_END,-SKIP
Add COP_END,2

Rem now put the amos end of copper list back into the copper list
Rem *** Reference 6
Loke COP_END,HERE
Add COP_END,4
Loke COP_END,$960100
Add COP_END,4
Loke COP_END,$1800000
Add COP_END,4
Loke COP_END,$FFFFFFFE : Rem end of copper list command

Rem get bottom y position of the screen
Rem *** Reference 7
HERE=HERE and $FF000000
Ror.l 24,HERE

Rem kill mouse
Hide

Do
   Rem flow effect
   Rem grunt routine
   Rem  => continuously change 1 (yes 1) byte of memory !!!
   Rem *** Reference 8
   For Y=Y Hard(0) To HERE-1
      Wait Vbl
      Wait Vbl
      Poke COP_WAIT,Y
   Next

   Rem end of effect keys
   Rem *** Reference 9
   While Mouse Key=0 : Wend
   If Mouse Key=2 Then End
Loop
```

mented, ready to point to the next byte of information to be drawn on the monitor. This process is repeated until the scan line on the monitor is complete. At this point a skip amount or modulus (utilised by our trick) is added to the current value of the bitplane pointers, to prepare for the data of the next scan line. In Amos, this skip value is usually 0, but adjustment of commands such as Screen Offset and Screen Display changes the value, to allow, for instance, small subregions of larger screens to be shown.

This effect also utilises the Copper WAIT command, which tells the Copper to continue drawing the data on the monitor with the current set-up, but to wait until a certain position on the monitor is reached, before the execution of the Copper list is continued. This command is commonly used to wait for a certain position on the monitor to be reached (i.e., the top of a screen), before the screen data starts to be drawn on the monitor.

If this seems complicated, don't worry too much — you can still enjoy the effects.

The Screen Flow Effect (Program 1)

The idea behind this effect is:

First Loop: First scan line is copied down the screen.

Second Loop: First scan line is left alone. Second scan line is copied down the screen.

Third Loop: First and second scan lines are left alone. Third scan line is copied down the screen, etc.

Go Slow

You could be forgiven for thinking that the Screen Copy command will produce this effect. This assumption could be correct if we wanted the effect to be carried out slowly — and we definitely don't want to perpetuate the rumour that Amos is slow! We therefore need a way to produce the effect super-fast, with a super-smooth result.

How? This effect needs a picture — any will do, be it Ham, extra halfbrite, hi-res or lo-res. The only limitation is that if the image is greater than 200 pixels in height, anything over the 200th scan line is chopped off. (As Amos is written for ECS, this effect cannot use AGA pictures). The picture is loaded in at Program 1, Reference 1.

As previously mentioned, the whole effect consists of hacking into Amos's Copper list. Why? For the simple reason that Amos was not designed to allow this sort of trick with that list.

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```
Rem================================
Rem=       Mirror Effect          =
Rem=        By  Ray Abram         =
Rem=                    (C)1994 =
Rem================================

Rem Open the Main Screen for this Demo
Screen Open 0,320,183,8,Lowres
Paper 0 : Curs Off : Flash Off : Cls

Rem Set up my palette   blue green red
Palette 0,$F,$F0,$FF,$F00,$F0F,$FF0,$FFF
Wait 3 : Rem Let screen fully open !!!

Rem Get the physical bottom of the Main Screen
Rem *** Reference 1
Y_SC=Y Hard(0)
Y_BOT=Y_SC+Screen Height

Rem Set up the Second Screen
Rem *** Reference 2
Screen Clone 1
Screen Display 1,,Y_BOT,,Screen Height/2
Screen Offset 1,,Screen Height-1
Screen 0
Wait 5

Rem Get start of copper list in memory
Copper Off
Cop Swap
COP_MOD=Cop Logic
Copper On
Rem kill mouse
Hide

Rem find the 2nd MODULO command in copper list
Rem *** Reference 3
For FIND=1 To 2
   Repeat
      Add COP_MOD,4
   Until(Leek(COP_MOD) and $FFFF0000)=$1080000
Next

Rem Poke in a modulo to flip the screen and half height
Rem *** Reference 4
SCALE=3
MD=-((Screen Width/8)*SCALE)
Wait Vbl
Doke COP_MOD+2,MD : Rem odd modulus
Doke COP_MOD+6,MD : Rem even modulus

Rem *** The Red Green Blue Spot Light Demo ***
Rem *** Reference 5
Rem pre-calculations
'Pen 1
'Locate 0,10
'Centre "Calculating Sin and Cos  0 -> 360"
Degree
Dim SN(360),CS(360)
For DEG=0 To 360
   SN(DEG)=Sin(DEG)*$FFFF
   CS(DEG)=Cos(DEG)*$FFFF
Next

Rem draw the image
RAD=45 : Ink 7 : Pen 7 : Paper 0 : Cls
Circle RAD,RAD,RAD
Paint RAD,RAD
Rem get the image
Get Bob 1,0,0 To RAD*2+1,RAD*2+1
Hot Spot 1,RAD,RAD : Cls : Wait 5

Double Buffer : Rem Set up double buffering
Rem Set up bobs
Make Mask 1
PLANES=%100
For BB=1 To 3
   Set Bob BB,0,PLANES,%11001010 : Rem most important command
   Ror.l 1,PLANES
   Bob BB,1,-RAD,1
   Wait 5
Next

Rem move the bobs around in a circle
B_RAD=Screen Height/4
XOFF=Screen Width/2
YOFF=Screen Height/2
B1_ADD=-2 : B2_ADD=2 : B3_ADD=4 : Rem Must be a multiple of 360
B1_DEG=0 :  B2_DEG=120 : B3_DEG=240

Do
   Rem position the bobs
   Bob 1,(B_RAD*SN(B1_DEG))/$FFFF+XOFF,(B_RAD*CS(B1_DEG))/$FFFF+YOFF,1
   Bob 2,(B_RAD*SN(B2_DEG))/$FFFF+XOFF,(B_RAD*CS(B2_DEG))/$FFFF+YOFF,1
   Bob 3,(B_RAD*SN(B3_DEG))/$FFFF+XOFF,(B_RAD*CS(B3_DEG))/$FFFF+YOFF,1

   Rem calc. next bob positions
   Add B1_DEG,B1_ADD,0 To 360
   Add B2_DEG,B2_ADD,0 To 360
   Add B3_DEG,B3_ADD,0 To 360

   Rem bounce the blue circle
   If B3_DEG=360 Then B3_ADD=-B3_ADD

   Rem see if user wants to quit
   If Mouse Key Then Exit

   Rem make movement smooth
   Wait Vbl
Loop
```

Continued on page 50

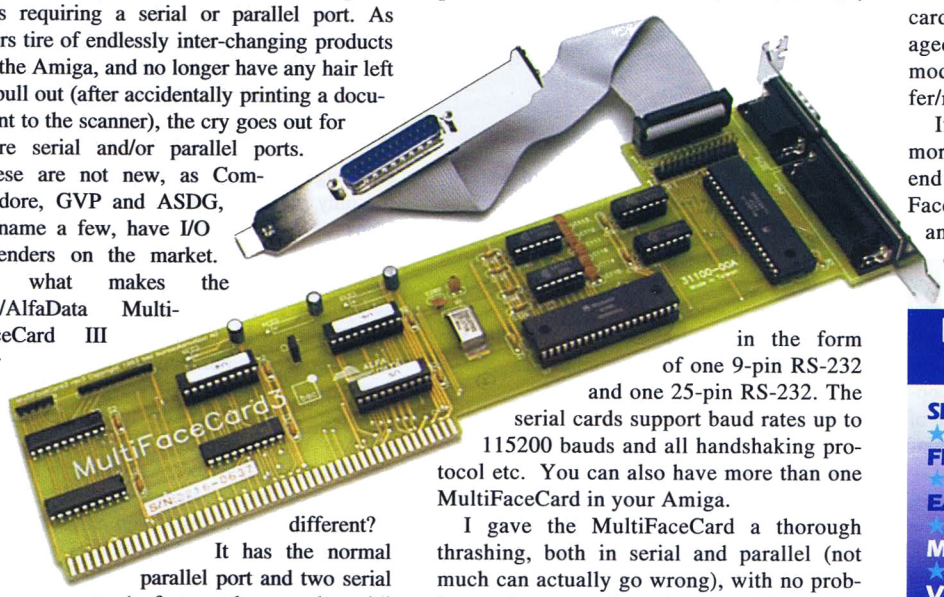
From the combination of bsc büroautomation and AlfaData comes an I/O extender card featuring an extra serial and parallel port for your Amiga. ***Zane Hemingway*** *sets the phone lines alight with...*

MultiFaceCard III

bsc/AlfaData ■ Germany

ADU APPROVED

WITH EVER-INCREASING technology, the average Amiga user is inundated with products requiring a serial or parallel port. As users tire of endlessly inter-changing products on the Amiga, and no longer have any hair left to pull out (after accidentally printing a document to the scanner), the cry goes out for more serial and/or parallel ports. These are not new, as Commodore, GVP and ASDG, to name a few, have I/O extenders on the market. So what makes the bsc/AlfaData MultiFaceCard III any different?



It has the normal parallel port and two serial ports (unfortunately, not the midi port of the GVP I/O extender), one of which is a 25-pin, which eliminates an adaptor plug.

But I have to say that the MultiFaceCard III has become my favourite I/O extender card, in place of the GVP I/O extender. Not so much for the features, (as the GVP product has the extra midi port and serial buffers capable of buffering to 16 Kb, rather than the MultiFaceCard's 4 Kb), but rather for the manual. YES, the manual. I have never come across such a well written and helpful manual, unlike its GVP counterpart, which basically says plug this in and adjust the Prefs. The MultiFaceCard manual goes much further, providing helpful tips and hints on how to get programs working: it even goes so far as to give examples on using favourite programs like Term, PageStream and scanning software.

Software received with the card includes a copy of ParNet that works with the MultiFaceCard (unsupported by other I/O cards), mapping devices and the usual Preference settings. Other software includes Install, which installs, removes, and sets up device drivers; Duart Prefs, which allow you to set parity, baud rate, handshaking, and buffer size; and MapDevice, which lets you remap your ports to the MultiFaceCard. To print out a device attached to Mf select PIT0: device, instead of PAR: device. As easy as that.

Technically, the MultiFaceCard has one parallel interface and two serial interfaces, in the form of one 9-pin RS-232 and one 25-pin RS-232. The serial cards support baud rates up to 115200 bauds and all handshaking protocol etc. You can also have more than one MultiFaceCard in your Amiga.

I gave the MultiFaceCard a thorough thrashing, both in serial and parallel (not much can actually go wrong), with no problems whatsoever in using any of the features. In the area of communications, I gave the card to our local BBS to run its extra two nodes on. Although the buffering on the card is only 4 Kb, the MultiFaceCard managed to run the extra two supra 14.4k modems on the BBS, with no transfer/receive errors resulting.

If you suddenly find yourself in need of more ports to hang bits and pieces off the end of your Amiga computer, the MultiFaceCard, in my book, is the only option, and at NZ$299/A$245, there really is no other solution. ■

Supplied for review by Ami-Tech

MULTIFACECARD III
NZ$299 A$245

SPEED	★★★★☆
FEATURES	★★★★★
EASE OF USE	★★★★★
MANUAL	★★★★★
VALUE	★★★★★

OCS / 1.3 ✗
ECS / 2.0 ✓
AGA / 3.0 ✓

92%

From the makers of GigaMem comes a hard drive controller set to shake Commodore's 2091 from its niche in the marketplace. ***Zane Hemingway*** *revs up a few expensive hard drives to test...*

Oktagon2008

bsc/AlfaData ■ Germany

AS THE NAME indicates, this card has its origins in Germany (the first half of the manual in German is a dead giveaway).

The Oktagon2008 is a SCSI controller and RAM card for the A2000 and A4000. It also works in the A3000, where it is slightly redundant, as that already has a SCSI controller. Although the box proclaims a SCSI-II controller, performance belies this. According to SysInfo, the Oktagon will give the same drive speeds as the A3000 — about 2 Mb per second. This is definitely below SCSI-II speeds. We should know — we have one. The statement further down on the box — "supports SCSI-2 commands" — sounds better. So while the Oktagon isn't a SCSI-II controller, it does support SCSI-II commands, which means you can connect SCSI-II hard drives to it. Good enough for the product and price.

The hard drives can be mounted on the card itself, saving that HD bay for your CD-ROM, or something equally important. SCSI cabling and power cable are supplied.

Memory, Too!

The Oktagon2008 will also accept up to 8 Mb of 16-bit Fast RAM. Great for the A2000, but I wouldn't bother in an A4000.

Continued on page 69

Resident graphics guru ***Peter Morrison*** *reviews the latest release of the most versatile image-processing package available for the Amiga...*

ImageFX 1.5

Great Valley Products ■ USA

ADU APPROVED

IMAGE PROCESSING IS a larger field than most people might think. Simple paint programs are, in a limited fashion, image processors, but all processing has to be done in a pixel-by-pixel fashion by the user. Very few paint programs offer a resizing facility, or global composition features. In my opinion, to be a true image processor, a program should include a host of operators, the ability to load and save many different file formats, and a facility to filter the image in some way.

Enter, ImageFX

Such a program is ImageFX, now in revision 1.5, from GVP and Nova Design. Introduced not so much as a competitor for ASDG's popular Art Department Professional, but more of a complete replacement for the paint-program-plus-ADPro combination.

A relative newcomer to the image-processing scene, ImageFX is more like a turbo-charged paint program than a "traditional" image processor. All paint functions operate in a 24-bit colourspace, and the final image can be rendered to any Amiga-displayable mode, or saved in a variety of true-colour formats.

Any possible combination of image-processing functions is available, some at the click of a button, some at the drag of a slider, and other, more esoteric functions, can be duplicated with skill and cunning, via the ARexx interface. In my experience with ImageFX, there has not been a single function that I have needed that I could not access directly, let alone by having to resort to the lower levels of ARexx programming.

First Look

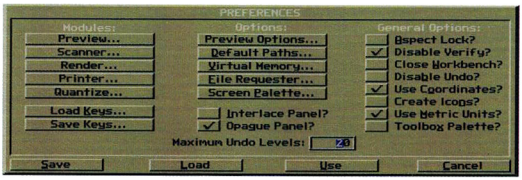
ImageFX opens two screens: a preview screen, which displays the current image, and the ImageFX screen, which holds the toolbox. There are two problems with this approach. When using graphics cards that do not support the concept of screen dragging, the ImageFX screen, which normally opens near the bottom of the display (sufficient to show all the gadgets, and no more), is forced to the top of the display, concealing the preview screen. Also, when running without one of these problematic cards, any visitor windows opening on the ImageFX main screen (system requesters, for example) usually open on a part of the screen which is not visible. On a number of occasions, I have caused ImageFX to crash, and sat around, staring at the wall, waiting for it to do something, not realising that there is a "suspend/reboot" requester dangling out of sight, below the bottom of the monitor display.

When ImageFX is installed, the default configuration is to run with an Amiga screen as a preview screen. The completely modular design of ImageFX means that this is not the only option available, and the first thing many users will do when running ImageFX for the first time is to spend a large amount of time setting up all the Preferences. Almost everything is configurable, from the default modules and paths, to the screen colours and layout of the toolbox gadgets themselves (for power users only, this one!)

Modularity is the key to the continuing success of ImageFX. When the EGS-Spectrum was released, it came with a set of render modules for ImageFX. Similarly, the Retina, IV24, and OpalVision cards. None of these cards is designed by Nova Design, yet they all integrate seamlessly with the ImageFX interface. Modules exist for the preview screen, the loader and saver functions, rendering, scanning, and printing. To integrate a new scanner, say, into the ImageFX environment, all that is required is to copy the scanner module into the right directory, load ImageFX, and configure the Scanner Preferences section to use the new file. Simple!

Teamed with this modularity, the other basic concept behind ImageFX is openness. All the image-processing functions are either self-explanatory, or can be looked up in the manual. A few of the more exotic effects are best left to the professionals, but in the main, the twiddling and tweaking of the image is encouraged by the interface. Multiple levels of undo are now supported! (Ever undone a complete picture, pixel by pixel? I've never been that bored myself, personally, but I'm sure it can be done!)

If clicking buttons and dragging sliders does not appeal, ImageFX features a command Shell, which is a direct ARexx interface to the program. All the commands ImageFX supports are available from this Shell, even those that shouldn't be. "Quit" brings up a window that asks you to close the command Shell before quitting, while "Iconify" puts ImageFX into an infinite loop: ImageFX will not iconify its screen while there is a window open on it (the command Shell), and the com-



The ImageFX Prefs window: instant control over everything from VMem to Verifies.

mand Shell will not go away until ImageFX has iconified itself! Running ImageFX from the Workbench avoids this loop, and allows you to interface with ImageFX when it is iconified.

Preview From The Mullock Heap

At ADU, I use ImageFX 1.5, running with the OpalVision 24-bit graphics card on an A4000 with 28 Mb of main memory, and 100 Mb of virtual memory. Although ImageFX has its own brand of virtual memory, it proves to be slower than using GigaMem to handle it all. (This observation comes from my specific environment only — your mileage may vary!)

Virtual memory is a difficult thing to implement, since it cannot be assumed that the machine it is running on has an MMU, or other memory management hardware. The programmers behind ImageFX have chosen the harder path, so that users without 68030/040 processors (or those with EC versions) can still enjoy the ability to load and work on huge images. Every single access of memory must be checked by the software, rather than just going ahead — this checking can slow things down to an absolute crawl, if badly programmed, but ImageFX flies through memory swaps with transparent ease.

ImageFX works spectacularly well with the OpalVision graphics board (and a number of other 24-bit frame buffers, though I can only really speak with authority on the IV24, in addition to OpalVision). The preview screen can be made a 24-bit OpalVision screen, on which every pixel of the image loaded appears in true colour. This is superb for image-manipulation, since the display is truly WYSIWYG. In fact, I prefer using ImageFX to OpalPaint, since the former can do almost everything in the field of painting functions that OpalPaint can do (given enough time), and also offers the image-processing features that simple painting programs do not.

Taking Command

When running on the Workbench screen, ImageFX becomes the equivalent of ADPro — the user cannot interactively affect any part of the image, but merely applies sequences of operations on the whole image, and renders the changes. One flaw in this is that the interactive "crop" operator is disabled; the only way to crop an image on the Workbench is to open the ImageFX command Shell, and manually type "crop xstart ystart xend yend" (filling in the numbers yourself).

This is not such a bad thing. The very existence of a command Shell opens up possibilities for all sorts of amazing one-line effects. Users preferring the keyboard over the mouse (these people exist; I have proof!) can control everything from this Shell, and the option of one-touch macros, and command binding means that supercharging the whole process of loading, touching up, and saving images is as easy as "shift-F1". The painting functions are even available from this Shell, but it is assumed that only a masochist would attempt to use them in this way. They exist to be used from ARexx scripts.

Manual Overdrive

The manual for ImageFX is a large, ringbound book with a hard cover. Printed in black and white, it is divided (though not separated) into sections covering ImageFX concepts, the ImageFX toolbox, CineMorph, ARexx, and the Appendices. The manual was not reprinted for the ImageFX 1.5 upgrade, though a comprehensive update booklet was provided. I would have preferred some extra pages to slot into the existing manual, but the online help system (just press help) makes the manual almost unnecessary. If I had a poster-size print of the ARexx section, I would not refer to the manual at all. *(And you could do something **useful** while you're staring at the wall! -Ed.)*

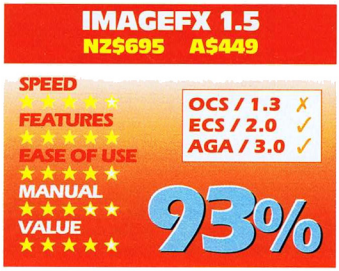
ADPro Takes A Dive

Image processing on the Amiga series of computers seemed like a promising field to get into, back in the days when its graphics were on the leading edge of those offered by home computers. Unfortunately, the Amiga range has been left behind by the latest 24-bit machines, and until the Amiga can boast 24-bit capability as standard, creating a state-of-the-art image processor will be an uphill battle. However, it is still considerably cheaper in terms of performance per dollar to get an Amiga with a 24-bit card (such as OpalVision) and ImageFX, than it is to get a 24-bit Mac with PhotoShop.

It must be said, that if your Amiga is unenhanced by any of the large and growing number of graphics cards on the market today, ImageFX is only really useful as an image processor, and not a paint program. Although ImageFX will preview in Amiga modes, it is next to impossible to do any serious retouching with it, since the quality of the preview is inadequate (although Ham8 on an AGA machine is approaching acceptability).

One of the huge advantages ImageFX has over ADPro is that if you have just loaded (or scanned, say) an image, and you see the tiniest of blemishes, it is the work of a moment in ImageFX to get rid of it, while in ADPro, you have to save the image in a format that your favourite blemish-splatter can read, and then swap to that program. The convenience of this is immeasurable, and, in fact, the paint and production tools that ImageFX boasts make it the one-stop graphic manipulation, touch-up, and rendition program that I'd choose over all others. ■

Supplied for review by GVP



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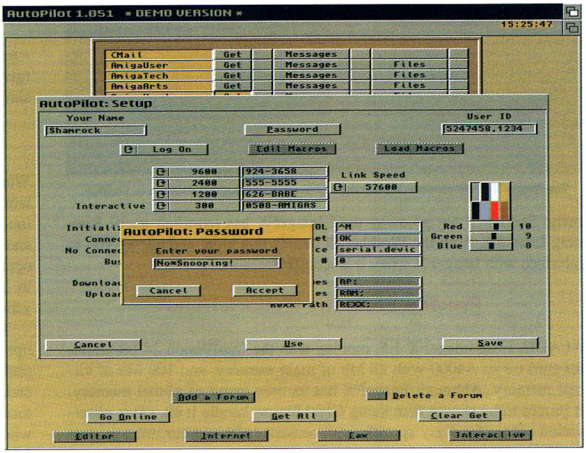
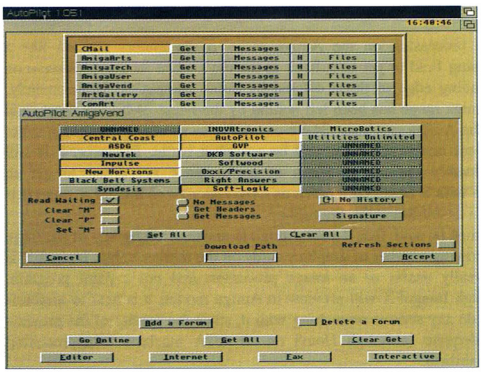


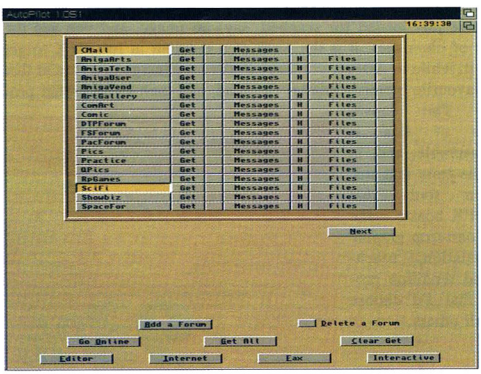
AutoPilot's initial screen: "Using AutoPilot is simplicity itself..."

AUTOPILOT IS AN automated, CompuServe navigation program, used for easy posting and retrieval of forum messages, handling of electronic mail, and downloading and uploading of files. All reading and replying is done offline, saving many dollars in connect time.

CompuServe is one of the largest, worldwide, computer information networks, with a membership of well over a million. At its simplest, it is divided into nearly 300 separate forum areas, catering for subjects from artificial intelligence to pets, chess, picture libraries, cars — the list is almost endless. Numerous computer support forums exist, and many manufacturers can be contacted through the service, which provides online access to over 1400 of the world's most used databases; regularly updated news and financial information services; even overseas airline and hotel booking facilities. People from all walks of life use CompuServe daily, be it for business or pleasure.

AutoPilot, created by Steve Ahlstrom, of Colorado, USA, is the successor to the program Whap! by Jim Nangano, and its message reader View! (also by Steve Ahlstrom). Amiga users who wanted Whap! to work with the FALNET access network ran into difficulties, specifically because of a parity compatibility error between the program and FALNET. Whap! worked correctly when used at a direct CompuServe node — unfortunately, this required a long overseas toll call, since the closest node was located in San Francisco, California. AutoPilot overcomes this unforeseen difficulty, finally giving Amiga users in New Zealand and Australia a reliable navigation program to access the resources of CompuServe.





Simply select the forums you wish to read, and AutoPilot will automagically log on and download your chosen files...

Flying High

The basic requirements for the program are Workbench 2.04 or above, at least 2 Mb of memory, and a hard disk. Running from floppy disks is not recommended, as it would slow the program to an unacceptable level.

AutoPilot can operate from any screenmode contained in your Devs/monitors drawer — anything from simple lo-res, to interlaced super hi-res. In resolution modes with a page size of less than 640x512, the entire main screen must be scrolled using the mouse, as trying to squeeze the amount of information that AutoPilot presents into a smaller screen would result in its becoming quite confusing. Screen colours are completely user-definable, up to a maximum of eight different shades.

When first downloaded and decompressed, the program you have is the "demo version" of AutoPilot. You can only access electronic mail, called CMail in the program, and the four Amiga-related forums. Other functions are also disabled. Registration is accomplished by using CompuServe's Software Registration (SWREG) feature, where the fee of US$69.95 (about NZ$140.00) is automatically added to your CompuServe usage bill. That may sound expensive, but many users say the program pays for itself in the first one or two months of use. The program is registered when you receive a "Magic CMail", which transforms your demo version of the program to the full operational version. Now as many forums as you require can be added, and all additional features are fully enabled.

As FALNET is an independent network and not a direct node, AutoPilot requires a logon script — a simple, ASCII data file which instructs the program how to sign on, to gain the first required prompt. Details on scripts (including the FALNET-specific script), can be found in the documentation.

First-time Pilots

Upon first running the program, you will be taken into the setup screen, where you must enter your name, CompuServe ID number, password, access telephone numbers, and system requirements. When you first go online into CompuServe, AutoPilot will perform its initial setup phase, changing some of the CompuServe options required to make the program work properly. It will then go into each forum you have selected, extracting all the message and library sections, before signing off. If you look at each forum on the main screen, you will see that the program has stored the section names.

Using AutoPilot is simplicity itself, as the whole program is controlled with the mouse or appropriate keyboard equivalents. Simply select the forums you wish to look at, and

AutoPilot will sign on to FALNET, send your CompuServe ID number and password, and proceed to visit each selected forum to retrieve new message headers or download files — all with a single mouse click. Once new message headers are retrieved from all selected forums, the program will exit CompuServe and allow you to choose which messages you wish to look at. Upon signing on again, they will be downloaded to your computer and saved on disk, leaving you to review them offline.

Sending and replying is just as easy. Your message is merely typed in the usual manner, then saved. When next online, AutoPilot will automatically send it to the right place. If you collect a large number of messages, they can be read after you are signed off, replied to individually, and the replies will all be sent together, saving valuable online time.

It is also possible for AutoPilot to send Internet mail and facsimile messages. For frequently-used ID numbers, AutoPilot has an Address Book, which stores all details required for "point-and-click" sending of electronic mail.

Downloading of files is done by first building a catalogue of files, then selecting those you wish offline. AutoPilot will then download the file to your machine using the fast CompuServe B+ protocol.

CompuServe's conferencing feature is available through AutoPilot, through a built-in terminal program called HandsOn, which can be controlled by the scripting language ARexx. This allows you to type short messages to other users in realtime, although you are required to stay online. A recent addition to this mode is online viewing of GIF (Graphics Interchange Format) image files, used by the WEAther and TREND areas for displaying graphical data. The viewed image can then be saved or discarded.

"CompuServe is one of the largest, worldwide, computer information networks, with a membership of well over a million."

Acquisition

Currently at Version 1.061, with updated versions being released all the time, AutoPilot has been proved reliable by many Amiga users throughout the world. ***Note:*** *Do not attempt to use a file compressor such as PowerPacker on the demo version of AutoPilot. This will render the program unable to alter itself into the full version when the registration CMail is received.*

AutoPilot is available for download from the AmigaVendor forum, Library 9 (AutoPilot), under the filename AP.LHA. The large and comprehensive documentation file is obtainable separately from the same area. All questions requesting help in running AutoPilot and solving problems should be placed in the AmigaVendor Forum, Section 9. Support questions will not be answered via CMail. All questions related to registration of the program must be in the form of CMail addressed to AForums, ID number 75300,1641. Registration questions will not be answered in the forum.

CompuServe Pacific can be contacted in New Zealand on 0800-446-113 for details about joining. ■

SUBSCRIBERS

The demo version of AutoPilot is included on your PD Disk!

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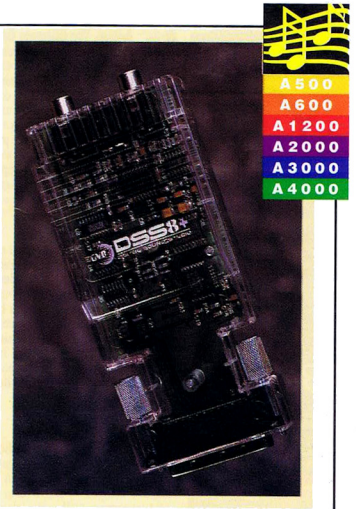

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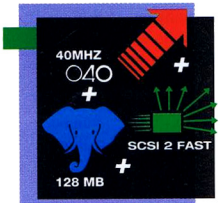

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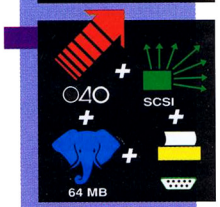

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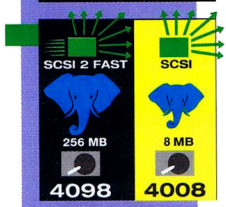

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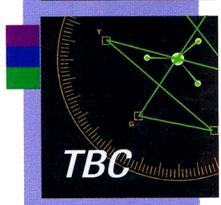

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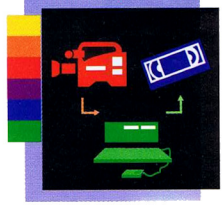

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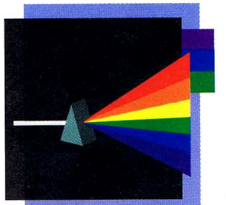

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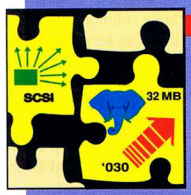

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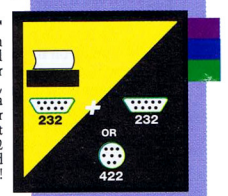

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1 "Get a Still Life" (640x256) was painted in DPaint IV's 256-colour mode by Peter Toth (NZ) of Cyberia.

2,5 "Taps" (1472x566) and "Doric Columns" (736x566) were created by Dylan Nelson (Aus) using Real 3D v2 on a 6 Mb A1200 with GVP 030 accelerator.

3 Matthew Buchanan (NZ) created this image (724x566) using Imagine 2.0 on a 14 Mb A3000.

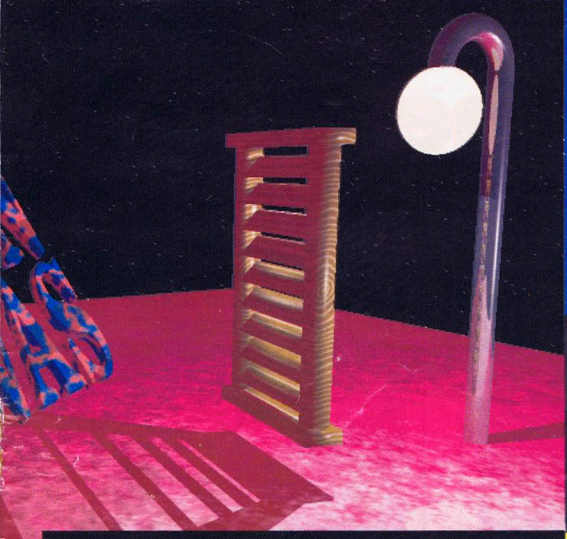
4 "The Hacker" (440x410) was created by Mike Hazlett of T3D on a 5 Mb A2000 using Imagine 2.0, DPaint IV and Tim Wilson's Cycle-Man.

6 "Leica" (704x568) was created by J Williams (NZ) using Imagine 2.0 on a 6 Mb A2000 with GVP 030 accelerator.

7,8 "My Room" and "Virtual Patriotism" (both 640x512) were created by Stewart Cowan (NZ) on an unexpanded A1200 using Imagine 2.0.

2

5



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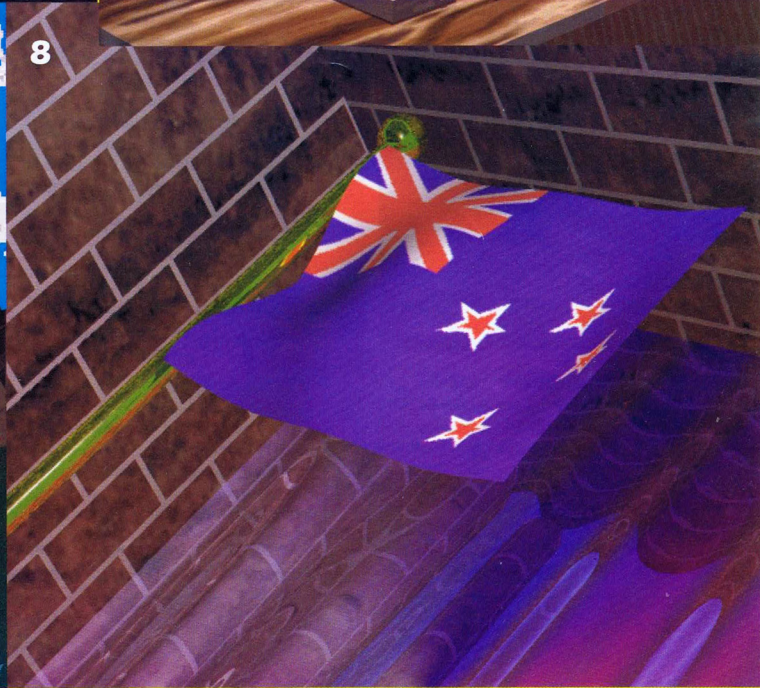

8

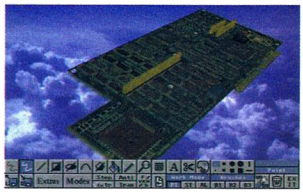
ADU APPROVED

Best of the Best...

After seven issues, we've reviewed several products worthy of a 90% plus rating. As newer, better products are released, our subjective scoring of the products we've already seen will no doubt change. Here's an up-to-date summary from each of our product reviewers — the best products from the pages of ADU so far...

OpalPaint v2.1

Opal Technology ■ Australia



Unfortunately available only to owners of OpalVision cards, OpalPaint (reviewed ADU 3) remains one of the fastest and best 24-bit paint packages available on the Amiga market. Simply superb.

Speed ★★★★★ **Ease of Use** ★★★★★
Features ★★★★★ **Manual** ★★★★☆

94%

Brilliance

Digital Creations ■ USA

Hindered only by a rather annoying dongle and the fact that it was not first on the Amiga paint/animation scene, Brilliance (reviewed ADU 5) has everything over its major rival, DeluxePaint IV, most noticeably its vastly superior interface and unparalleled animation controls.

Speed ★★★★☆ **Ease of Use** ★★★★★
Features ★★★★★ **Manual** ★★★★★

93%

TV Paint 2 Professional

MacroSystemUS ■ USA

With its multi-platform capability, TV Paint Pro (reviewed ADU 7) is 24-bit painting at its best. A fast, intuitive interface and loads of modes and macros.

Speed ★★★★★
Features ★★★★☆
Ease of Use ★★★★★
Manual ★★★☆☆

95%

Real 3D v2

RealSoft KY ■ Finland

Redefining the standard in 3D Amiga graphics, Real 3D v2 (reviewed ADU 4) is unmatched for object modelling and real-world environment simulation. Exceptional power is marred only by an exceptionally steep learning curve.

Speed ★★★★☆
Features ★★★★★
Ease of Use ★★★★☆
Manual ★★★★☆

93%

EGS-28/24 Spectrum

Great Valley Products ■ USA

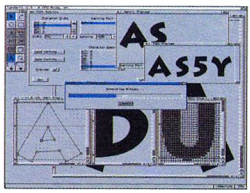
A 24-bit Zorro II/Zorro III graphics enhancer, the Spectrum (reviewed ADU 6) provides a true one-monitor solution by way of its Amiga-mode pass-through port. Fast and OS-compliant, this is the best card we've seen.

Speed ★★★★★ **Ease of Use** ★★★★☆
Features ★★★★★ **Manual** ★★★★☆

95%

TypeSmith 2.0

Soft-Logik ■ USA



An invaluable tool for anyone in the publishing industry, TypeSmith 2.0 (reviewed ADU 7) is the only creation and conversion utility for outline fonts on the Amiga. Version 2 includes wide support for outline formats, as well as bitmap editing capabilities.

Speed ★★★★☆ **Ease of Use** ★★★★★
Features ★★★★☆ **Manual** ★★★★★

91%

Technosound Turbo 2

New Dimensions ■ Australia

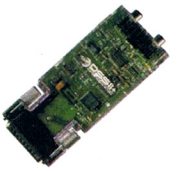
With the Technosound Turbo 2 (reviewed ADU 6), the recording of sound samples and their modification using an ear-busting range of special effects, is a total breeze.

Speed ★★★★★ **Ease of Use** ★★★★☆
Features ★★★★★ **Manual** ★★★★☆

90%

DSS8+

Great Valley Products ■ USA



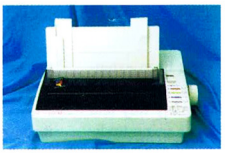
The DSS8+ (reviewed ADU 4), GVP's top-of-the-line, 8-bit sound sampler proved a hit, complete with its sexy, transparent case and software-controlled gain facility.

Speed ★★★★★ **Ease of Use** ★★★★☆
Features ★★★★☆ **Manual** ★★★★☆

90%

GSX-190

Citizen ■ JAPAN



The best of the 9-pin printers reviewed in ADU 3, Citizen's GSX-190 is absolutely the most user-friendly dot matrix available today. Citizen tell us that their new range is well on its way...

Speed ★★★★☆ **Ease of Use** ★★★★★
Features ★★★★☆ **Manual** ★★★★☆

90%

Humanoid

Crestline Software Publishing ■ USA

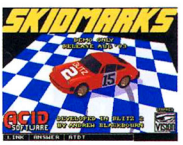
Humanoid (reviewed ADU 5), by the Anti-Gravity Workshop's Tim Wilson, is a masterfully-designed collection of human objects for use with the Cycle editor of Imagine, which includes several morphable facial poses ranging from joy to rage.

Ease of Use ★★★★☆
Features ★★★★★ **Manual** ★★★★★

97%

Blitz Basic 2

Acid Software ■ NZ



The language responsible for success stories like SkidMarks, Blitz Basic 2 (reviewed ADU 5) is lightning fast and packed with features. It comes complete with compiler and allows easy access to both Intuition and the Amiga's hardware.

Speed ★★★★★ **Ease of Use** ★★★☆☆
Features ★★★★☆ **Manual** ★★★★☆

90%

Amos Professional

EuroPress Software ■ UK

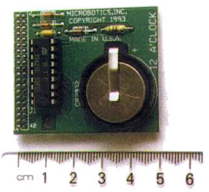
A derivative of the Basic programming language, Amos Professional's (reviewed ADU 3) strengths lie in animation, courtesy of its included AMAL language. Very user-friendly.

Speed ★★★★☆ **Ease of Use** ★★★★★
Features ★★★★★ **Manual** ★★★★☆

90%

12 A'Clock

MicroBotics ■ USA



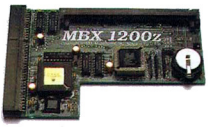
The perfect sidekick for those A1200 expansion cards which do not come standard with clocks, the 12 A'Clock (reviewed ADU 7) is a battery-backed model which installs directly on to the A1200's motherboard.

Ease of Use ★★★★★
Manual ★★★☆☆

93%

MBX 1200z

MicroBotics ■ USA



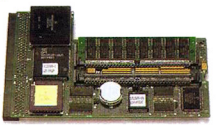
The MBX 1200z (reviewed ADU 7) is capable of expanding your A1200 with a 50MHz 68882 and 8 Mb of RAM, and also includes a battery-backed clock.

Speed ★★★★☆ **Ease of Use** ★★★★★
Features ★★★☆☆ **Manual** ★★★☆☆

90%

A1230

Great Valley Products ■ USA



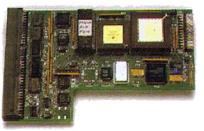
Expand your A1200 with either a 50MHz 68030 or 40MHz 68EC030, and 4 Mb of RAM, courtesy of the A1230 (reviewed ADU 7) from GVP.

Speed ★★★★☆ **Ease of Use** ★★★★★
Features ★★★★☆ **Manual** ★★★★★

92%

Twelve Gauge

CSA ■ USA



The complete expansion for your A1200, the Twelve Gauge (reviewed ADU 7) can take a 50MHz 68030, 50MHz 68882, 16 Mb of RAM and a SCSI hard drive!

Speed ★★★★★ **Ease of Use** ★★★★★
Features ★★★★☆ **Manual** ★★★★☆

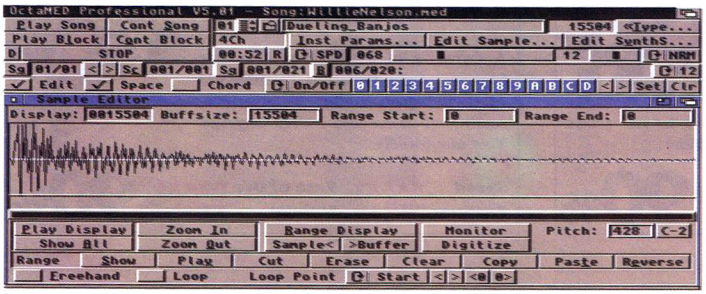
94%

KING of the PUBLIC DOMAIN

***Thomas Scovell** takes us into the realm of the Public Domain where the software is cheap and plentiful. Once again we take a look at the best on offer from Australasian PD suppliers.*

OctaMED v5.x
Amiganuts

OctaMED started out as the PD program Med several years ago. Since then it has changed a great deal and this latest version is much updated and now a commercial program.



OctaMED's main drawcard is its ability to play eight samples at a time, rather than the standard four. It also features inbuilt sampling software, two methods of editing songs and much more.

This latest version has a completely new look. The author has updated the user interface to include all the newest features of the O/S, which makes it extremely user-friendly; all features are also fairly intuitive, requiring less reading of the manual.

Almost the entire program has been extensively reworked. The graphical notation (classical stave format) is now extremely tidy and easy to use. You can create songs using traditional note format, play them and print them. The inbuilt sampling software and Sample editor are also much improved, featuring increased editing capabilities and effects which can be applied to samples.

Included with OctaMED is full online help. Pressing the Help key calls up a manual in AmigaGuide format, to assist with any problems you may be having. Also included are several example songs and other helpful text files, so you can quickly become a proficient OctaMED user.

OctaMED will work on almost any model of the Amiga with WB 2.x and above, including AGA machines. One megabyte or more of memory is recommended, especially since some of the example songs take more than this to run properly.

If you want what is probably the best music composition program for the Amiga — for much less than any comparable system — don't overlook OctaMED.

Rating.....9.5/10

Extreme Violence
Amiganuts

Extreme Violence is a fair description of this all-out action game. The aim is simple — find the other player and shoot to kill.

This Amos-programmed game is designed to be played by two people, either on joysticks or keys. The split screen display shows an overhead view of a maze, through which both players wander. There you will find weapon power-ups, as well as the other player, whom you must shoot in order to win.

The game will work on 1 Mb machines with WB 1.3 or higher. And should you enjoy it, payment of the shareware fee entitles you to a more advanced version. If you enjoy this form of game, give it a try. But anyone with a timid nature should steer well clear!

Rating.....7/10

Fruit Salad
Amiganuts

Fruit Salad, another Amiganuts game, has an altogether more gentle feel to it. It comes under the category of "cutesy platform" and is a good example of the genre.

The graphics are bright, with nice use of colour and texture. A jolly and playful theme tune accompanies the action. Your task in the game is simple — bounce around the screen collecting gems, whilst avoiding baddies. There are 20 levels in all and finishing the game should provide a good challenge.

Fruit Salad is a shareware game programmed by a group calling themselves "Grand Master Design". If future releases follow similar lines, they should be worth looking out for.

Rating.....8/10

Forcaster
Amiganuts MAD001

For those who dream of making it rich gambling on the horses, Forcaster is a good bet. It statistically analyses data on horse races and predicts the winners.

Configuring the program is relatively simple. It rates the horses on a variety of features, including form, weight and age. Included with the program is an example system, but you

can create your own, based on your assessment of these features.

To find the prediction on a race, simply enter the field with all available data on the horses. The computer then calculates a score for each horse, according to your system, and lists them in order — all via an easy-to-use icon environment.

The usefulness of such a program is hard to gauge, but it's certainly fun.

Rating.....6/10

Comic Art#3
GVPD ASL132

This is the third in a series of hand-drawn comic pictures, featuring the likes of Batman, the Predator and X-Force. All drawings are true to the originals, with individual poses and nice colour.

Also included is a good tune which plays as the slideshow is displayed. The slideshow's creator acknowledges that the tune is ripped from a game, which is a nice change, but original music would have resulted in a higher rating. Another slight problem lies in the way a Shell window is displayed as each successive picture is loaded. Consequently, it doesn't look as professional as it could have. The artwork, however, is what this disk is about and it's great.

Rating.....8/10

GVPD Feb94 Cat
GVPD

If you run a Public Domain Library, a disk catalogue is a good way of attracting customers. Exploring a library's stocks via a nice, graphical, user interface is infinitely more enjoyable than flicking through pages of printed text.

GVPD's catalogue is a good example. It supplies all necessary details, such as prices and ordering information, as well as giving good descriptions of the disks. You can easily search for something that interests you and browsing is a simple matter of a few button presses.

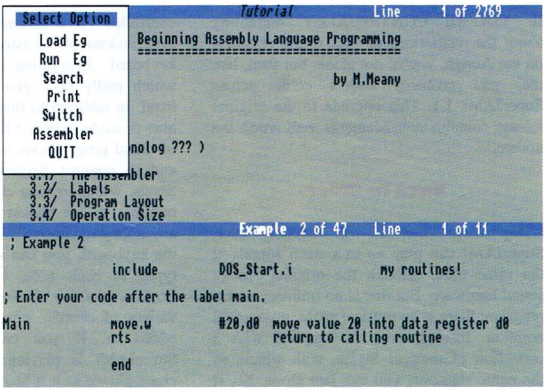
New libraries should also take note of additions to Great Value PD, which make it attractive to customers. GVPD now offer the opportunity of using credit cards when ordering. They now also belong to the PDAA (Public Domain Association of Australasia), whose code of PD Library "ethics" means you can expect good products and service from all members.

Rating.....8/10

Amiga Coders' Manual
Amiganuts

In existence for several years, the Amiga Coders' Club produces a regular disk magazine for programmers. Editor Mark Meany has produced this set of four disks, as a guide for those who wish to learn to code.

Tutorials for all aspects of assembly programming are included, as are numerous examples. An assembler program and all other files necessary to start coding, are also on the disks. The most innovative feature of the manual is the all-purpose displayer, from which it is possible to read tutorial text, view examples and even run the assembler to try your own programs.



Almost everything you could want to know is there — the Copper, audio, input, blitter, sprites and much more. All tutorials are well written, with plenty of examples for you to try.

Of the four disks, the first is Public Domain and the rest, Amiganuts licenceware. The set is most definitely worthwhile for anyone wishing to learn to program the Amiga.

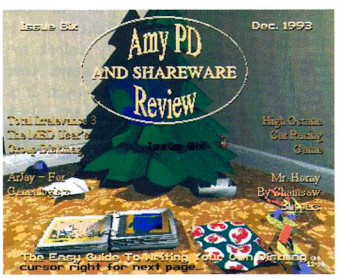
Rating.....9/10

APDR Issue#6
Cybercraft

Issue 6 of the Amy PD and Shareware Review is once again full of well written and illustrated reviews of PD. A wide range of disks from around the world is included and everyone should find something of interest.

This issue includes much more than PD reviews. Columns include articles on how to write your own disk magazine, computer art, scene freaks and Yorkshiremen! The light, humorous vein in these articles makes the magazine easy reading.

Rating.....9/10



As The Sun Slowly Sets...

Thanks for supplying PD for this issue must go to Amiganuts Library in Australia and Great Value PD and Cybercraft of New Zealand. If you are after a good selection of PD, both are worth a look. Other libraries or individuals are welcome to submit PD for review. As usual, I am always after good local products.

That's all from the Public Domain for this issue.

If you have any comments or suggestions for the column, or PD for review, drop me a line. I can be contacted C/- ADU, or via my Fido point 3:772/125.5. ■

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April Titles

ASL132 Comic Art 3	XDE135 Kiwi Green1 91
Pics-Batman,Spartan,	Demos & intros
SilverSurfer, Wolverine	GMI132 BB2 Games Pack1
XDE134 Spaceballs Demo	Blitz Basic 2 PD.
2D,9 Fingers.	Zombie Apocalypse, etc
ESC108 Back to School3	GMI133 BB2 Games Pack2
Fun to use edu. games	Asmodeus, JumpinJack
UCO106 ParBench	GMI134 BB2 Games Pack3
ParNet, complete setup.	Insectoids 2,etc
AAN133 CharleyCat 2 - 2D	GMI135 BB2 Games Pack4
2Mb Anim.Down at the Sea	Caffeine Free Diet, etc
GCG105 Cards &Mancalla	UDM110 Radbench 1.7
PMI105 Designer V2.12	RAD: Device Utility.
Design Maps and levels	ASL134 Tutankhamen's 2D
for making games.	AGA Sshow.Tut's Treasure
ASL133 Scan is Lame 2D	XDE136 Emptyhead AGA
AGA Show. 256 colour	Demo Rednex -3D dot etc
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*Resident muso **Matthew Grove** hooks his Amiga to his stereo and gets musical with the latest release of...*

SuperJAM! 1.1

The Blue Ribbon SoundWorks ■ USA

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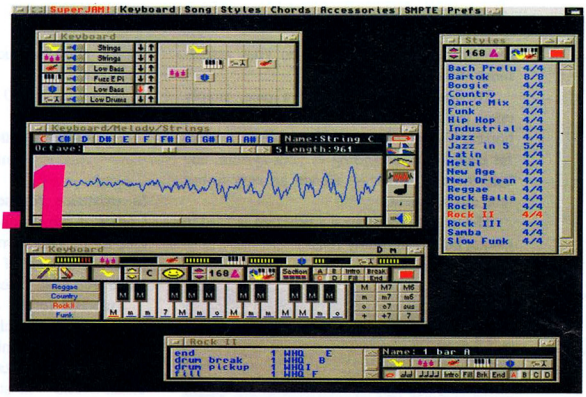


Swapping and editing Styles and instruments live is no problem for this band...

IF YOU'RE CONTINUALLY mumbling about the restrictions of four sound channels on the Amiga, you're not alone, but then, like me, you probably hadn't come across SuperJAM! 1.1. This upgrade to the original release contains enhancements well worth the update.

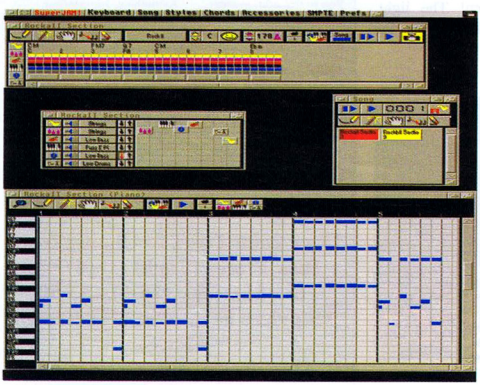
Band To Order

Using tricks that I will explain later, SuperJAM! can play up to sixteen sounds at the same time, through the original Amiga sound hardware. But this is no ordinary music program: there is no musical score, no musical notation. Instead, you are supplied with a collection of musical Styles, with which, as the name suggests, you can jam along. So, if you are into Hip Hop, Jazz, Country, Boogie, Reggae (or any of the other supplied Styles), you can instantly become your own band. Each of six different instruments, or band members, plays its own part, depending upon the Style. To jam with the music, you can use either the keyboard or the mouse. The mouse can be used to click on keys in the Keyboard window, either to play the lead instrument, or to change the chord that the band is playing. The (computer's) keyboard can be split into two rows of keys, similar to SoundTracker/MED, with the top row for changing chords, and the bottom for the lead instrument.

So, with a few mouse clicks and the bare minimum of musical knowledge, you instantly have your own band at your fingertips. The volume and panning of instruments can be controlled via a mixing grid, and the chord progressions of the band controlled from the keyboard. Everything changes in realtime, which really does give the effect of a live band. In addition to the live capabilities, it is also possible to create Sections — collections of chord progressions and style variations — and to connect Sections together, to form Songs. When creating chord progressions, it is possible to use almost any chord, based on any note you choose. When playing live from the keyboard, you can assign different chord types to each note, but when creating a Section, you can choose from an even wider variety of chords, which can be edited and added to. If you create a chord while SuperJAM! is playing, you can hear your chord played as it is being composed.

Apart from controlling just the chords played in a Section, each Style has four Groove styles — small variations of each other — and Intro, Fill, Break and End options. In addition to this variation, it should also be noted that a certain randomness is introduced into the playing. Each Groove, Fill etc. has up to sixteen variations built into the Style, which are randomly selected, depending upon certain conditions. This applies to each individual instrument, so the chance of hearing the same combination twice in a complex Style is almost zero. Despite, (or maybe because of), this random feature, results are impressive.

However, it does mean that every time you play a song, it is different. If you like a particular effect (for example, a drum fill), it is possible to lock those bars (a kind of snapshot). Even more impressively, once you've locked a bar to a fixed sound, you can edit the notes the instruments play in that segment. Unfortunately, if you accidentally unlock the bar and play it again, your editing is written over. It is not possible to lock individual instruments to what they play, but it is possible to record a lead tune over the entire song. This gives a constant lead with a varied accompaniment.



The piano part of a Section shows just how much variation is possible.

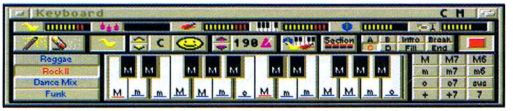
How does SuperJAM! play sixteen sounds simultaneously? Clever tricks are required, and, if you have used OctaMED, which coaxes eight channels out of the hardware, you will know that the results are often not much better than with the original four channels. SuperJAM! keeps a sample in memory for every single note it can play. Since this requires numerous samples, individual note samples tend to be small and somewhat lacking in quality. In order to squeeze several samples into one hardware channel, they must be combined into one in realtime by the processor. (This is where a faster processor comes in handy.) SuperJAM! has three sample quality settings which correspond to sample rates. The faster the processor, the higher the sample rate possible, and the better the quality of the output.

Installation

Installation is easy, and can be done to either floppy or hard drive. The only copy-protection is the entering of a registration number. At least 3 Mb of hard drive space is required, with 2 Mb of RAM for optimal use. I would also recommend at least a 68020 processor, unless you only want to use the MIDI capabilities. The 200-page manual is an excellent guide to the program.

Support

SuperJAM! also supports (General) MIDI, allowing either some or all band members to play through a MIDI-capable device, including the drum kit. The mixing grid for the band enables the volume and stereo panning to be set for each instrument. Without MIDI, instruments come from either the left or right speaker, but with MIDI, instruments can be partially panned. If your MIDI device supports the new General MIDI standard, instruments can be selected by name, rather than patch number. If you use a MIDI keyboard, the lower half can be used to control chords when playing live, and the top half, for the melody. One point I should also mention is that, even without a MIDI setup, hitting several keys simultaneously on your (computer) keyboard, means they will all be played. SuperJAM! also supports the One-Stop Music Shop expansion card, a 16-bit, internal sound card with hundreds of



A five-note chord being played from the keyboard.

built-in samples and an extra MIDI interface.

To integrate SuperJAM! with other applications, external accessories modules can be installed in the program. A number come with the program, and others will become available with associated software. The simplest accessory provided is an ARexx interface to SuperJAM!, that allows the playing of songs and other features to be controlled from an ARexx script. Other accessories provide for the synchronising of animations from Real 3D or Imagine with a SuperJAM! song.

SuperJAM! also allows you to use any of your own samples as instruments, and includes an array of tools to convert an IFF sample into its own internal TurboSound format (i.e., one sample per note). Another interesting feature is the ability to record an entire Song as a single sample — a so-called TurboSample. The resulting sample is superior in quality to its "live" equivalent, since the restrictions of realtime calculations are no longer present. The major drawback is the size of the sample (a one-minute, medium-quality, stereo TurboSample requires 1 Mb of disk space!) A stand-alone, freely-distributable TurboPlayer is included.

The more musically adept could try their hand at creating their own personal styles. SuperJAM! includes a complete Style editor, which allows current Styles to be edited, or new ones created. The user can create sixteen variations for each instrument, setting out what each would play individually, for each of the four Grooves and the Intro, Fill, Break, and End. Included in the editor is the "mother of all windows", which allows very accurate control over which variations should be played on which chords, via a massive array of gadgets. When creating a Style, be aware that each note has a set of parameters, providing a certain amount of randomness in the timing and volume of the note, to increase the realistic effect of a live performance.

There is no facility for printing Songs, mainly because the Songs are inherently random. It is possible, however, to record Songs in either SMUS or MIDI formats, which can be printed by other music programs such as Deluxe Music and Bars&Pipes Professional. SuperJAM! Songs can be loaded and saved, and so can the individual sections comprising a Song. The program includes example Sections for each Style.

I was really impressed with the internal sound capabilities of SuperJAM! The program managed to achieve what I had previously thought impossible with current Amiga sound hardware. Those lucky enough to have a MIDI setup will find the results stunning. The Styles provided are well done, catering for all tastes, although the Bach Prelude with drums sounds a little strange. Even if music is not your forte, a little experimentation can quickly result in a reasonable song. After a while, the Styles tend to become slightly monotonous, but, with enthusiasm and a moderate musical knowledge, you're free to create your own, or maybe just vary those provided.

This program could well have possibilities as an educational tool in the learning and understanding of music. The manual covers all aspects of the program clearly and precisely, which is vital, because there is simply no other program like it. During the course of this review, my contact with the creators, The Blue Ribbon SoundWorks, was extremely positive, and future enhancements seem likely. All in all, a very pleasing piece of software to review. ■

Supplied for review by The Blue Ribbon SoundWorks

SUPERJAM! 1.1
NZ$225 A$195

SPEED ★★★☆☆
FEATURES ★★★★★
EASE OF USE ★★★★★
MANUAL ★★★★★
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Continued from page 7

actual putting to air."

What certainly would have affected his putting to air was the calibre of his support team: he couldn't have asked for better. Valiantly keeping up with details bombarding them from radio links on each hole, OB media truck staff included Commodore National Sales Manager, Tony Hitchcock; his wife, Alison (who works for Cardinal Network and suggested the Amiga alternative when her firm decided not to take part); Commodore Account Manager, Mark Saunders; his fiancee, Clare Whittam ("commandeered" for the occasion); and miraculous student job search "finds", Brent Robinson and Henry Barfoot. ("Those guys were right on the ball; we couldn't have managed without them.")

Positive spin-offs for Commodore through the contra component of the deal included CD^{32} exposure during commercial breaks; the purchase of equipment by TVNZ; and Amiga logo coverage during both golf and athletics. On the subject of personalised coverage, it seems that the Amiga logo crops up in the most unexpected places. Ever mindful of the competition, Mark takes more than a passing interest in other sports televised live. And the hurried disappearance of an Amiga screen under a Unisys label did not escape detection during the cricket coverage.

The biggest problem for TVNZ occurred when unexpected players came up out of the field, as happened on the last day at The Grange. "Michael Campbell gained something like four shots in six holes — he went from a has-been to a real contender and finished second equal. You have to work quickly to cover that."

The Smokefree Track Series took over where the golf left off. Again a somewhat difficult application, which Mark ran single-handed. He explained: "It was all recorded as per live, but the last event would finish at 8pm and we'd be on the air at 8.30pm. During that time, the editors were going crazy, assembling a package out of four to five hours of recording the races. I needed to get the field — and there were changes right till the last minute. I had to cover the field; provide the Commonwealth Games qualifying standard graphic; a baseline for what the race was; and a way for the computer to work out who was first, second and third, and what time and/or distance they had recorded in the warm-up.

"It wasn't any elaborate system hooked up to another computer. It was done pretty close to the wire really, put live to tape at that time. If we missed a graphic at any time, we made a note that it would be put to air as the material came out of the truck. So there was a bit involved in that as well.

"Anything that goes to video tape is fine. It's when it's live that the whole thing changes. You can't go back to material on tape any more — you either have to do it live, or package it and do it from tape later. And that's really where the golf came into its own.

"The athletics came together in under a week from the close of the golf. It had been discussed, but not confirmed. And TVNZ, to their credit, acknowledged that our system would not happen overnight. It's already more than they are able to do in a suitcase, providing facilities at short notice to do some pretty amazing things. It is not perfect yet, and time, expertise and money are needed to make it all sing. The other necessary ingredient is someone who is fairly Amiga-savvy, to make the system intuitive to work for non Amiga-literate people."

One significant, flow-on effect from TVNZ's "taking a punt" on the Amiga has been the realisation by others, specifically CTV, that a considerable amount of Amiga gear can be purchased for a fraction of the cost of traditional broadcast titling equipment. Which, points out Mark, will give 85% performance for 15% price.

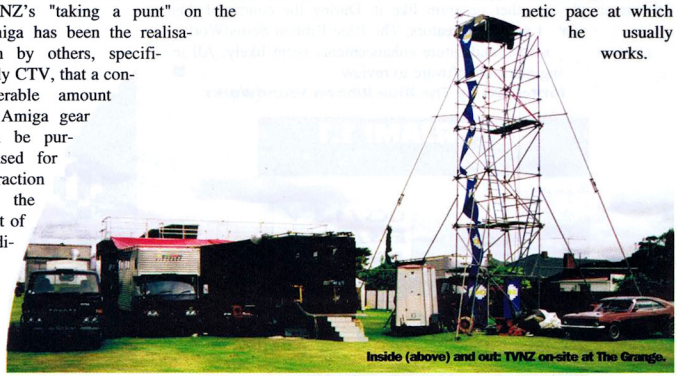
CTV have installed their first suite, primarily for children's television, consisting of an A4000 and Neriki genlock — "very similar to what we used for the golf," he said. "An example of what it can do for them, for instance, relates to the birthdays of all the What Now kids. Use of an ARexx script will strip all the birthdays out of the database on the Amiga and turn them into a long, baseline crawl. Without doing anything else, CTV can run all the names and addresses. Other systems can't do that, unless someone actually types it all in. It's like a video-typewriter with superb graphic capabilities.

"CTV realise that there is Amiga-trained expertise if they look out for it — kids with talent, with the communication skills to make it all happen, with the talent also to make the material look good. They're natural communicators, natural artists, who also have a computer appreciation. That's really where the secret lies — not in the hardware, but in the people and what they make of it, along with the quality of the communication that says this is what we want and how we want it to look, and then letting the Amiga operator go and do it."

Whichever way Mark Coldwell looks at the Amiga, he continues to see "a most amazing computer" — even more amazing in light of the fact that, for him, computers are not even a hobby. They're strictly confined to the work category.

Talk about the passion in his life and his eyes light up: trains occupy every spare moment. From the day he and his dad paced a steam train from Hamilton to Auckland in 1972 — chasing along in an old, green, Holden stationwagon — he has been fascinated by rail transport. He owns the youngest (1983) diesel locomotive in the country — the result of a successful, impromptu bid at an auction in Kawerau last year — currently kept at the Pacific Rail Trust Parnell premises.

Restoration of older locomotives and serious model railroad building help preserve his sanity, considering the frenetic pace at which he usually works.

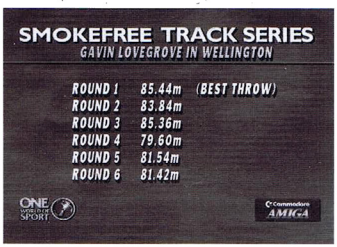


Inside (above) and out: TVNZ on-site at The Grange.

Mark Coldwell: locomotive owner after impromptu bid.

He is a mine of information on the 27,000-mile Burlington Northern railroad in the US, and spent seven weeks chasing trains in the US in 1992 (on basically a pack, rail pass and no money premise). He returned with 1442 photographs — "it worked out at one every 19 minutes, much of it absolutely mindless information to anyone else." A particular freight car would result in a roll of film on precise details of doors, brakes and other features for later reference for model construction.

He joked: "I've built about 60 model locomotives, which are stored in boxes. Now I need to build a house 180 feet long by 30 feet wide. That'll do me."



Mark went from Westlake Boys' High to Massey University to study industrial technology. Holiday work at Imagineering resulted in a further three years there, involved in the production of Ultra computers, before he was headhunted by Commodore. A background of process engineering at university had included stints optimising equipment in freezing works — a route he definitely did not wish to follow.

"So when the computing angle came along, it caught my attention," he recalled. "I learnt as I went. I have a gritty, hard-nosed, get the job done no matter what it takes-type attitude. I can look at things and almost instantly, everything will be clear in my mind and I can see how it fits together, almost down to individual cables. I think very laterally and see the broad picture quite quickly.

"I'm quite crazy at times as well — one of the best ways to maintain my sanity is to listen to other people questioning me. I think I just enjoy the challenge of doing something a bit different and taking some risks. I'm used to doing big projects and to seeing them through."

Mark applies his own personal philosophy to helping dispel the games myth associated with the Amiga. "The courage, the belief and the dogged determination to make it work is what's necessary, and, in general, to get away from existing apathy. It's up to the individual to make it happen — and that applies to whatever they want to do." ■

TEST FLIGHT

HOW WOULD TVNZ have covered two major golf tournaments without the Amiga? "Put a big question mark beside that," said One World of Sport producer Graham Veitch, who readily acknowledges that the Amiga came to the rescue at short notice.

He likens the launching of the Amiga's computer-based scoring system for the golf to a jumbo jet on its first test flight: the track series, the second. "There's no way aircraft manufacturers would roll a brand new aeroplane out of the hangar and put people in it. We did at The Grange — and it crashed. By the time we got to Remuera, it was certainly better, and by the time we got to the track series, it was better again.

"The system still needs development. There's a big difference between a trained test pilot flying a new aeroplane, and Mr Joseph Smith flying on contract to Malaysian Airlines — in other words, the system needs to be made more friendly, so that anybody used to driving a normal graphics machine can also drive the Amiga.

"I love new technology. I believe it is important and that we mustn't pass up the opportunity to expand and use it. The Amiga is on the leading edge of new technology — there's no question about that. There is nowhere else in the world — no system that I know of in the open broadcast sphere anyway — that uses this sort of system in any shape or form. It's basically a character generator, a computer, and a graphics recaller, and the nice thing about it is that you can compose on the very expensive equipment in the network centre, transfer it on to the Amiga and take the Amiga on-site. As many broadcasters have found, including Channel 7 at the Barcelona Olympics, the very expensive equipment, like Infinit, does not travel well."

The former GCS system used by TVNZ had 12 years of development behind it. Within the time frame of three to four months available to the Amiga pilot, says Veitch, results were great. He continues: "Sometimes rushed situations cause things to be done. It's the old story. If you have a week, you'll take a week; if you have a month, you'll take a month. For example, I've seen many boats over the years, but not one that was launched completely finished. That's just the nature of the human beast.

"It would have been an advantage to have tried the system on smaller projects less crucial as a test bed, but that's not usually the way things happen."

The Amiga's ability to display TVNZ's One World of Sport logo on-site — along with those of Air New Zealand and Shell — through the one machine, was a plus. The simplicity and relative cheapness of a single system (in place of a former mini mainframe, Aston character generator and graphics generator) to generate backgrounds and One World of Sport branding, has to stand it in good stead for the future.

"It still needs design input and layout improvement," says Veitch, who believes that the major difference in onscreen look between television channels lies in the graphics. "That's why graphics and layout are so important — branding equally so. Your Commodore Amiga brand is like our One World of Sport: it's very important that we brand everything we do on-site.

"I think this new technology is the way of the future. But it needs more research to make it user-friendly and bring it up to the same level of usage as PCs." ■

The Commodore Amiga Golf team (from left): Mark Coldwell, Henry Barfoot, Mark Saunders, Clare Whittam, Tony Hitchcock and Brent Robinson.

Continued from page 32

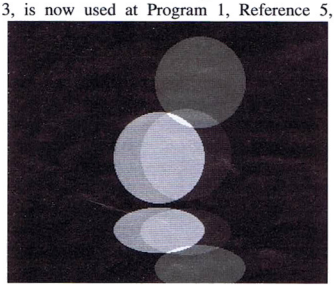
As part of its Copper list maintenance routines, Amos keeps two copies of the Copper list, one used by the Amiga's Copper, and one manipulated by Amos to swap to that used by the Copper. At Program 1, Reference 2, the address in memory of the current Copper list is found.

Use An Axe

The hack that produces this effect needs to be placed at the very end of the Copper list: therefore Amos has already set up the display. At Program 1, Reference 3, find the end of the Copper list by looking for Colour 31 (this is specific to Amos, so do not try this technique with Workbench). Amos then starts the screen drawing process. The next Copper instruction waits until the bottom of the screen is reached, at which point Amos stops the process, in accordance with the WAIT command. We need to extract the Y (see Program 1, Reference 4) part of the WAIT command, to allow our Flow effect to also finish at the base of the current picture.

Every eight pixels drawn on the monitor are stored as 1 byte in memory: thus a scan line 320 pixels in width is made up of: 320/8 => 40 bytes. When the Copper comes to perform the skip amount, that skip amount moves the bitplane pointers back to the start of the data for the current scan line. The same data for a scan line is therefore redrawn down the rest of the screen.

The address found at Program 1, Reference 3, is now used at Program 1, Reference 5, where we introduce the modulus (SKIP) commands into the Copper list. The problem with overwriting the Copper list with new commands, is that we have now overwritten the commands put there by Amos to turn off the Copper output to the monitor, when the base of the picture is reached. So at Program 1, Reference 6, we restore the end of the Copper list commands.



We have now almost reached this program's main loop, so at Reference 7, we need to determine the Y position described earlier. The problem here is that the part of variable HERE containing the Y value is bits 24-31. To tell Amos to isolate them for us, we use the AND command, which selectively keeps bits of our variable HERE. To keep a bit of the variable, put a "1" in the ANDing Argument.

e.g.: TRY=%11101101
RESULT=TRY AND %00110011

Thus RESULT would now have the binary value of %00100001. If you find this confusing, examine the following table:

A	B	RESULT
0	0	0
0	1	0
1	0	0
1	1	1

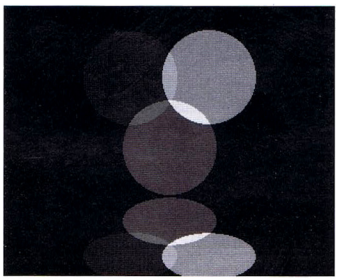
For a "1" in the input data A to be kept, the other input data B must also be a "1". So in my program, I keep only the top byte.

So that this kept value is meaningful (in the range of 0 to 255), I shift the upper byte to the lower byte (i.e., divide the number by 256 or rotate the bits to the right 8 times).

We are now at Program 1's main loop, which consists of continuously changing the Y value of the Wait Command. The Y position that we wait for is moved down the monitor, thus giving the effect of the Flow moving down the monitor.

Tying Things Up

At Program 1, Reference 8, the Wait Command is modified. So this whole effect (if you examine Reference 8) is the direct result of changing 1 (YES, only 1) byte of RAM. If you want the effect to go super-fast, Rem out one of the Wait Vbl commands near Program 1, Reference 8.



In order to view this stunning effect repeatedly without continuously re-running the program, see Program 1, Reference 9, for a small routine that exits the program if you press the right Mouse Button, or re-runs the effect if you press the left.

If you thought that continuously changing 1 byte of RAM was too much work for Amos, prepare yourself for the next effect, which, once set up, requires Amos to change 0 bytes. Here the Copper maintains the whole effect alone.

The Reflection Effect

In the Flow effect, we saw the result of making the skip value the same as the number of bytes across the screen. What do you think would happen if we made the skip amount a negative number of bytes across the screen? The Wait Command's location at the Y position would show the screen above it, except that the result would be upside-down! You can prove this by changing the code at Program 1, Reference 5, to:

SKIP=-((Screen Width/8)*BK)

BK represents the number of scan lines backwards that you wish to skip. The value 2 (Flip screen horizontally) is a good one to

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start with. If you increase the value, you will see the screen shrink more and more — the basis for the second Copper trick.

To illustrate this powerful effect, and show that the screen at the bottom is a direct copy of the screen above, (simply a smaller, flipped version), I chose a demo with circles spinning around the screen. After all, a circle squashed to half its height is an ellipse: the bottom of the screen should therefore feature ellipses.

In Program 1, I added the end of the Amos Copper list commands after my Copper commands. However, in this effect, I decided to try getting Amos to do the work of setting up the bottom of the Copper list. This would also allow us to use the full height of the monitor, not just the top 200 scan lines, as with Program 1.

This effect starts at the bottom of the user screen. How do we find the bottom of the screen in hard coordinates (Program 2, Reference 1)? First find the hard location of the top of the screen (remember that the screen uses hard coordinates), add the screen's height in pixels to this value, and presto! We now know where the physical bottom of the screen is on the monitor. This is where we put that upside-down version of the main screen.

Now comes the set-up of the second screen. To avoid having two copies of the screen (a very wasteful use of memory), we use the Screen Clone command. This sets up another screen which uses the same graphics data as the current screen (see Program 2, Reference 2). Some of the screen parameters for the cloned screen need to change to allow this effect to work properly. Namely, the height of the screen needs to be changed to about one third of the main screen (to compensate for shrinkage), as well as the Screen Offset. As we want to view a flipped version of the screen, we need to start the screen's data at the bottom of the screen. The negative modulus will then view the data backwards, thus showing the screen's data.

Next, we need to find where, in the Copper list, Amos sets up the bottom screen. Since we are looking for the second screen in the list, it stands to reason that we need to find the second occurrence of the modulus commands. Hence the For ... Next loop around the Find Modulus Loop. (Reference 3.)

We now come to the point where we introduce the new modulus values into the Copper list. But first, at Program 2, Reference 4, we calculate the new modulus required. Changing the variable SCALE will increase the number of scan lines missed in the reflection, thereby reducing the vertical size of the reflection. The value "3" in SCALE makes the reflection about a quarter of the height of the above screen. The value "4" makes the screen an eighth the height etc..

To illustrate the effect that a reflection has on an animation or game, I have placed at Program 2, Reference 5, the Red Green Blue Spot Ball Demo from ADU 6.

Possible Modifications

This issue's tricks focused only on playing around with the Copper Modulus, giving a glimpse of some of the effects achievable on the Amiga, when the hardware is adjusted.

The reflection effect could be modified to make a reflection that changes its size and Y position to give a bouncing image. The bounds of your own imagination are the only limit to how you can vary and push this routine. I have also found that the multi-coloured spotlight and halfbrite demos come alive when placed in the reflection demo.

Afterthoughts

We have already explained the need to hack into the Copper list to achieve these effects. What else can you do, with the lack of commands to enable you to achieve that extra something from Amos? But please remember one very important point: these hacks into the Copper list are aimed only at Amos.

Subscribers will find working versions of all programs discussed on the subscriber disk. Don't forget that if you are experiencing problems with Amos, you can write to me C/- Amiga Down Under, and I will do my best to help you. Remember to include details of your set-up and the version of Amos you are using. ■

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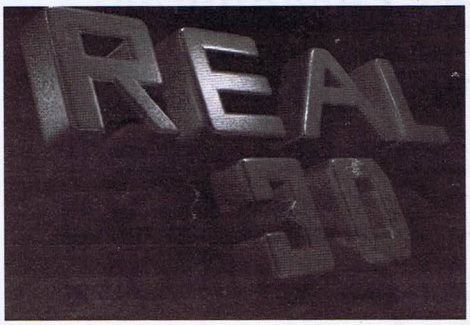

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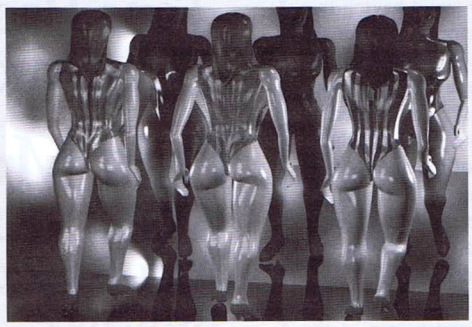

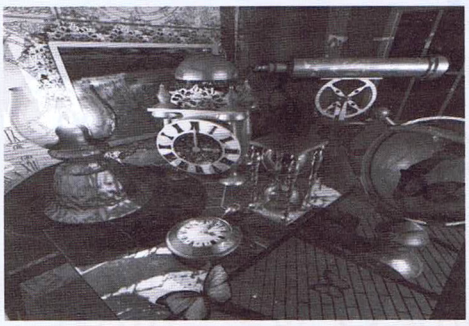

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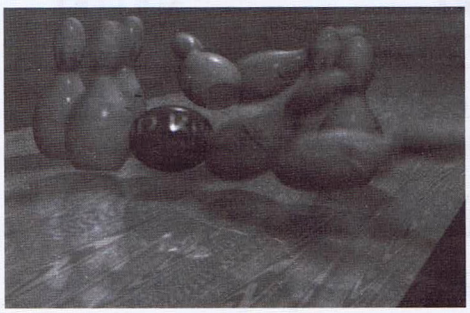

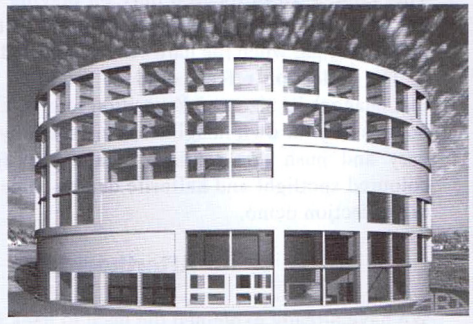

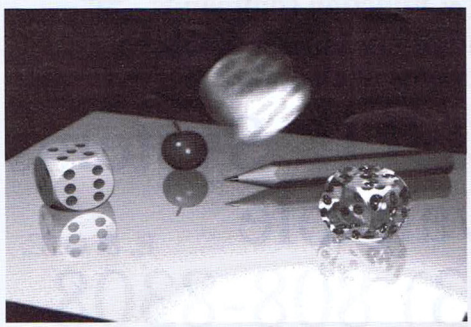

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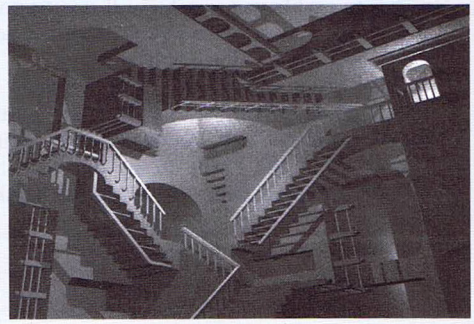
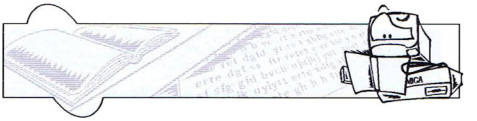


Ray Abram, our talented Amos columnist, casts an informed eye over number nine in the Mastering The Amiga series...



Mastering Amiga AMOS

Bruce Smith Books ■ UK

BSB

HOW MANY OF you have looked at amazing games or utilities on the Amiga, wanted to write something similar, and been put off by the thought of not knowing where to start? If this is your excuse for never getting around to furthering the idea in that shoe box of thoughts inside your head, dust off the cobwebs, switch on your imagination, and prepare yourself for the ride of your life.

Anything But Amos

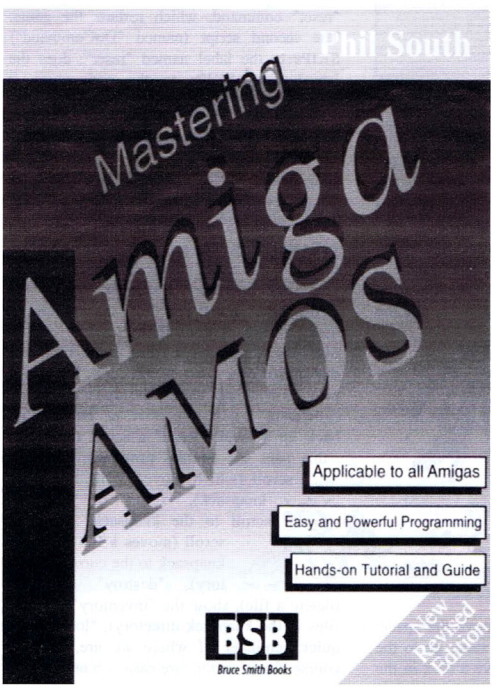
If you have ever looked at Amos, with its several hundred commands and despaired at the thought of learning them, this book is for you. Mastering Amiga Amos takes you step by step through all the commands you thought were too complex to understand, let alone use.

The book has been written in such a way that you could swear that author Phil South was sitting beside you, talking to you. The result of this style of writing is that you, the reader, remain interested, constantly learning more and more information at an easy pace.

Those who have tried to use the manual that comes bundled with Amos, will know that some of the explanations of how to use the more powerful commands are lacking in information and example programs. This book bridges those gaps in the manual by providing a detailed look at Amos commands, with in-depth examples to illustrate the use of commands in actual programs.

What's In It For Me?

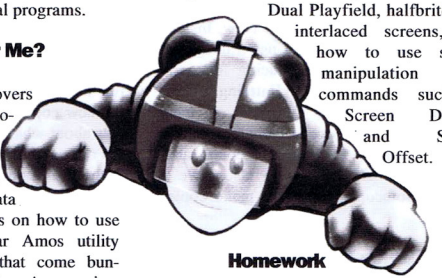
Mastering Amiga Amos covers all areas of Amos: from programming sound to graphics into your programs; from manipulating user input, to saving and loading of data files; as well as explanations on how to use the popular Amos utility programs that come bundled with Amos i.e., SpriteX, Amos 3D, Amos V1.3 Compiler, Ctext and TOME. The author's thoughts on Amos Professional and Easy Amos, and their advantages over the humble Amos V1.3, are also included.



The book begins by explaining what Amos is and why the author Francois Lionet wrote it. This is followed by a section on how to program in Amos V1.3, explaining how to use the control structures such as Repeat ... Until, While ... Wend, Do ... Loop, If ... then ... else if... etc.

The book then discusses how Amos can work for you, by drawing graphics on the screen in the form of painting, lines, polygons, boxes, etc.; colour cycling; and how to use features like the Rainbow command to your advantage.

The next topic of discussion is probably the most important, as without it, you have no way of ever communicating with the user: the screen. As you have seen from my "Amazing Effects" articles, the concepts of screen manipulation and handling by Amos can be quite difficult to grasp. Never fear — this chapter gives a detailed explanation on how to use the various screenmodes and screen manipulation commands of the Amiga. Included are examples on the use of Dual Playfield, halfbrite, and interlaced screens, and how to use screen manipulation commands such as Screen Display and Screen Offset.



Homework

The chapter on Maths in Amos covers simple concepts, such as how to translate a written formula into something Amos can understand and use. This chapter includes many invaluable program examples on how to get Amos to work for you. Once you understand how to get Amos to do maths, and with a little of your own input, you'll soon have Amos doing all your homework for you!

So, if you have ever thought of pulling your hair out by the roots in frustration, this book is for you. It guides the user through the Amos commands in a user-friendly way, which I feel makes the whole learning process extremely easy to grasp. ■

Supplied by Bruce Smith Books

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READABILITY	★★★★★
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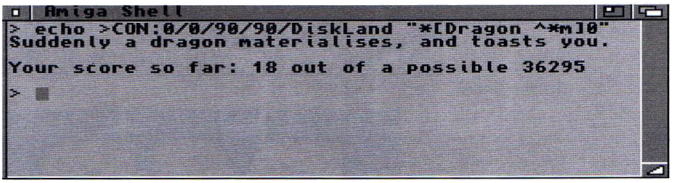


SHELL SHOCKED

***Jarno van der Linden** creates a magical world, using a simple text editor and the Amiga Shell.*

HELLO THERE! This month we will go totally over the top with a monster script. Not just any old script either, but a whole text adventure game!

A Different View

Programs are usually organised in directories and subdirectories on a disk, often represented graphically using a filing cabinet. The drawers in the cabinet contain the programs. Hence the drawer icons used by the Workbench to represent a directory. Now, instead of office furniture, why not use a dungeon? Start at the top level, facing dungeon entrances (the directories). Entering a dungeon may reveal more dungeons. At each level, you can find scrolls (programs). You carry a knapsack to transport items, and, since this is the 1990s, you also have a portable photocopier handy to make copies of scrolls.

Inside The Dungeon

How does this all work? The whole thing is split into two scripts. The first, a startup script, sets up helpful aliases and initialises variables. The second script does all the hard work: it receives a command and acts on it. However, it does so in a recursive manner.

Split Personality

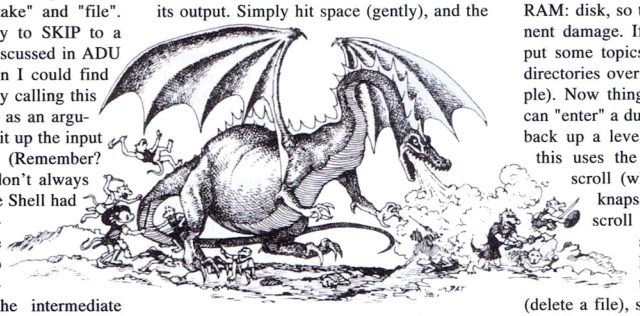
This strange way of doing things came about when I tried to split the input into a command and an argument. For example, "take file" would be split into "take" and "file". That way, it would be easy to SKIP to a label, using the technique discussed in ADU 6. The most elegant solution I could find was to call another script. By calling this second script with the input as an argument, Shell would nicely split up the input for the ".KEY" arguments (Remember? ADU 4). However, things don't always go the way you expect. Once Shell had finished executing the second script, a SKIP in the first script refused to go back to an earlier label. Subsequent investigation of the intermediate files created by Shell in the T: directory showed why. When Shell executes a script within a script, it takes the second script and puts the remainder of the first script under it. This works well if you only need to go through your scripts once, but it causes havoc with SKIP BACK commands, as the labels simply no longer exist. PANIC!

Infinite Scripting

So we can't jump back in the first script. But the way Shell handles scripts within scripts opens the way for infinite recursion. Normally, recursing into infinity (continuously having a program call itself) would quickly fill all the memory. This occurs because a copy is made of the program, which is then run while the old copy remains, waiting for the new copy to finish. Shell, however, forgets about what has already been executed in the old copy. Therefore, if the recursive call is the last command of the script, no traces will be left of the old copy. This is illustrated in the following script:

```
ECHO NOLINE "Hello World "
LIST T:Command#? LFORMAT "%l"
EXECUTE Hello
ECHO "Bye World"
```

Save this under the name "Hello", and execute it. It will say "Hello World", and when it starts recursing, notice the size of the new copy. See how it increases each time, because, at every recursion, it attaches what remains of the script (ECHO "Bye World") to the new script, which happens to be the same script. To see this, open two Shell windows. In one, execute the script. You can temporarily suspend the script by blocking its output. Simply hit space (gently), and the script will stop until you remove the space. While it is in this inanimate state, go to the second Shell window, and have a look in the T: directory (DIR T:). In it you will find a file named (approximately) Command-00-T05 — the actual copy of the script which is run. You can view it by using TYPE or MORE. Notice the multiple copies of the last line.



Play It Again, Sam

But if we make sure that the EXECUTE command is the last command in the script, this continual growth will not occur. After all, there is nothing left of the script that has to be remembered. So now the door is open for recursion without problems. What is the second script required to do? Firstly, it has to act on the input (which has been split into "command" and "argument"). Secondly, it has to find new input. Thirdly, it has to split this input up and have it processed by a script which happens to be itself (i.e., recurse). The role of the first script is only to kick off this infinite cycle. It does so by sending it the "reset" command, which restarts the game. The second script (named "DoCommand") SKIPs to the label named "reset", does the introduction, SKIPs to the end where it receives some input, and calls itself.

Enter At Own Risk

How do we use these scripts? To start it all going, EXECUTE the first script in a Shell window. Make sure both scripts are in the same directory. The script can take one argument — the name of the directory or disk you want to explore. I suggest you use the RAM: disk, so that you don't do any permanent damage. If your RAM: disk is empty, put some topics on it (drag some files and directories over from Workbench, for example). Now things should be underway. You can "enter" a dungeon, "exit" or "back" to go back up a level, "Read" a scroll (note that this uses the MORE program), "take" a scroll (which moves a file into your knapsack), "xerox" or "copy" a scroll to the knapsack, "drop" a scroll (moves a file from the knapsack to the current directory), "destroy" a scroll (delete a file), show the "inventory" (list the files in the knapsack directory), "look" for a quick reminder of where we are, and, of course '"quit" in the rare case you need to.

LISTING 1

```
.KEY initdir
.DEF initdir :
.BRA {
.KET }
; ------------------------------------
; Script 1: MAD
; My ADventure, or MAD.
; Startup commands
; ------------------------------------
ALIAS SHOWDIRS LIST DIRS LFORMAT "*e[32m   %s*e[31m"
ALIAS GETDIRS LIST DIRS LFORMAT "%s"
ALIAS SHOWFILES LIST ~(#?.info) FILES LFORMAT "*e[33m   %s*e[31m"
ALIAS GETFILES LIST ~(#?.info) FILES LFORMAT "%s"
ALIAS RESETINPUT SET input ""
ALIAS GETINPUT SET >NIL: input ?
RESIDENT C:LIST
RESIDENT C:COPY
RESIDENT C:DELETE
COPY DoCommand T:
IF NOT EXISTS T:KnapSack
   MAKEDIR T:KnapSack
ENDIF
SET olddir 'CD'
CD "{initdir}"
SET topdir 'CD'
EXECUTE T:DoCommand reset
```

LISTING 2

```
.KEY command,argument
.BRA {
.KET }
; ------------------------------------
; Script 2: DoCommand
; My ADventure, or MAD.
; Command processing and input commands
; ------------------------------------
SET know "NO"
SKIP "{command}"
LAB reset
   CD "$topdir"
   ECHO "*e[32m*e[3mWelcome to the shell adventure*e[0m*N"
   ECHO " After a heavy night of partying, you wake up and"
   ECHO " find yourself in a place called"
   ECHO "*e[33m   " 'CD' "*e[31m"
   IF "'GETDIRS'" NOT EQ ""
      ECHO " There are several entries to various dungeons here,"
      ECHO " which, for some odd reason, doesn't seem to strike"
      ECHO " you as being in any way peculiar. Being the "
      ECHO " adventurous type, you decide to have a look."
      ECHO " The dungeons are marked:"
      SHOWDIRS
   ELSE
      ECHO " For some reason there seems to be nowhere to go."
   ENDIF
   IF "'GETFILES'" NOT EQ ""
      ECHO " Someone has left some scrolls lying around the"
      ECHO " place. They are neatly labelled:"
      SHOWFILES
   ELSE
      ECHO " There is nothing here to grab your attention."
   ENDIF
   SET know "YES"
SKIP End
LAB enter
   IF "{argument}" EQ ""
      ECHO " Nothing to enter."
   ELSE
      CD "{argument}"
      ECHO " Deeper you go into the dungeon..."
      SET dirs 'SHOWDIRS'
      SET files 'SHOWFILES'
      ECHO " You are now in a dungeon called"
      ECHO "*e[33m   " 'CD' "*e[31m"
      IF "'GETDIRS'" NOT EQ ""
         ECHO " You see more dungeons ahead."
         ECHO " A signpost points to them. It reads:"
         SHOWDIRS
      ELSE
         ECHO " You have hit a dead-end."
      ENDIF
      IF "'GETFILES'" NOT EQ ""
         ECHO " You see some scrolls:"
         SHOWFILES
      ELSE
         ECHO " You see nothing of interest."
      ENDIF
   ENDIF
   SET know "YES"
SKIP End
LAB exit
LAB back
   CD /
   IF "'CD'" EQ "$topdir"
      ECHO " You are back where you started from."
   ELSE
      ECHO " You find yourself once again in"
      ECHO "*e[33m   " 'CD' "*e[31m"
   ENDIF
   SET know "YES"
SKIP End
LAB read
   IF "{argument}" EQ ""
      ECHO " Nothing to read."
   ELSE
      RUN >NIL: TYPE {argument}
   ENDIF
   SET know "YES"
SKIP End
LAB take
   IF "{argument}" EQ ""
      ECHO " Nothing to take."
   ELSE
      COPY >NIL: {argument} TO T:KnapSack
      DELETE >NIL: {argument}
      ECHO " {argument} taken."
   ENDIF
   SET know "YES"
SKIP End
LAB xerox
LAB copy
   IF "{argument}" EQ ""
      ECHO " Nothing to photocopy."
   ELSE
      COPY >NIL: {argument} TO T:KnapSack
      ECHO " {argument} xeroxed."
   ENDIF
   SET know "YES"
SKIP End
LAB drop
   IF "{argument}" EQ ""
      ECHO " Nothing to drop."
   ELSE
      COPY >NIL: T:KnapSack/{argument} TO {argument}
      DELETE >NIL: T:KnapSack/{argument}
      ECHO " {argument} dropped."
   ENDIF
   SET know "YES"
SKIP End
LAB destroy
   IF "{argument}" EQ ""
      ECHO " Nothing to destroy."
   ELSE
      DELETE >NIL: T:KnapSack/{argument}
      ECHO " {argument} destroyed."
   ENDIF
   SET know "YES"
SKIP End
LAB inventory
   LIST T:KnapSack FILES LFORMAT "*e[33m   %s*e[31m"
   SET know "YES"
SKIP End
LAB look
   ECHO " This place:"
   ECHO "*e[33m   " 'CD' "*e[31m"
   ECHO " Dungeons:"
   SHOWDIRS
   ECHO " Scrolls:"
   SHOWFILES
   SET know "YES"
SKIP End
LAB quit
   ECHO " You parish in an agonizing fit of boredom!"
   CD "$olddir"
   QUIT
LAB ""
   SET know "YES"
LAB End
ENDSKIP
IF $know EQ "NO"
   ECHO " Sorry, I don't know what {command} means."
ENDIF
RESETINPUT
ECHO NOLINE "> *e[3m"
GETINPUT
ECHO NOLINE "*e[0m"
EXECUTE T:DoCommand $input
```

Personal Dungeon

This adventure script is far from complete. It is simple, however, to add your own commands. First, make a LABel using the command as its name. Next, enter the relevant Shell script, set the "know" variable to "YES" (to indicate that a command was executed), and SKIP to the End label. Remember to get rid of any unwanted output by redirecting to NIL:. Also, if your command needs an argument, check to see if there actually is one.

Torture Test

The script also lacks some error-checking. You can easily break the script by going to a non-existent directory, which could be remedied by using the WARN option of the IF command, in combination with FAILAT.

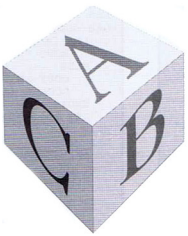
Enjoy exploring DiskLand. If you have any problems with scripting, please contact me, c/- ADU (see page 10 for our address). I welcome feedback and/or suggestions from readers, so keep the fan mail coming. ■

DANGER!

This script alters files. Be very, very careful or lose vital programs forever!

LIVE & LEARN

With Commodore Education's
Russell Robson



BY NOW SCHOOLS on both sides of the Tasman should be well into their term's activities, and the coming year is set to be an interesting one on the education front. The Amiga gained much of its initial acceptance in the education world at primary school level. That is not to say that Amigas haven't found their way into both secondary and tertiary institutions — on the contrary — but in nowhere near the numbers located in primary schools.

Recent surveys also seem to indicate that the majority of these education users are still working with A500 systems, mainly with 1 Mb of memory and up to two disk drives. Unfortunately, it also seems that many still use Workbench 1.3. While this may have provided a good platform in the past, it is far removed from the current "base model" Amiga, which most now accept as being the A1200 HD.

This outdated technology has created many problems, including perpetuating the view (held by many schools), that the Amiga is a slow, virus-infected, nightmarish machine, which is difficult to use. Sadly, this belief has been propagated somewhat, on this side of the Tasman at least, by ill-trained district computer advisors, who, in many cases, have already closed shop towards the Amiga. These same people also served to advise that changing from Workbench 1.3 to Workbench 2.x was definitely not to be recommended, as none of the old software would work! In my opinion, those who are advisors should first do some learning.

The other major problem concerns that ugly practice known as piracy. A considerable number of schools unfortunately still operate with a substantial amount of pirated software. I see it as rather ironic that schools attempt to produce exemplary citizens, by teaching them that theft is wrong, yet they openly flaunt stolen property for the children to use.

Are there any points in favour of the Amiga? Definitely yes. Several new programs have appeared lately which should restore faith in the Amiga as an educational tool, one of which is SoftWood's latest offering, Final Writer. While many see this as a professional-quality word processor, too complicated for school use, we view it differently. Notable points make it particularly suitable for education. (See ADU 7 for full review.)

Firstly, Final Writer features an excellent selection of built-in, large fonts. These are essential for school use, as it is rather upsetting for a five-year-old to spend an hour or so on a story, only to print it out and see it take up three to four lines on the page.

Secondly, the program allows children to easily draw circles, boxes and lines, in conjunction with their work. This allows children the flexibility of "desktop publishing", without the associated confusion of setting up boxes, etc..

Thirdly, it allows teachers to access as many of the program's features as the children require, through the customisable tool bar — a great feature which Windows users have enjoyed for some time. The children therefore don't have to use menus unless required. Everything can be done through the tool bar, including loading and saving. It also allows the teacher to expand the features available to the children, as their confidence grows. For example, a teacher could give children access to three different fonts on separate buttons, A, B and C. No messy menus or mind-boggling requesters. The same concept could also be applied to colour, or to importing a picture, which is often confusing for teachers at the best of times. The downside of Final Writer? Printing is notoriously slow! Maybe next time...

Other points of interest on the New Zealand education front include the soon-to-be-publicised "Learning Link", which, in conjunction with Telecom, is set to give all New Zealand schools access to an online network, similar to the K12 network, to which many other schools around the world (including Australia), have had access for some years. Commodore Education have worked in conjunction with the developers of this network to ensure that Amiga users enjoy access, using the very popular Giftware software package, Term. While this is somewhat limited to those using Workbench 2.0 or above, it does give schools an added reason to update to 2.x.

Finally, a new release of significant proportions on the software front.

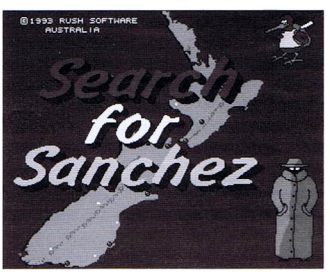
Search for Sanchez in Australia
Search for Sanchez in New Zealand
Rush Software

Every now and then, a software package appears on the market that takes the computer world by storm. Many years ago one such package appeared — the now famous Where in the World is Carmen Sandiego?, which many say was the beginning of interactive fiction. The popularity of this program saw Carmen Sandiego develop into a series, with such titles as Where in Time?, Where in Europe?, Where in Space?, and Where in the USA? appearing in recent times. While Carmen Sandiego may have visited many places in the world and had many adventures along the way, Australia, and even more so, New Zealand, do not appear to be on her list of desired hide-outs.

Sadly, it is unlikely that Where in Australia? or Where in New Zealand? will ever eventuate. Luckily, the team at Rush Software have had the insight to create a character named Sanchez.

Search for Sanchez is a program based loosely on the Carmen Sandiego idea of searching for a criminal. To do so, children must employ general knowledge, as well as geography skills, mapreading and more. The program is aimed at ages nine to adult, although it could be used to extend more gifted, younger children.

The adventure begins with the notion that a RUNT (Real Untidy Nasty Type) agent or criminal has escaped somewhere in New Zealand or Australia (depending on the version). Children must answer questions and solve problems, in order to chase the criminals around the country and eventually arrest them. For example, children may be given a list of four cities, along with latitude and longitude coordinates. They must then look up the city nearest that location and travel there. Assuming the problem was solved correctly, the child is one step closer to catching the criminal.



The program also comes with logic puzzles, which must be solved before the RUNT agent is finally caught, providing an interesting twist to the original Carmen theme.

Overall the program provides an excellent alternative to the Carmen series. All sounds and graphics are both interesting and appealing. As it stands, the programs represent excellent value and are a must for all primary schools.

That's all for now. Happy learning until next time. ■

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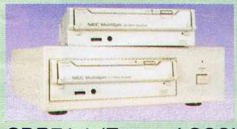

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***Dudley Storey III** takes a break from his regular Imagineer column to bring you a roundup of the third-party products available for use with Impulse's Imagine.*

imagine Companions

THIS TIME AROUND, I'd like to take a break from tutorials and introduce some utilities that will make your work with Imagine easier, faster, and more effective. Notice I didn't say more creative. Any creative potential lies in your own imagination, and is fed by entirely different sources. These utilities will help to translate your vision faster into bits and screen images, and may even provide some inspiration, but they are only tools, not digital muses. No tool is a substitute for creative imagination. In other words, don't fall for the belief that a shiny new program will make your Imagine images instantly great. In fact, each will demand that you understand more about the basic workings of Imagine to get the most out of them.

With the release of Imagine 3.0 in Australasia imminent, I've included details, where applicable, for Imagine 3.0 compatibility or upgrades for these products, direct from the authors and distributors themselves. ■

Video Times Objects

Video Times ■ Australia

David Sloan in South Australia has created two sets of object disks, strong on science-fiction vehicles, especially Battle-Tech type robots, the armoured destroyers popular in Japanese cartoons — Disk 1 contains two such automations — and the designs of futurist Syd Mead. Objects based on Mead's OrniPod land vehicle concept and a "wonderwall" or media station are in the first and second disks, respectively.

After the first disk was released, David had more requests to follow up on the "background" objects featured in it, which include a candle and candlestick, spotlight and gel light (with brackets) and a magnifying glass. Bowing to popular opinion, the second disk features a fairly detailed kitchen chair, table, and a toaster. At A$19 each, these object collections are especially good value. Hopefully, David will add to, and expand on these, creating more cycle-ready (or the animated equivalent for Imagine 3.0) objects.

Essence

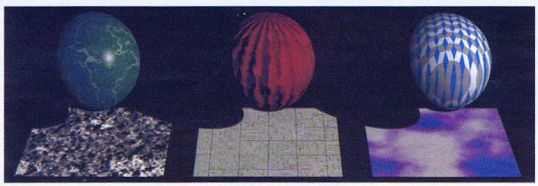
Apex Software Publishing ■ USA

Essence is a library of textures and attributes which can be used in place of those supplied by Impulse. The most frequently used word in the Essence manual is "cool" and that's exactly what these textures are. Want to texture map a basketball court with regulation lines for your Humanoid players to jam on? Essence has it, along with more than 60 others — most, much more useful. Essence Volume I contains such diverse textures as veined marble, Mandelbrot, multiple checks, bricks and tiles (designed to map perfectly on to spheres and cylinders), tree bark, even a programmable digital clock! It's also strong on textures built around fractal procedures. Such textures produce chaotic or "noisy" effects such as clouds, gas and smoke, swirls and turbulence. Many of Essence's main textures have fractal alternatives — "bands" for example, a variation on Imagine's "linear" texture, has a fractal counterpart that blurs and convolves the edges of the colour band, for effects like Jupiter's striped clouds.

Essence Volume II, soon to be released down under, includes textures like lizard skin, fungus, veined and even one to simulate a dried-up river bed!

Upgrade packs are now available for both texture collections. The upgrades feature improved and bug-free texture algorithms (rendering speeds have been increased up to 200%), optimised for 68030 and 040 processors, alpha channel support, and attribute libraries.

For those interested, author Steven Worley and partner-in-crime Glenn Lewis actually reverse-engineered the texture specifications from Imagine, in order to create Essence, because no information was available from Impulse on the subject!



Apex will also soon release Forge, a stand-alone program for manipulating Imagine or Real 3D textures. Forge will allow you to modify textures interactively, with standard Amiga slider controls, rather than punching in numbers. Results can be viewed applied to a number of primitives, with changes reflected in realtime, sequenced for animation, then saved as texture presets or bitmaps, which can be further manipulated in a paint program.

3.0 UPDATE

Impulse have corrected the texture handling in the new Imagine, so, contrary to rumour, all Essence textures will work with Imagine 3.0.

Imagine Mailing List

Compiled by Michael B. Comet
Steve Mund
Mark Oldfield
Dave Wickard

Originally started by Steven Worley, and now edited by a committee, the Imagine Mailing List is available to anyone with access to Internet mail. Simply mail to the following address:

imagine-request@email.sp.paramax.com

And add the word "subscribe" in your subject line. One posting of the Mailing List is FAQ (Frequently Asked Questions), a guide of suggestions, hints and tips for novice Imagine users. Most of the variables for the Essence textures used in the picture above were suggested by the contributors to FAQ#3.

Understanding Imagine 2.0

Steven Worley ■ USA

In the pantheon of Imagine power users, Worley is a god. (Not *the* god — that's Mike Halvorson). Like Clapton, he may not have invented the instrument, but he surely is a master of it. In addition to writing Essence with co-author Glenn Lewis (as well as the upcoming Forge), he's also written a tome for we mere mortals scrabbling up the slopes of Olympus. His "Understanding..." books are an almost compulsory addition to Impulse's manuals (which improved after the infamous Imagine 1.0, but not by much). To me, he's the only one who's ever explained Imagine's Forms editor with clarity.

Understanding Imagine 2.0 is unfortunately out of print now, after five press runs, but you still may find an unsold copy. Not only is the book well written, with clear explanations, diagrams and useful tips, but Worley also lets his sense of humour run riot. *Very* highly recommended.

3.0 UPDATE

"Understanding Imagine 3.0" is definitely on the cards, says Steven Worley.

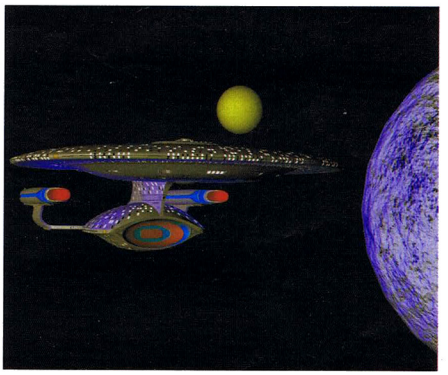
Enterprise NCC-1701D

Carmen Rizzolo ■ Italy

Many Imagine objects created by others are available in the Public Domain, retrievable from Bulletin Boards or other collections. This is one of the most impressive I've found. I don't even want to *think* about the amount of time Carmen put into creating this model of *Star Trek: The Next Generation's* Enterprise. Every detail has been carefully researched and finely crafted — there are more than 500 windows, and even the ship's identification, built in polygons (the model uses no brushmaps, in order to conserve memory), is proudly emblazoned on the upper saucer hull.

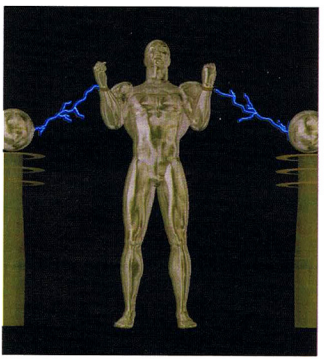
Needless to say, such a detailed model takes a *lot* of memory to render. Carmen recommends at least 11 Mb. The picture at right was produced in scanline mode on an Amiga 3000 with 12 Mb of Fast RAM, and still took three hours to render.

With the file archive containing the Enterprise model, Carmen has included "The Imagine Organiser", a friendly, fairly lengthy and very useful column of his hints and tips on using Imagine 2.0, written in AmigaGuide format for easy access.



Humanoid

Crestline Software Publishing ■ USA



Reviewed in ADU 5, Humanoid is the definitive set of human models for Imagine. Cycle-ready, with morphable head, torso and hand targets for different expressions of emotion, speech, body movement, and gesture, Humanoid comes in male, female, and muscular male models, in high and low density forms. Every Humanoid owner should soon receive the child object updates promised upon registering the product. *(See Best of the Best on page 42 for further information.)*

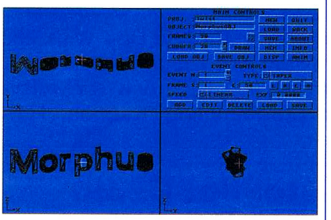
3.0 UPDATE

Crestline will be supporting Imagine 3.0's states and skeleton models as soon as details become available. Registered owners of Humanoid will receive free upgrades of these compatible models.

Morphus 1.1

Impulse ■ USA

What is it about these Italians? Do they have something I don't? First Carmen Rizzolo, now Guido Quaroni, who wrote Morphus. Known as PoNgo in Italy, Morphus is a compilation of four Imagine utilities — Morphus itself, StageGen, and two tools for creating waves — ShoWaves and Visualiser.



In one of its simplest applications, Morphus gets around the technical problem of morphing objects with different topologies (number of points, edges, etc). As you should know, Imagine requires that both the original (or "source") and end (or "target") objects in a morph have the same numbers of points and faces. If they lack even a single common point, Imagine will refuse to do the job. How, then, do you morph between uncommon objects such as a sphere and a plane? Morphus can force a morph effect between multiple objects, but the results can be unpredictable. Morphus has nine other tools — translation, scale, rotate, shear, taper, twist, bend, radial bend and waves. These effects can not only be used to modify an object, but also to animate it, acting like added Effects, to produce multiple effects happening at the same time, or used sequentially in Morphus's "events" animator. Waves, for example, has 40 mathematical, wavelike functions, five of which may be used together at any one time. StageGen works to insert the modified objects in an existing Imagine staging file.

Like the other programs here, Morphus is not a stand-alone product. You'll still need to use Imagine to create objects for Morphus to manipulate.

Morphus reminds me a lot of the earliest version of Imagine. The manual has suffered in its translation to English, and contains only a single tutorial. The program's interface can be difficult to come with grips with, the display is NTSC, and it doesn't multitask. Despite this, the potential of Morphus shines through its faults. For those who need the functions Morphus offers, there is no real alternative.

3.0 UPDATE

Impulse reports that Morphus will be upgraded, presumably to fit in with 3.0's new features.

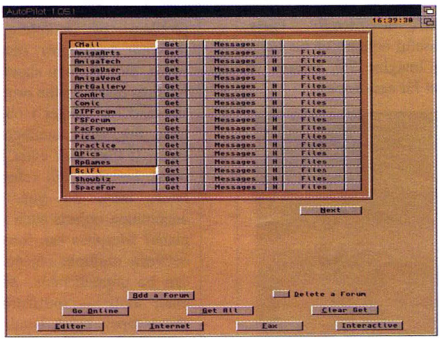
And now for a look at what you can expect to find on Issue 8's rather wonderful PD Disk... How can all you non-subscribers live without such pearls?

The ADU PD Disk

To receive the PD Disk with each issue, subscribe now by filling out the form below.
Also on PD Disk 8 is the relevant code from each of our programming tutorials. Have fun...

AutoPilot Demo
by Steve Ahlstrom

Reviewed on page 36 of this issue, AutoPilot is a CompuServe navigation program for the downloading and offline reading of news. The review should solve any and all queries!



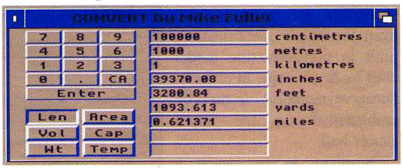
KingCON
by David Larsson

EVER WISHED FOR file completion in your Shell window? You know, type the first couple of letters of that inordinately long filename, press the Tab key, and have your Amiga do the rest of the work... This is just one of the features implemented in KingCON, the Workbench 2+ CON: replacement, which also features an intelligent command history, a scrollback buffer (at last), Intuition menus, a jump-scroll option and the ability to use any (non-proportional) font in your Shell window.

KingCON consists of a handler file and a mountlist entry. Full documentation is supplied in both ASCII and AmigaGuide formats, with instructions for adding KingCON: as an extra console device, or, alternatively, for replacing the existing CON: device with KingCON, ordaining every console window opened with all these great features.

Convert
by Mike Fuller

A rather useful little utility designed for metric and imperial conversions. Need to know how many square metres in an acre, or how many US fluid ounces in a litre? Convert can tell you, with its simple little interface, before you can say "measuring cup". Simply type the variable you know into the appropriate string requester, and Convert fills in the remaining values for all other variables in the selected area. No documentation supplied or required. Just run it!



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Micro-World

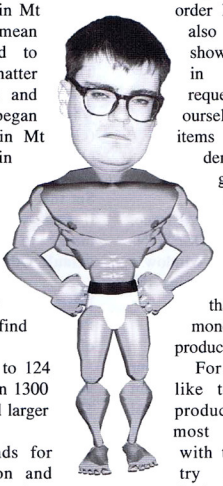
Past, Present and Future

The Past

WHAT ONCE STARTED out in Mt Eden as a very small, and I mean SMALL, shop, has managed to expand to what it is today in a matter of 18 months. Simon Barton and Zane Hemingway began Micro-World as Micro Pro's in Mt Eden Rd, managing to survive in a shop no bigger than the average-sized lounge, with no room to swing a cat and where stocktaking took five minutes. But from that small acorn did a big oak grow, and it wasn't long before they needed to stretch their legs and find more accommodating premises.

And so the move was made to 124 Symonds Street, where more than 1300 square feet of showroom allowed larger ranges of software and hardware.

BCom graduates and friends for more than eight years, Simon and Zane both have the background to manage what has today become a fast and furious business in the competitive market of computer-related retail.

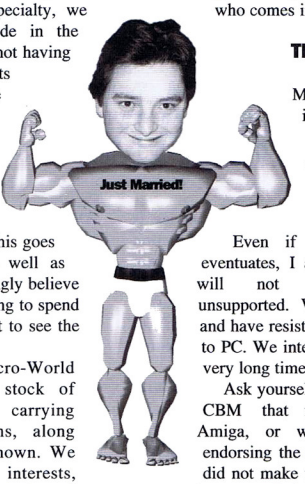


The Present

Micro-World now looms above "Spaghetti Junction", where people have come, at times, to simply admire the view. Although mail order has become our specialty, we also do a roaring trade in the showroom — and hate not having in stock products requested. We pride ourselves on having items in stock to demonstrate, to give customers firsthand information before they buy: this goes for hardware, as well as software. We strongly believe that customers planning to spend money deserve the right to see the products working first.

For that reason, Micro-World like to keep a good stock of productivity software, carrying most well-known items, along with the not so well-known. We try to cover all interests, including video, DTP and audio hardware and software. If you can't find it on our shelves, simply let us know and we'll do our best to obtain it for you.

You won't find collars and ties at Micro-World, but you will find staff more than willing to try and answer any queries in regard to purchases. You're always welcome to browse, and if you're really lucky, you might even get to see the stripper who comes in from time to time!



The Future

Many people get the impression that the Amiga will go down the tubes, due to rumours of Commodore's uncertain future. Even if the worst scenario eventuates, I am sure that Amigas will not suddenly become unsupported. We all have Amigas and have resisted the urge to transfer to PC. We intend to be around for a very long time!

Ask yourself this question: was it CBM that made you buy the Amiga, or was it your friends endorsing the actual product? CBM did not make the Amiga great: they just supplied it, so why can't somebody else? ■

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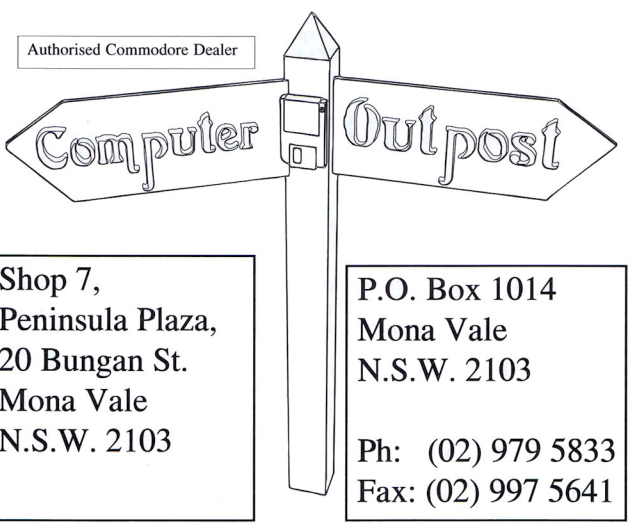

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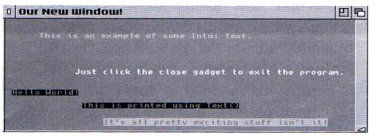


Aaron Koolen *demonstrates Windows...*

THE SECOND ARTICLE in the series is finally here, after the first brief introduction to C. This and future articles will be Amiga-oriented, focusing mainly on OS 1.3 features (v34). Many users now have 2.04+ (v36+), but I will not explore that (yet), to allow 1.3 users to benefit from the column also.

This month we will look at Intuition windows, one of the features you initially notice on the Amiga. We will begin with a rundown on the NewWindow structure needed to open a window, and then put it together with a small demonstration program. Learning the NewWindow structure is the biggest part — after that, actually opening a window is a piece of cake, so don't be surprised at the small size of the demo program. Here is the structure you need:

```
struct NewWindow {
    SHORT LeftEdge, TopEdge;
    SHORT Width, Height;
    UBYTE DetailPen, BlockPen;
    ULONG IDCMPFlags;
    ULONG Flags;
    struct Gadget *FirstGadget;
    struct Image *CheckMark;
    UBYTE *Title;
    struct Screen *Screen;
    struct BitMap *BitMap;
    SHORT MinWidth, MinHeight;
    USHORT MaxWidth, MaxHeight;
    USHORT Type;
};
```

LeftEdge, TopEdge

These two fields specify the position at the top left corner of the window relative to the screen the window is opening on.

Width, Height

Specify the dimensions of the window.

DetailPen, BlockPen

DetailPen specifies the colour for details like system gadgets and any text that appears in the title bar. BlockPen is the colour used for blocks of colour, like the title bar.

IDCMP Flags

IDCMP stands for Intuition Direct Communication Message Port. When opened, your window has a port with which to communicate with Intuition about menu selections, gadget presses, mouse movements, etc.. These are called Messages. This field tells Intuition what Messages you are (and are not) interested in. I'll leave discussing IDCMP Messages in depth until next issue. However, we will use the CLOSEWINDOW Message to wait until the window's close gadget is clicked, before quitting the example program.

Flags

These flags specify information about your window, like what system gadgets you want in it, etc.. There are a number of special Intuition-only flags which I will not describe here.

WINDOWSIZING, WINDOWDRAG, WINDOWDEPTH, WINDOWCLOSE

These specify that you want size, close, depth gadgets and/or a dragbar.

SIZEBRIGHT, SIZEBBOTTOM

If the flag WINDOWSIZE is set, the window will have a sizing gadget in the bottom right corner, which makes the window's inner size smaller, along either the right or the bottom border. These flags control which border is thickened to accommodate the gadget. The default is SIZEBRIGHT. Other custom gadgets can be added to the border of the window (like proportional gadgets), to use up the extra space.

SMART_REFRESH, SIMPLE_REFRESH

Intuition is able to save the parts of a window which become obscured by other windows, and restore them once they become visible again. This feature is called "smart refreshing". "Simple" refreshing turns off this feature.

SUPER_BITMAP

This flag will give you an area for your window that is larger than the window frame. You can scroll this large area around to see certain bits of it at will.

NOTE: You will have to provide your own BitMap structure for your window to use.

BACKDROP

If set, your window will always be placed behind all other windows. BACKDROP windows cannot be depth-arranged.

GIMMEZEROZERO

This rather bizarre flag will generate separate areas (RastPorts) for both your window and its border. This allows you to draw freely all over the window, without trashing the border. The downside is that it takes more memory and can be slower refreshing.

BORDERLESS

Creates your window without a border. It works well with the BACKDROP flag, in that you can place an effectively invisible window over your screen at the back of all other windows, and still receive IDCMP messages when no other windows are active.

ACTIVATE

Will cause your window to be active on opening.

FirstGadget

This field points to the first gadget in the list of custom gadgets you want opened when your window opens. System gadgets (close gadget, etc.) are not included.

CheckMark

Set this field to point to an Image structure if you want this window's menu checkmarks to be something other than the default. Otherwise set to NULL.

Title

Pointer to null-terminated string for the title of the window.

Screen

This points to the screen the window will open on. It only needs to be set if you are opening your window on a custom screen. (i.e., Type=CUSTOMSCREEN)

BitMap

If you have set SUPER_BITMAP, this must point to your own initialised BitMap structure: otherwise it is ignored.

MinWidth, MinHeight, MaxWidth, MaxHeight

These fields set the maximum and minimum dimensions that your window can be sized to. -1 in the MaxWidth and MaxHeight field will allow the window to grow to the size of the screen it is on.

Type

This specifies the type of window: either WBENCHSCREEN or CUSTOMSCREEN.

Once we have opened our window, we probably want to print some text to it. This can be done in a couple of ways. The quicker method is by using the graphics library routine Text(), which simply prints a string of text to a RastPort (our windows RastPort), at the current window X and Y graphics cursor positions. We can also print text with more control, by using the PrintIText() function, which allows us to position the text and set colour and draw mode, as well as font. We will use this method first. Here's what the structure looks like.

```
struct IntuiText
{
    UBYTE FrontPen, BackPen;
    UBYTE DrawMode;
    WORD LeftEdge;
    WORD TopEdge;
    struct TextAttr *ITextFont;
    UBYTE *IText;
    struct IntuiText *NextText;
};
```

FrontPen and BackPen

Set the colours for the text.

DrawMode

Selects the rendering style of the text. There are four styles:

JAM1

Uses only the foreground colour. The background colour is transparent.

JAM2

Draws both the foreground and background.

COMPLEMENT

This exclusive-ors (XORs) the bits to the RastPort.

INVERSVID

Draws in inverse video mode.

LeftEdge and TopEdge

Specify the relative position of the text. We can also position the text more as the PrintIText() function accepts origin coordinates for the text. The coordinates passed are added to the LeftEdge and TopEdge values to determine the real position of the text.

ITextFont

This holds a pointer to a TextAttr structure describing the font we want to use for this text. If NULL, the system default fonts are used.

IText

Simply the null-terminated text we want to print.

NextText

Allows us to link many IntuiText structures together and print them all in one call.

The PrintIText() function takes four arguments as follows:

```
PrintIText(struct RastPort *,struct IntuiText *,WORD,WORD);
```

The first parameter is the RastPort of the window. We can get this from the Window-› RPort field. A RastPort is an area of memory used for drawing graphics, usually initialised by opening a window. The second argument is the address of our IntuiText structure. The last two are the X and Y origin positions of our IntuiText structure. Remember that the LeftEdge/TopEdge positions in our IntuiText structure are added to the X/Y positions passed to PrintIText() to determine the real position. Once the text has been printed, the RastPort's current colours, draw mode, and cursor position change as dictated by the values of the IntuiText structure.

The other way of printing text is the Text() function. It simply takes the RastPort pointer, the address of the string to print and the number of characters to print as follows;

```
Text(struct RastPort *,char *,WORD);
```

The text is printed at the current RastPort cursor location in the current colours and drawing modes. There are routines supplied for positioning the cursor and setting the colour and drawing mode, but for now we will simply use the Move() function to position where the text goes. This is the format for the function:

```
Move(struct RastPort *,SHORT,SHORT);
```

The last two arguments are the X and Y position, to which the cursor must be moved.

NOTE: When positioning the cursor for printing text, we have to take into account the baseline of the font the text is being rendered in. For instance, with the standard topaz-80 font, the baseline is set at 6, so if you wanted the top left corner of the text to be at position 0,0 you would have to draw it at position 0,6 (i.e., add the baseline value of the font to the Y position of your text).

Demonstration

What follows is a simple program that shows you how to open a window. It also prints some text to the window, using both Text() and PrintItext(). When you have finished looking at it and playing with the window, simply click on the close gadget and the program will quit.

That's it for another issue. Next time I will look into IDCMP messages — how to receive, use and reply to them — and also move on to drawing more graphics in your window and adding gadgets. If you have any questions, or ideas on what you would like to see in future articles, feel free to write to me C/- Amiga Down Under. Until then, cheers! ■

```
#include "intuition/intuition.h" /* For Window-handling stuff */

/* To make our program look a bit nicer, we can use typedefs. */
typedef struct IntuitionBase * IntBasePtr;
typedef struct GfxBase * GfxBasePtr;

/* Now declare variables to hold the library bases */
IntBasePtr IntuitionBase;
GfxBasePtr GfxBase;

/* Declare a variable (ourWindow) to point to the Window that we
are about to open */
struct Window *ourWindow;

/* The window's RastPort (found in the Window->RPort field). */
struct RastPort *ourRastPort;

/* Now we declare our NewWindow structure. It holds all the
information about how we want the window to look. As the Flags
field indicates, it will have the standard system gadgets
attached, and will become the active window onced opened. */
struct NewWindow ourNewWindow = {
    60,0,       /* LeftEdge,TopEdge             */
    520,180,    /* Width, Height                */
    0,1,        /* DetailPen, BlockPen          */
    CLOSEWINDOW,/* IDCMPFlags                   */
                /* The close gadget will quit our program */
    WINDOWDRAG|WINDOWSIZING|WINDOWDEPTH|WINDOWCLOSE|ACTIVATE,
                /* Flags                        */
    NULL,       /* No special gadgets as yet    */
    NULL,       /* No special checkmark either */
    "Our New Window!",  /* Title                */
    NULL,       /* No screen pointer needed for workbench */
    NULL,       /* Not super bitmap so no need for this   */
    100,100,640,256, /* Min and Max values                */
    WBENCHSCREEN     /* What type of screen it's going on */
};

/* Now some linked IntuiText structures to print a few different
pieces of text in the window. These structures are declared in
reverse order, so that the address of ourIntuiText4 exists before
ourIntuiText3 tries to use it. */
struct IntuiText ourIntuiText4 = {
    2,1,
    COMPLEMENT,
    140,160,
    NULL,
    "It's all pretty exciting stuff isn't it?!",
    NULL
};
struct IntuiText ourIntuiText3 = {
    2,0,
    INVERSVID,
    100,70,
    NULL,
    "Just click the close gadget to exit the program.",
    &ourIntuiText4
};
struct IntuiText ourIntuiText2 = {
    2,3,
    JAM1,
    50,20,
    NULL,
    "This is an example of some Intui Text.",
    &ourIntuiText3
};
struct IntuiText ourIntuiText1 = {
    1,0,
    JAM2,
    10,100,
    NULL,
    "Hello World!",
    &ourIntuiText2
};

main() {
    if(OpenLibraries()) {       /* Open Intuition */
        if(CreateWindow()) {    /* Open our window */
            /* Print the text to our window using PrintIText() */
            PrintIText(ourRastPort,&ourIntuiText1,0,0);
            /* Print some text using Text() and Move(). Note that
            this is in the same colour and drawing mode as the
            last IntuiText printed. */
            Move(ourRastPort,110,130);
            Text(ourRastPort,"This is printed using Text().",29);
            /* Wait for the CLOSEWINDOW message. */
            WaitPort(ourWindow->UserPort);
            /* Get rid of the message */
            ReplyMsg(GetMsg(ourWindow->UserPort));
            DestroyWindow();        /* Close the window */
        }
        CloseLibraries();           /* Close libraries */
    }
}

OpenLibraries() {
    IntuitionBase=(IntBasePtr)OpenLibrary("intuition.library",01);
    GfxBase=(GfxBasePtr)OpenLibrary("graphics.library",01);
    return(GfxBase && IntuitionBase);
}

CloseLibraries() {

    CloseLibrary(IntuitionBase);
    CloseLibrary(GfxBase);
}

CreateWindow() {
    /* NOTE: We pass the ADDRESS of our NewWindow structure
    (&ourNewWindow) because ourNewWindow is an actual NewWindow
    structure not a pointer to a NewWindow, structure. */
    ourWindow=(struct Window *)OpenWindow(&ourNewWindow);
    if(ourWindow) ourRastPort=ourWindow->RPort;
    return(ourWindow);
}

DestroyWindow() {
    CloseWindow(ourWindow);
}
```

ps. Pages Made to Measure

In this look at the PostScript language, ***Norbert Haley*** *calculates the meaning of life, and stores it on the stack...*

IT IS NOT easy to program in PostScript, so maybe it is best to throw ourselves in at the deep end once more.

```
%! PS maths to follow

/a 11 def
/b 22.4 def
/text (urgghh mathematics !) def
/answer true def
% definitions finished
% /show {print} def
% un-comment the previous line if you
% want to save paper!
/Times-Italic findfont
12 scalefont setfont
100 700 moveto
a b eq {(That's right!) show}{(That's
wrong!) show} ifelse
100 600 moveto
a b add bufferstring cvs show
(That's a+b) show
100 500 moveto
a b mul b a sub div bufstr cvs show
( =(a*b)/(b-a)) show
100 400 moveto
a cos bufstr cvs show
(cosine of a) show
100 300 moveto
/tan {dup sin exch cos div} def
a tan bufstr cvs show
(tangent of )show a bufstr cvs show
100 200 moveto
answer {text show} if
showpage
```

At the beginning of this file, several variables (storage spaces) have been defined. The "a" and "b" variables represent numbers; the "text" is a string (limit 64 Kb! linebreaks ignored); and the "answer" is so-called Boolean, which means either "true" or "false".

Before we go through the file, remember that the ***stack*** is the concept, which you need to grasp. PostScript is a stack-oriented language, which, although awkward at first, is brilliant.

Enter the "Interactive Mode" and let's place things on the stack. Don't bother typing the text behind the "%": just hit return.

```
23 45 670 % hit enter-key
890 (YEAH!) %
pstack % print the stack for control
pstack % yes, they are still there
moveto
pstack % show what's left after moveto
lineto
pstack % show what's left after lineto
stroke
pstack % now there's only a string,
print
pstack % and now there isn't!
showpage % not really necessary here
```

The "pstack" command allows you to look at the stack, which, as you can see, works after the LIFO principle: Last In First Out. Any command which needs data to process, will take what it needs from the top of the stack. It doesn't matter what kind of data is on it, as long as that data relates to the appropriate commands. The "print" command outputs the data to the console (as "show" does on paper).

Truth, Justice and Equality

Where it says "a b eq " in the original file, the "a" variable (11) is put on the stack, followed by the "b". The "eq" compares the top two elements on the stack (and takes them off); if they are the same (EQual), it puts a "true" back on the stack. 11 is not the same as 22.4; therefore there is a "false" on the stack.

The "ifelse" command looks for a Boolean element on top of the stack and executes the first subprocedure for a "true", the second for a "false". Procedures are in curlies.

The "add" takes the top two elements off the stack, adds them up and puts the result back on the stack.

The "cvs" converts the number into a printable string, via the "bufferstring" variable. This bufferstring is not particularly useful, but needs to be there.

Likewise "sub", "div", and "mul" allow you to calculate. For angles, one can use sine and cosine, but tangent must be defined "by hand", as shown — it is not in the original PostScript command set.

Finally "if" does the procedure, if it finds a "true" on the stack.

After all this dry maths, it might be wise to have another look in the bag of tricks. Suppose you want to print outline fonts, and fill them with something else.

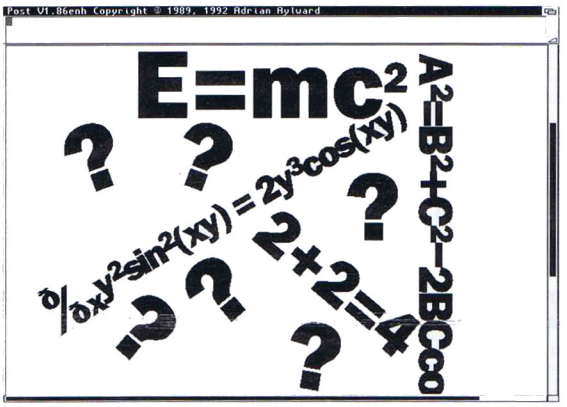
```
%!
2 5 scale 50 50 translate -20 rotate
% manipulate coordinate system
/Times-Italic findfont 120 scalefont
setfont
0 0 moveto % the usual font voodoo
5 setlinewidth
(B) true charpath gsave stroke grestore
.5 setgray fill
showpage
```

This strokes a line on the outline of that letter, and because that path was saved, uses it again to fill it with 50% gray. Warning: the path has limited capacity — you can overload it quickly, when using readymade letters, sign and numbers. Parameters which influence the behaviour of the path are "currentflat", "setflat" and "flattenpath". You might have to do each letter separately, or write a routine to do it for you.

The scale command is used here again to distort the image. Translate shifts the origin, and the rotate command rotates counterclockwise, for positive numbers, around the origin (x=0 y=0) of the page. To use landscape pages, the appropriate command would be:

```
90 rotate 0 -612 translate
```

You should be able to use "scale", "translate" and "rotate" by now, which should provide enormous image-altering capabilities.



Enough graphic fun for this lesson! And finally, another taste of stack logistics. Stack manipulating commands are "exch", "dup", "pop", "index", "copy" and "roll". You are strongly recommended to learn these, and check their functions in interactive mode with "pstack".

"exch" exchanges the top two elements.

"dup" duplicates the top element.

"pop" takes the top element off the stack and discards it.

"index" duplicates an element, which is located "top elements" deep. The top element's position number is zero.

"roll" rolls elements according to the top two elements. Don't ask; just experiment with this command — most useful, when you understand how it works.

"copy" duplicates the elements beneath the top one, "top element" deep. Its other clever functions are too difficult to explain at this stage.

Homework is to familiarise yourself with all we have covered in the last three articles. Next lesson will include typing and more operators. ■

COMPETITIONS

Tornado

How many pages comprise Tornado's manual?

Answer this question on the back of an envelope, along with your name and address, and you could win this great game!

Post your entries to:
Tornado Competition, c/- ADU
(See page 10 for address)

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Lost Treasures of Infocom

How many games make up the Lost Treasures?

Place your answer on the back of an envelope, along with your name and address, and post your entries to:

Infocom Competition, c/- ADU **(see pg 10...)**

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Conditions of Entry

The winner for each competition will be drawn at random from all correct entries received by Friday, 29th April. All winners' names will be published in ADU 10. Entries are limited to one per person, for each competition, and all entries must be accompanied by the appropriate coupon. The judges' decision is final, and all correspondence regarding results will be filed under "T" for Trash.

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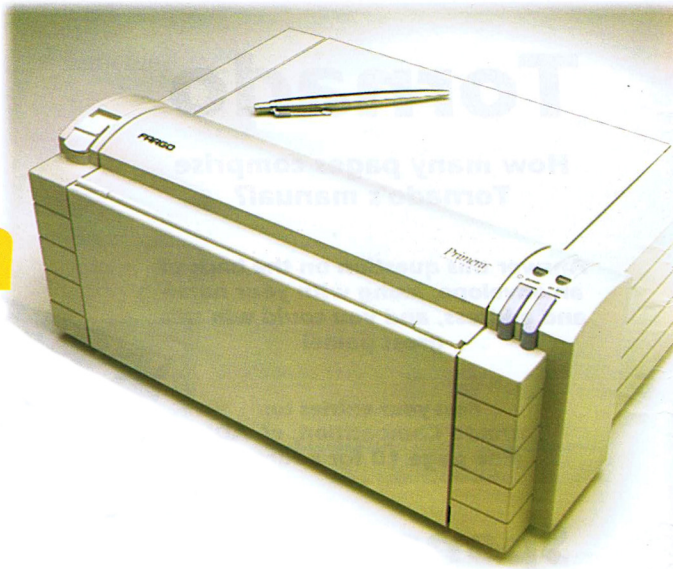
With products previously available for not less than five figures, the dye-sublimation market has been rocked by the release of a model which retails for a tenth of that price. ***Grant Berridge*** *gives his verdict on...*



Primera

Fargo ■ USA

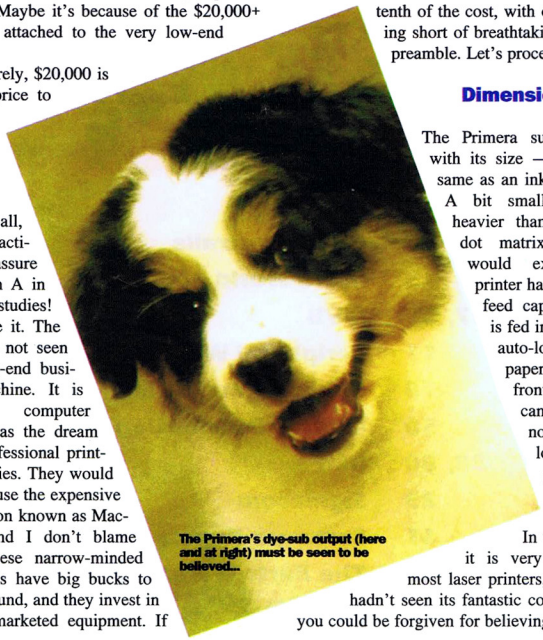
ADU APPROVED

IN ADU 3, I pointed out that there was a printer for almost every need. Dot matrix, ink jet and laser printers were the tools of the trade. It has come to light recently, however, that I was short-sighted in the extreme with this list, for far beyond the capabilities of any of these, are the supreme rulers of the printing world.

I must have been trapped for too long in my sheltered universe of home computing, for it never dawned on me that any Amiga user could have a use for the printers of which I speak. Blindly, I watched each issue of our fine publication march out the office door on SyQuest cartridge, bound for the printing agency. How could my vision have been so clouded? Of course Amiga users have a use for the highest form of printing technology available!

Aside from photographic plates, the dye-sublimation and wax-transfer printers are the ultimate in hard-copy perfection, producing dazzling, true-to-life output. So why do we often neglect these gems of computing technology in a discourse on Amiga printer options? Maybe it's because of the $20,000+ price tag attached to the very low-end models!

But surely, $20,000 is a small price to pay for such crystal-clear results. After all, they practically assure you of an A in social studies! Let's face it. The Amiga is not seen as a high-end business machine. It is not a computer regarded as the dream of all professional printing agencies. They would prefer to use the expensive competition known as Macintosh, and I don't blame them. These narrow-minded individuals have big bucks to throw around, and they invest in the best-marketed equipment. If you stack up $20,000 next to a full-blown Macintosh Quadra network in a printing studio, you will see that it is but a small drop in the bucket. It makes sense to plug a dye-sub monster into a Mac's DINky serial port, because you've already shelled out megabucks. The same is not true of an Amiga.



The Primera's dye-sub output (here and at right) must be seen to be believed...

So why am I going on about it? Because I have new-found faith in the Amiga, thanks to a new arrival on the Amiga printer market. The Primera printer finally brings dye-sub and wax-transfer technology into the realm of the home computer user. The price tag puts its closest rival to shame — fully one-tenth of the cost, with output nothing short of breathtaking! Enough preamble. Let's proceed...

Dimensions

The Primera surprised me with its size — about the same as an ink jet printer. A bit smaller, though heavier than my 9-pin dot matrix. As you would expect, this printer has no tractor-feed capability, but is fed instead by an auto-loading paper tray at the front. This tray can receive normal-sized loose leaf paper, such as A4, US Letter etc. In this respect, it is very similar to most laser printers, and if you hadn't seen its fantastic colour output, you could be forgiven for believing that it was a laser model. However, the Primera can also accept transparent plastic film for display on overhead projectors, and T-shirt transfer paper, so that you can wear your favourite ADU cover on your chest. The transparency bonus was quite unexpected, although I can see a huge range of uses for it. Teachers, university lecturers and professional public speakers (in particular) could have no end of fun producing fantastic colour slides for their presentations.

Note that I am definitely not kidding about the quality of print that the Primera produces. Using GVP's image-processing program, ImageFX, I printed several 24-bit colour images using the wax-transfer mode of printing, and the difference between the on-screen Ham images and the hard copies was startling. I was expecting to be writing about the paper image's inconsistency and poor resolution, but instead found that the printout was much clearer and better defined than the screen. The Amiga's frustrating Ham-fringing rendered text on one of the images I printed, completely illegible. The Primera has no such deficiency, and I could read the words as clearly as they were intended.

Wax Transfer

The wax-transfer mode is the standard type of printing that the Primera is equipped to handle. This process involves a wax ribbon and a very clever heating arrangement inside the printer. The basic principle is that several thin films of molten wax of differing colours are pressed on to the paper, namely cyan, magenta and yellow. To achieve a specific colour, the printer applies varying amounts of C, M and Y wax to the paper, in much the same way that a painter mixes paint on a palette, or the Amiga mixes red, green and blue on your screen.

This would seem to suggest that the paper

See Primera at:

The Comworth Systems Stand

ComputerWorld Expo
March 23 — 25
Ellerslie Racecourse
Free Entry

or see your dealer for a demo...

Dealer enquiries see page 79

will emerge in a sticky state, so that a careless thumb might smear the molten wax across the image. In the spirit of experimentation, I decided to run my fingers and nails over the surface of the image as it was being printed. I succeeded only in putting indentations on the paper with my fingernails, removing none of the wax. Undaunted, I announced that the wax would surely crack and peel if I folded the paper. I was again proved wrong. If anything, the paper becomes more durable to wear and tear, due to its protective coating. The wax also lends an attractive, glossy shine to the paper, and at an arm's length, you could very easily mistake a printout for a blow-up of a photograph. Closer inspection will of course reveal the dotty, dithered texture, which indicates that the picture was printed from a computer.

When I printed a picture on the plastic transparency, I found that the wax was slightly easier to remove with my fingernails, so these hard copies should be treated a little more delicately. The projected image was better than any other slide I have seen, either at school or university, with the colours showing up surprisingly well.

The method of colour mixing makes it very difficult to produce true black. For this reason, an alternative ribbon is available, which also has black wax and requires an extra pass during the print. There is also a ribbon designed specifically for greyscale printing, which has only black wax. Neither this, nor the CMYK (four-colour) ribbon is supplied with the printer. However, the standard, three-colour CMY ribbon seems very adequate for most purposes.

Resolution

The maximum (and only) resolution of the printer is about 200dpi in both vertical and horizontal directions. Most laser and ink jet printers boast 300 to 360dpi. Your Amiga's monitor is 75dpi. This means that in order to fill an A4-sized page (21.0 by 25.4cm after accounting for the top and bottom margins), the Primera printer, at maximum resolution, would require a picture approximately 1680x2000 screen pixels in size. A 24-bit colour image of that size takes up about 10 Mb! I had no such memory-hogs to play with — most of my pictures were in the 800x600 range. If you wish to print a small picture larger, you will have to tweak the dpi setting of the program you are using, if possible, or else scale the picture up.

In contrast, DTP programs can make use of the maximum resolution of printers in a rather sophisticated way. They store their pictures as a collection of lines and curves, not as pixellated bitmap images. This way, whether your output device is 75dpi or 300dpi, the image size and the information stay the same, but the clarity differs. The page you are reading right now looks dotty and pixelly on the monitors at ADU, but the printer output is of rather high quality, so the jaggies disappear (unless you look REALLY closely). Some printers have a built-in weapon for battling jaggies, known as PostScript. This wonderfully sophisticated programming language is specially designed to make printed images look more attractive. Sadly, it is the only feature lacking in the Primera. In order to use this printer to its full potential, you either need truly massive bitmaps, or a good DTP program, such as ProPage 4.1. The old standby, DPaint, holds its images in chip memory, so the size and colour information is limited to either 1 or 2 Mb (in some cases 512 Kb). Also, DPaint can't yet hold 24-bit images. I think it is fair to say that DPaint is not capable of pushing the Primera printer to its limits, but I know you will be impressed with the results anyway.

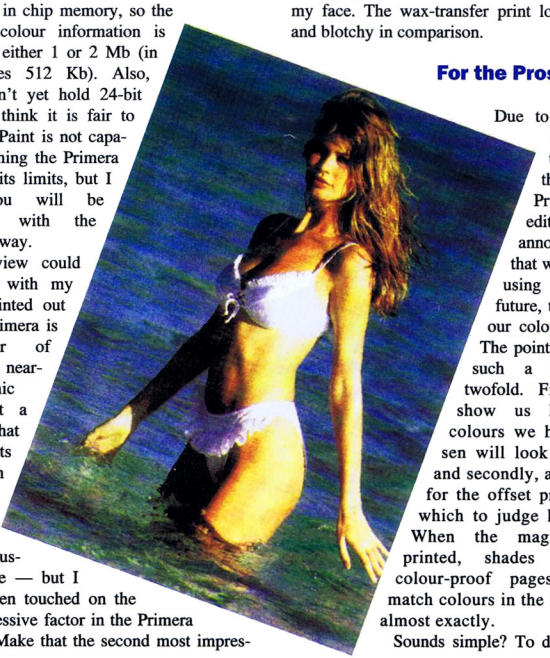
My review could end here, with my having pointed out that the Primera is a printer of incredible, near-photographic quality, at a price that really casts doubt on the honesty of the printer industry at large — but I haven't even touched on the most impressive factor in the Primera make-up. Make that the second most impressive factor, because if the price tag read $20,000, the feature I am about to describe would be fairly standard.

> "...a price that really casts doubt on the honesty of the printer industry at large."

Dye-Sublimation

What can I say? Take a look at the front cover of this magazine, and ask: "Why can't my printer output colours like that?" The Primera can. You have the option of installing a dye-sub "ribbon" in place of the normal wax-transfer type. The process of exchanging ribbons is trivial. Just lift out one tray, and drop another in. The dye-sub ribbon is more expensive: approximately NZ$9.60 per page (NZ$960 for the ribbon and 100 pages of paper). The paper supplied with the ribbon is the only kind of paper that will accept the dye adequately. The process of dye-sublimation is similar to that of wax transfer, I am told, but employs higher temperatures, producing colours truer to the intended image.

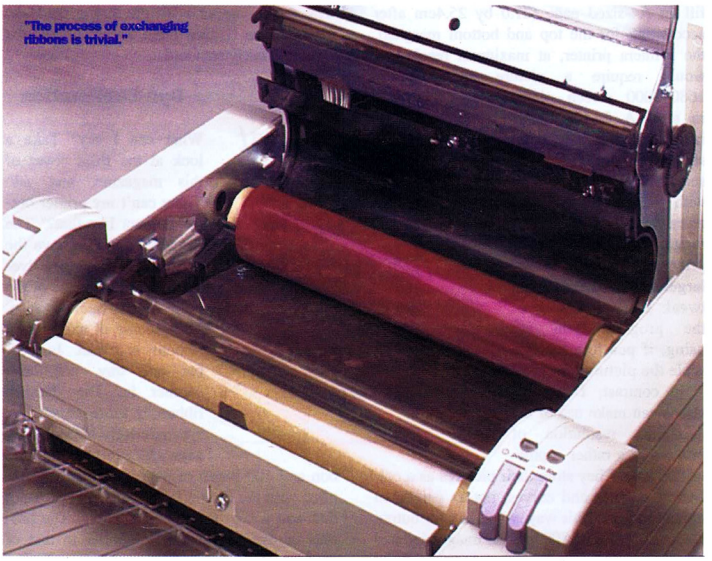
This is the breathtaking part. I printed the same image twice, first with a wax-transfer CMY ribbon, and then with a dye-sub ribbon. While the latter was printing, I studied the wax picture. In all honesty, I couldn't imagine that the dye-sub picture could look any better: the wax image looked exactly like the screen (I am lucky enough to own a 24-bit display card). I was totally unprepared for the quality of the dye-sub output. With no exaggeration, the picture I printed could have passed for a photograph —until it was about 30cm from my face. The wax-transfer print looked dull and blotchy in comparison.



For the Pros...

Due to the successful trials of the Primera, our editor has announced that we shall be using it in future, to provide our colour proofs. The point of taking such a proof is twofold. Firstly, to show us how the colours we have chosen will look in print, and secondly, as a guide for the offset printer, by which to judge his work. When the magazine is printed, shades on the colour-proof pages should match colours in the magazine almost exactly.

Sounds simple? To date, using


"The process of exchanging ribbons is trivial."

chromalin proofs, it has cost about NZ$140 per page to do this. It also takes at least 24 hours for the offset printing company to complete the job. The Primera can complete the job in one-seventieth of the time — for one-twentieth of the price. At NZ$3370, ADU's Primera will have paid for itself within two months!

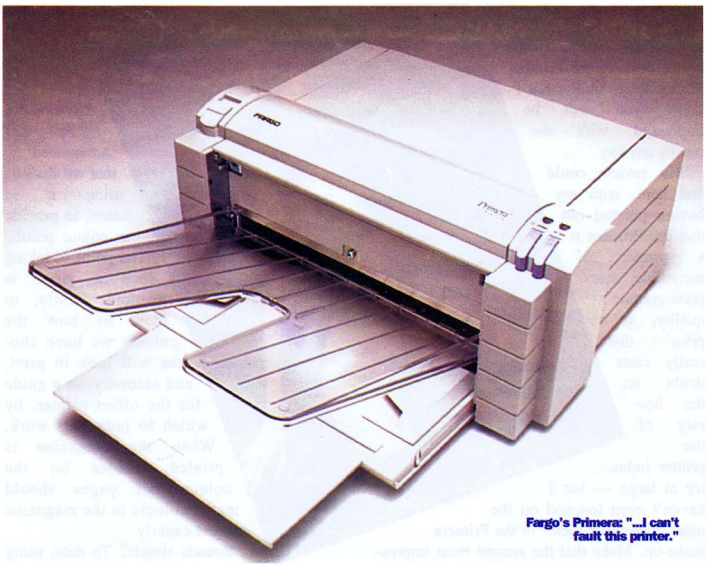
Only one printer font is available, in one size, which would imply that the Primera is not really designed to produce screeds of text. Research seminars would benefit from the transparency option of the Primera, but essays and the like would probably be better served by a PostScript-compatible laser printer for about the same price. A laser is certainly cheaper to run (the Primera's wax mode averages out to NZ$1.60 per page, and, as mentioned, the dye-sub mode, to NZ$9.60.) Time is also a factor. A single page of wax-transfer printing takes about three minutes. Dye-sublimation is a lengthier process, consuming upwards of thirteen minutes per page.

The Verdict

The simple interface belies the complex nature of the printer. There are only two buttons on the control panel, one being On/Off. The other is the On Line button — an indication that operation of the printer should be within the capabilities of any user. If there is any problem, the well-presented manual should offer a solution. There is, of course, a custom printer driver supplied for the Amiga, installed simply by double-clicking one icon. The standard Commodore installer program has not been used, which is politically incorrect in this day and age, but the install script is explained fully in a supplementary manual. One other point worth mentioning is the obscure — albeit convenient — way that Fargo have used the normal PrinterGFX Preferences density setting, to represent the type of ribbon being used. Density usually refers to the amount of ink you want to be stamped into your page by a dot matrix-style printer. It can have a value between one and seven, one being a very light print, and seven being very dark. When you use a Primera printer, however, a density setting of one means you are using a CMY wax-transfer ribbon, and four means a CMY dye-sub ribbon.

In summary, I have to say that I can't fault this printer. Maybe the dpi rating could have been higher, but what can you expect for this price? It is somewhat expensive to run, which is in its favour, because its closest competitor is *ludicrously* expensive in comparison. The print quality is legendary, and the simplicity of use is in the mother-could-do-it range. If you like pretty pictures, buy a Primera. They don't get any prettier. ■

Supplied for review by Comworth Systems


Fargo's Primera: "...I can't fault this printer."

PRIMERA
NZ$2495 A$1995

SPEED ★★★★☆
FEATURES ★★★★★
EASE OF USE ★★★★★
MANUAL ★★★★★
VALUE ★★★★★

OCS / 1.3 ✓
ECS / 2.0 ✓
AGA / 3.0 ✓

96%

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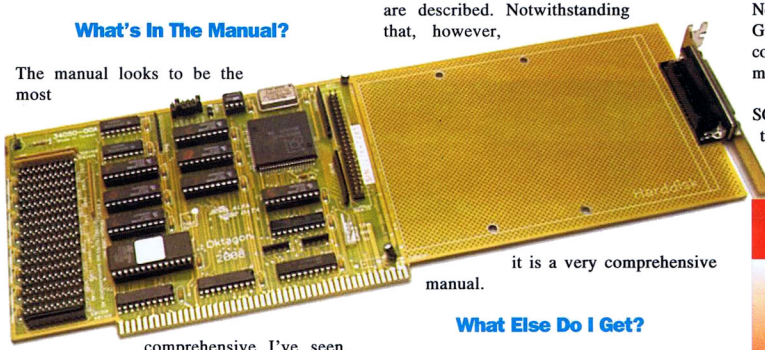
Continued from page 33

Increments of 2 Mb are configurable. It uses the same ZIP chips as those in the A3000. Not exactly the most user-friendly chip to install; susceptible to bent pins. Four chips for a 2 Mb upgrade, making a total of 16 sockets. Jumpers need to be set for each 2 Mb set.

What's In The Manual?

The manual looks to be the most



comprehensive I've seen, certainly for a SCSI/RAM card. The 63 pages in the English section cover all aspects of installation, configuration and setup. All technical specs and pin configurations are included, as well as a page on tricks and tips.

Which Bit Do I Read?

It looks as if there is one manual for all AlfaData cards, as a fair selection of others are described. Notwithstanding that, however, it is a very comprehensive manual.

What Else Do I Get?

Software includes HDInstTools, OktagonMount (SCSI device mounter), RAMTest, UnlockInsite (access Insite Flopticals), IfLogIn (user passwords). All pretty foolproof and covering everything you'll need.

GigaMem

You also receive a bonus copy of GigaMem, the German virtual memory software. Normally retailing in excess of NZ$150, GigaMem is an ideal companion to a SCSI controller and gives excellent value for your money. See page 16 in ADU 6 for more info.

Overall more standard features for a SCSI/RAM card, but more software options than you can poke a stick at, and GigaMem free! ■

Supplied for review by Ami-Tech

OKTAGON2008
NZ$495 A$345

SPEED ★★★★★
FEATURES ★★★★★
EASE OF USE ★★★★★
MANUAL ★★★★★
VALUE ★★★★★

OCS / 1.3 ✗
ECS / 2.0 ✓
AGA / 3.0 ✓

88%

Primera

ADU APPROVED

Primera Colour Printer from **$1995**
Full colour glossy prints at an affordable price. This printer can easily be upgraded to Dye Sublimation for photo-realistic output!
Includes Workbench Preferences driver. We stock the full range of consumables including:

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Thermal transfer ribbon 4 colour	**$119**
Monochrome (black) thermal ribbon	**$119**
Thermal transfer paper - 200 sheets	**$ 25**
A4 transparency film - 50 sheets	**$109**
T-Shirt transfer paper - 10 sheets	**$ 60**
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Elizabeth Corish brings you

GAMES MASTERY

WELCOME DUDES, TO another action-packed hints and tips column, especially now that the magazine has gone to a monthly format. You can expect the latest and greatest tips a whole lot faster!

Zool 2
(Gremlin)

First head for the options menu. Enter the word BUMBLEBEE, then begin the game. To skip levels, simply push the return key.

Elite II — Frontier
(Gametek)

There are plenty of tips about for Elite II, but here are some extras for those who are stuck.

Essentially there are three main territories: Imperial, Independent and Federation. It makes sense to trade various goods depending on the system. Federation is ideal for basic items; be careful about high risk activities, such as narcotics and slave trading. Imperial is ideal for nerve Gas, which is easy to obtain. Independent worlds have other benefits, even though technology is not one of them. Note: Venturing into new systems will usually bring about a confrontation or two.

Cash

To get some cash, head for ROSS 154; purchase animal meat on Merlin; head for Birmingham world in the Barnards Star system; give them this meat, and obtain computers or robots, which can sell for big bucks later.

Try the Sol system at (0,0) to generate some cash. Head for the Mars spacestation, and try the second advertisement, showing the title "Goods bought and sold" to buy your illegal items here. Once you have a little cash, try the Imperial system. Load up with hydrogen fuel and go to Vequess (0,-4). Purchase a cargo life support system, put on board as many slaves as you possibly can, head for Facece (0,-4), and sell them to a trader for a profit. For the return, check out the naval ad on the bulletin board; there are a heap of missions to increase cash and status all in the Vequess system.

Funnily enough, the quickest way to increase your riches is to trade in the illegal black market. Selling information or delivering packages for people is easy money. Check out bulletin boards on planets and space stations for dudes wanting goods; be careful though about traps by police, and save often (just before you trade).

For another way to get some cash, try this little cheat: once you have enough passenger cabins, take on passengers, head to the shipyard, and buy a ship worth less than your own. You will be credited with the difference, and will then be told that you can't buy the ship because you are still carrying passengers. However, your account will still keep the money. Repeat your attempt to purchase this ship until you have untold riches, then carry on with the game.

Travel

To increase your travel, try this wee tip. From the galactic grid map at a range of 660 light years (82.5) grid sectors, you will come across systems that should be out of range. However access is possible using any ship. Note that such a jump only uses up the same amount of fuel as a normal, maximum-range, hyperspace leap. This occurs at increments of 660 light years e.g., 1320, 1980 etc. This works for any star system on the map, thus opening up the entire universe to even tiny craft. You can also locate a couple of settled planets in far-distant places:

0,-1792 Laanbe (large mining and industrial area)
1,-1792 Dazeia (as above)
1, 1792 Oltiso (as above)
0, 2814 Ensoce (as above)

In our next series of tips on this huge game, we will look at buying new ships, assassinations, mining, and much, much more, so stay tuned!

Flood

Level 1 Frog
Level 2 Year
Level 3 Quif
Level 4 Long
Level 5 Word
Level 6 Fred
Level 7 Wine
Level 8 Grip
Level 9 Trap
Level 10 Thud
Level 11 Frak
Level 12 Vine
Level 13 Jump
Level 14 Nill
Level 15 Four
Level 16 Grip
Level 17 Zing
Level 18 Jing
Level 19 Lido
Level 20 Pool
Level 21 Hate
Level 22 Reed
Level 23 Lime
Level 24 Quid
Level 25 Wing
Level 26 Flee
Level 27 Giga
Level 28 Head
Level 29 Loop
Level 30 Sing
Level 31 Joux
Level 32 Pink
Level 33 Gogo
Level 34 Lets
Level 35 Quad
Level 36 Bril
Level 37 Eggs
Level 38 Hens
Level 39 Nail
Level 40 Soap
Level 41 Foam
Level 42 Meek

Jurassic Park
(Ocean)

Here are the codes for the A1200 version of this game (reviewed in ADU 7):

B5A48352
E54C67AA
D5F4AB62
95B48B42
85A4834A
85B48B42
F54C6FAA
C57C77B2
D56C7FBA
A5149F5A

Mean Arenas

For all sorts of goodies try this out. On the password screen enter:

CHEAT

Then begin to find zip enemies. If you grab the bonus item, further cheats are available as follows, if you push these keys:

B (Extra bombs) E (Extra energy)
L (Extra lives) W (Extra weapons)
DEL (Shield) HELP (Skip levels)

Dinosaur Detective Agency

If you run low on energy during the first four levels, try these codes to restore yourself to full health. (No need to pause game.)

Level 1: DINODICK
Level 2: JURASSIC
Level 3: DINOSORE
Level 4: DINOMITE

Note: Should you enter any of the above whilst holding down the left mouse button, you will skip to the end of the level.

Cannon Fodder
(Sensible Software)

To increase the ranks and abilities of your troops, try this tip. Start the game, head to the save game option, and, when asked for a name, enter as follows: JOOLS

You should now see a message flashing at the bottom of your screen: "Cheat mode active". If not, try again until you get it right. "Nuff said."

Elf
(Ocean)

This is for the benefit of Helen Moore of Auckland, and any other lost souls out there.

First locate the raw chicken and the birdseed bowl in the beginning area. Give the seed to the bird, who gives a feather to you. Take this to the Indian and swap for the Indian's headdress, who gives you a piece of old paper. Give this to the person in the loo; get the matches from him and light the fire; cook the chicken. Next, bribe the old sage who can be found near the door, thus enabling you to get to stage two. Now head to the far right. Along the way pick up the axe and apple seed, shoot the magical book down and give this, plus the apple seed, to the wizard. This apple seed will be turned into an apple (beats going down to the greengrocer!), which you give to the vicious guard, thus enabling you to get to the third stage. Next, go and collect the money; give it to the tool sharpener with the axe; get the now-sharpened axe; give it to the weird-looking lumberjack, who gives you a magical spell. Use this spell on the smiling monster, while he is stunned. Grab his teeth and give these to the old lady, who gives you a peg; put this on your nose, in order to get past the evil-smelling troll. At this point buy some goodies, before you have to take on Belbob the spider. Note: Keep away from the spider's side of the screen to ensure your safety, and make sure you kill all the little spiderettes she releases when she reaches the ground. In the second level, retrieve from the underground caves the key and the winding handle; unlock the steel cage (which can be found top right corner) and get the cog. Next, assemble the cog and the handle to the winding mechanism and wind the magic out; take a stroll over to get the boots; give these to the inmate, who will give you a silver flute. Swap this with the Jester before you open the cage with a large key (found outside to the right), which will kill the dangerous rats, enabling you to journey to the oil well. Take the oil can from the left of the map and fill it up at the oil well. Now, when you come across the Jester, dispose of him to retrieve the flute for later (talk about an Indian giver!). Next, use oil on the stubborn handle, pull the lever to jump across the space, and go downwards to enter the last guard captain's place. Be quick in response, or else he will avoid your shots. Also move around; otherwise you will end up with a flat head. Try to move him into a corner and dispense with him with rapid fire, which will enable you to go to the next level.

The secret to completing level three is to turn on the power first in the starting room, and activate the correct platform switches in the right order, as follows: 1 flick, 2 flick, 3 flick, 4 flick, 5 ignore, 6 flick, 7 ignore, 8 flick, 9 flick, 10 flick, 11 ignore. Along the way, hop over any beasties that jump from the water, and avoid the killer plants (the programmer's obviously a fan of the Addams Family). On level four you come across a marsh: recover from the dead guy the dagger, plus the boxing glove. You should see a single switch along your journey; ignore this and move on. Hit the first guard using the glove; get the piece of paper (with password); cut the rope attached to the cage in the air; and take the gold bit that has fallen from it. Go up to the second guard and give him the password, then fight your way along till you come across the Indian chief at the very far end. Give him the gold piece found earlier, thus enabling you to get past and enter the temple, where the temple god will shoot fire and balls of energy. Be careful: whilst its mouth is opening, quickly fire repeatedly and avoid its fire aas you do so.

On level five (you need to do some precise mapping), in the caves, ensure you kill the dwarves along the way. You will also need to locate the bone: give this to the big flapping creature, and go over to the chasm where the halt sign is. Wait. The creature then flies over, picking you up and dropping you on the other side. Enter through the door to get the belt; exit and return to the other halt sign; give the belt and the flute to the blacksmith, who changes the flute into a cross, which is used to get past the bats. Take the piece of machinery, plus the other five left around, and give them all to the inventor creating the time machine. He gives you a sheet of paper, which you give to the dwarf guard, enabling you to visit the dwarf king. You will have to get the three jewels to go past him. After doing so, it's time to fight Henry, who is quite intelligent; after he has made his move, attack. Always keep him under threat by attacking, which also stops him from firing those wretched little balls along the ground. If you kill Henry, you are greeted with level six. You will need to buy some anti-freeze (for your ring), plus a flying spell (to complete the level); there are herbs avaiolable near the start, should you have to collect some in order to buy the goods mentioned above. You also need to find the magical spell, which is split into three parts. When all are gathered, use the spell on the wizard (located on the right of the map, in the tower); he will drop an amulet, which you take; find and take the blowtorch, chisel and mallet; unfreeze the ice block imprisoning the sculptor; and give him both chisel and mallet. Next, locate the earmuffs and give them to the Eskimo; get the ice block and give it to the sculptor; get the ice crown, crown and amulet to the ice king (located left top of level), who then gives you an icicle. Next, head back to the Eskimo and hit him on the head using the icicle (nice game eh!). Take the wheels from his pocket, give them to old Albert for his Zimmer frame, and you now get a key to pass through the last door. When fighting the ice creature, be careful, as he will come through the ground where you are standing. Avoid the snowballs and don't bother firing; after a short period of time you will be allowed through.

Start out on level seven in the castle by watching out for the servants. Timing on jumps is essential. Note the faces in the wall which shoot fire balls out at you, plus the rotating ball spikes. After shooting the glass container, get the pork pie and give it to Teedle Dee, who is clothed in green and red, and who gives you some socks — an effective weapon against the old mother. After she faints, take her stick and put it into the wheel of the cyclist's bike, the object being to stop power being generated. Now press the big red button. The rotating platform will start to move; watch the jump and go for the door to complete this level. Now on level eight, locate all ten bits of the winding mechanism and obliterate them, before going into the last door where Necrilious is waiting. This can be achieved by putting the green crystal into the hole by the door (you will have this crystal by killing all the other level bosses). It won't be long before you have to confront Necrilious, whilst he is flying about on the flying carpet. Aways keep moving; otherwise he will fire at your last known coordinate, when he is hovering above your head. Use rapid fire to dispose of him, after which you get to enjoy the final sequence for a job well done.

Notes: You can find at least two hidden rooms on each level, which are indicated by the screen switching to grey tones, and which are, of course, full of goodies. To locate them, try standing on some clouds which aren't clouds, and remeber that not all walls are solid. Give it a go and search high and low! Alternatively, for infinite lives, all you have to do is enter the word below anywhere during the game:

CHOROPOO

DISCOGRAPHY

by Dudley Storey III and Jason Gibson

Castles II - Siege and Conquest

Interplay ■ NZ$90 ■ A$70

WHEN YOU FIRST see Castle's double-sized case, you could almost believe that Interplay have done the unbelievable and created a two-CD game...unfortunately not. (Who could make a 1.3 gigabyte game, anyway?) The other half of the extra-sized box contains Castle's thick, 61-page manual, all in English.

Placed in the mythical, medieval kingdom of Bretagne, Castles II is actually based on the feudal rivalry of France during the period 1302-1417, a time of war, chaos, political and religious upheaval, and treachery. After the death of King Charles, five claimants are left to struggle for the throne in the absence of a legitimate heir. The overall aim of your role as the Lord of one of the Territories of Bretagne is to subdue the other pretenders plotting for the throne (and your death), unite the divided territories by conquest or alliances, and eventually, with the blessing of the Pope, be crowned king.

It's not quite a god-game — the level of detail fails slightly — and not a wargaming simulation either. Overall, it's about strategy, dealing with the powerful — nobility, clergy, magicians, knights and peasants — of medieval France.

The game opens very impressively, with a deep, dramatic, sampled voice giving the background to the current situation with stereo sound effects and still pictures. You can choose which of the contenders you would like to play, the level of difficulty, and plots (explored later). The computer controls all other characters with artificial intelligence. There is no two-player option.

Success in the game is marked in points. Earn 7000 points and you may petition the Pope to name you King, but others may make it before you do. Points are earned by achievements in three areas — administration, military conquest, and political skill. These three areas may be assigned "tasks" and left to run simultaneously.

Administrative concerns are the day-to-day affairs of the realm — gathering grain, lumber, iron and gold. Each territory supplies only one product, so you'll have to trade with, or invade, others to attain them, or buy them on the black market. You can also build castles with this task. Castles II allows you to plan your own castles from standard modular units of walls, doors, keeps and moats. An impressive castle will not only keep the populace in line, but also inspire them to double the output of that territory. If

Plots is turned on, you'll face more decisions. A peasant populace low in morale may petition for a festival, but such a bawdy event may rankle the priests and be an opportunity for your enemies to harm you. Every decision will have several alternatives, and each will cause repercussions. Alienating the clergy is not a good idea, since they report back to the Holy Father, and the Pope is the only one who will hear your pleas to become Regent.

Military is self-explanatory. The recruitment and supply of soldiers (knights, archers and foot soldiery) is necessary for a strong defence and to build an offensive threat. You can send the army to police the realm (which may catch spies and saboteurs sent by your enemies, but also represses and antagonises the populace), sabotage an enemy, or conquer an adjacent territory. The results of an invasion can be decided automatically by the computer, or fought unit by unit, commanding men individually on the field.

Diplomatic functions maintain your relationships with the other contenders for the throne, and the Pope. You can suggest alliances, trade for goods and gold, call a council, scout an area for resources, and dispatch a diplomat or spy.

Invasion, taking the reports from a spy, holding a fete and several other occasions play associated film clips, taken from some black and white medieval epic. Although not full-motion MPEG by any means, the feature gives a nice, documentary feel to the game. Overall the game's graphics are good, with the exception of battlefield scenes. Most actions are run from a single map screen, with dialogues held in a window.

The greatest fault in the game is that it doesn't play in realtime. Looking at another option stops all other tasks. The blue button on the joypad speeds up processes considerably, but you'll still spend a lot of time looking at the main screen without doing anything else, waiting for tasks to finish.

Unfortunately, CD, by virtue of its design, has no save function — at least until Commodore releases its compatible floppy disk drive for the CD^{32}. The complexity of the game means that you'll have to leave it running, or paused, in order to achieve the crown — even a short, highly successful game could last several hours. It also means that you cannot use the option to save the plans for a good castle, to use as a standard across the land, and must resort to building each one "by hand".

Battlefield scenes fall short of the standard of high-quality graphics used in the rest of the game. The assembled armies lack detail or options for complex tactics. There's also no use of sound.

A great deal of work has gone into giving Castles II authentic medieval characters and situations. It will be interesting to see how it stacks up against the revamped Defender of the Crown, recently re-released on CD^{32}. Until I have an opportunity to see that, Castles II will be my CD strategy game of choice. DS■

Supplied for review by Micro-World

GRAPHICS ★★★☆☆
SOUND ★★★★★
ADDICTIVENESS ★★★★☆
PLAYABILITY ★★★★☆
78%

FireForce

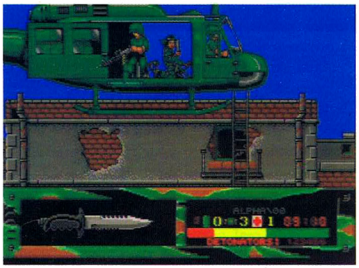
ICE ■ NZ$90 ■ A$70

FIREFORCE IS A Green Beret-style shoot-'em-up featuring a selection of real-life weaponry to blow holes into terrorists and jackbooted scumbags, over twelve difficult (and violent) missions.

The basic idea for each doesn't change much — just kill and destroy everything even remotely unfriendly — but objectives do, varying from destroying an enemy bridge or SAM missile site, to eliminating an enemy dic-

tator.

Before each mission, a full intelligence briefing outlines mission objectives, type of terrain and the kind of enemy you are most likely to encounter. From there you are given the opportunity to select hardware from the armoury. A tremendous amount of equipment is on offer, including five varieties of machine-gun (the huge M60 being my favourite), as well as grenades, a rocket launcher, C4 plastic explosives and health-restoring medi-kits.



You can take whatever combination you wish: however, a weight limit means you must choose carefully. It is possible to search any bodies you come across, to boost flagging supplies, so don't be too concerned if you run out.

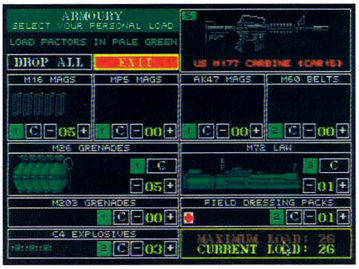
Your default weapon is a rather large knife, which is only effective at close range, but does have a nifty throat-slitting effect. Other weaponry (if you have any), can be selected at the press of a button, with the machine-gun being the most effective for dispatching the enemy with a single burst at any range. Ammunition is limited, however, so don't get too carried away.

With a fairly strict time limit on each mission, it's most important, after completing your objective, to get to the pick-up point (usually to the far right of the playing area) before it runs out. Otherwise you'll be left behind and your career will be over — status MIA (missing in action).

After each successful mission, medals, commendations and promotions will be awarded for performance above and beyond the normal call of duty.

At first, FireForce doesn't look like much, but given half a chance, you'll find it's actually tremendous fun to play. Somehow the violent realism makes for compulsive entertainment. The ability to choose a whole arsenal of varied weaponry, (as well as searching bodies and buildings), helps to make the game that much more interesting.

That said, FireForce is tough: some missions are very difficult, especially with the added hassle of getting to the extraction point on time, which will cause a few headaches I'm



sure. FireForce won't be everybody's idea of fun, but it certainly had my adrenalin pumping, and hopefully yours will be too. **JG**

Supplied for review by HotPoint

GRAPHICS ★★★☆☆
SOUND ★★★★★
ADDICTIVENESS ★★★★★
PLAYABILITY ★★★★★
75%

Seek & Destroy

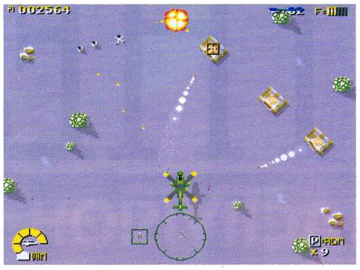
Mindscape ■ NZ$90 ■ A$70

EVER WONDERED WHAT it would be like to fly a high-tech, military helicopter, armed to the teeth with all manner of weapons, intent on shooting anything that moves — all at a frantic pace? If so, Seek and Destroy is the game for you.

Your mission is to pilot an Apache helicopter in a look-down style (like Alien Breed), circular-motion, simulation exercise over a number of progressively difficult stages. Over snow, desert, water and jungle terrain, you must use every ounce of flying ability (along with a fair amount of trigger finger), to successfully complete each mission.

A wide range of weapons is at your disposal: Chain Gun, FFAR (Folding Fin Aerial Rockets), AGM (Air to Ground Missiles), Sidewinders, Napalm, and my favourite, Air Strike —perfect for wiping out large concentrations of enemy. The Chain Gun has an unlimited supply of bullets: all other weapons are limited, so must be used wisely. Offering limited protection is a shield, which will sustain five hits before leaving you open to enemy fire.

Some of the buildings you destroy will contain bonuses, which can be greedily snapped up to replenish dwindling supplies. Weapon bonuses may be retrieved by flying over them; however, you must land to pick up fuel and shield bonuses, which can be frustrating, especially while under heavy enemy fire.



Among the "Hostiles" out there ready to make Swiss Cheese out of you are helicopters, armour, rocket launchers and infantry, most of which you will have to "neutralise" before going to the next mission.

Before each mission begins, a quick briefing outlines your objectives. From there you set out from your home base to wreak mayhem and havoc amongst the enemy. Upon completion of your assigned task, you are instructed to return to base, where you must land before continuing.

For a military helicopter, the Apache certainly sucks up the gas, so it pays not to hang around too long; otherwise you will run out of fuel and crash. This was how I died nine times out of ten — normally just as I was on my way back to base, which had me pulling my hair out a few times, I can assure you.

The air to ground missiles can be pretty annoying also, as they seem to lock on to hangars or jeeps, rather than the more hostile adversaries, resulting in many wasted attempts.

I did expect to see a little more graphics-wise in this game and the sound was also lacking at times. Nonetheless, there are good sampled speech effects, and both features were more than satisfactory.

The game play is difficult — it's certainly not a game you can master in a short time, believe me. I can only conclude that Seek and Destroy will not appeal to everybody, but some will just love it. **JG**

Supplied for review by Vision

GRAPHICS ★★★☆☆
SOUND ★★★☆☆
ADDICTIVENESS ★★★★★
PLAYABILITY ★★★★★
80%

THE ACTIVISION GAME GRID

by Dudley Storey III and Jason Gibson

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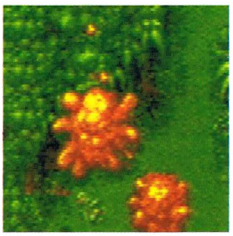
Cannon Fodder

Sensible Software ■ NZ$99 ■ A$50

AS THE INTRO song says: "War — it's never been so much fun", and Cannon Fodder is no exception. Sensible Software have released a real corker; this would have to be the best action/strategy/shoot-'em-up available today. Not only will the intro music have you humming to yourself for at least a week, but it's also great fun to play.



Basically the game consists of controlling a small squad of brave soldiers through 24 gruelling missions, spread over 72 increasingly difficult phases, each requiring your band of tiny heroes to destroy enemy buildings and/or kill all enemy soldiers, rescue hostages and even escort civilians to safety. All this over a multitude of varying landscapes, which include freezing Arctic wastes, barren desert, English moorlands — even steaming jungle, complete with spear traps, quicksand, angry natives and trip wires!

Before you say this sounds like a simple run and shoot affair, there's also the ability to utilise a number of different vehicles, such as Jeeps, Tanx, Skidooz, BigGunz and Choppas (unarmed Transportas or Killas), all of which can be used to run over or squash hapless enemy soldiers too slow to move out of the way.

Splitting up your team is where the real fun begins, adding a whole new dimension to the game. Your squad can be split into a maximum of three teams, each of which can be commanded to carry out separate tasks. Any team not under your direct control will automatically defend themselves against passing enemies. On some missions, it is absolutely essential to split up your team to be able to finish. For example, using one soldier to distract the enemy, while another sneaks around behind to dispatch him.

The control system couldn't be simpler — completely mouse-controlled. The left mouse button controls movement; the right fires the machine guns; and left and right together make use of any grenades or rockets you may happen to have. Bullets come in an unlimited supply. However, grenades and rockets are restricted. but

can be replenished by picking up crates scattered throughout most levels.

After each successful mission, survivors will be awarded promotion (up to the top rank of General), and an honour roll for those unfortunate enough to snuff it, as well as an extra fifteen fresh recruits to add to your surviving army — believe me, you'll need them! Between missions is also the time to save your game to disk, allowing you to try again if you don't do so well.

My only real complaint is that some of the missions are particularly difficult, verging on the near-impossible, and solutions are by no means simple. There could have been more weapons, but that is a minor point.

Some of the action can be quite bloody at times, but I'm sure there won't be too many complaints about that. The sound is good, giving an atmospheric feel to a game which is graphically excellent in most respects, although enemy soldiers can be difficult to see, especially on jungle missions.

All in all, Cannon Fodder rates highly on sheer entertainment value — a game you'll want to come back to time and time again, if only to better your previous best effort (mine was to finish with the loss of only 72 lives).

GAME OF THE MONTH

I recommend Cannon Fodder as an essential addition to any game collection, and remember: "'War — it's never been so much fun." **JG**■

Supplied for review by Micro-World

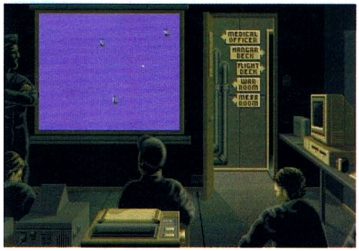
ADU APPROVED

GRAPHICS ★★★★☆	OCS / 1.3 ✓
SOUND ★★★★★	ECS / 2.0 ✓
ADDICTIVENESS ★★★★★	AGA / 3.0 ✓
PLAYABILITY ★★★★★	95%

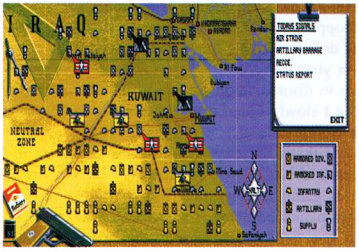
Combat Air Patrol

Psygnosis ■ NZ$89 ■ A$90

ANOTHER FLIGHT SIM, but this one inspired directly by the Gulf War. Combat Air Patrol has as its main attractions the F-14 Tomcat, the F-18 Hornet, and the opportunity to kick Saddam Hussein's butt. Like the Tornado, the F-14 has a variable-sweep wing design, but this is ignored in the simulation.



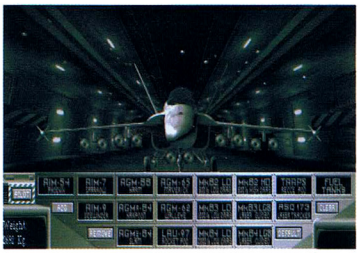
The Gulf is the perfect, undemanding environment for a flight sim — flat, barren and featureless, except for what is man-made (conditions that also made it ideal for fighting a war). That means that Psygnosis can get away with modelling relatively few objects, and keep demands on the game small. They've made up for the lack of detail with a great range of options. Firstly, you can fight in the context of Operation Desert Storm from the very first day of the conflict, both as Coalition commander (ordering airstrikes, reconnaissance missions and artillery barrages, and moving men, vehicles and supply units into Kuwait and on to Iraq, if you so decide); and as a pilot (executing the missions in an F-14 or F-18 that will ensure victory). This is where Tornado should have commanded the field, but did not (the option for a planned campaign was withdrawn from the Amiga version).



Again, like Tornado, you can practise many different missions (intercept air targets, take out bridges, land and sea convoys, trains, airfields, bunkers and shelters, destroy artillery units, army bases, SCUD and SAM sites, factories, oil rigs, radar systems, and more) or link up with another Amiga through a null modem cable to play two aircraft. During missions your team and wingman will report on the situation with sampled voices (in deep-fried Southern accents), giving new waypoint headings, aircraft damage, and such like. While aboard your launch carrier, CVN-71, the USS Theodore Roosevelt, you can select your pilot for a mission, take in a briefing on the objective, military support, and expected resistance, read a weather report hot off the printer, arm and fuel your aircraft, and command the Coalition forces in the war. All in a day's work.

CAP is unique in two respects. First, the ability to nuzzle up to an air tanker while in flight to refuel to fight more battles. Careful handling is necessary to mate up with the fuel line hanging from the back of the tanker. Secondly, the Tactical Aircraft Mission Planning System, or TAMPS, which allows you to view and alter the plotted course of your mission in real 3D (defined by waypoints positioned in space, and the velocities or vectors between them). Nice handling of this tactical tool by Psygnosis. You can blink threats in and out, focus on the target, spin around to view the scene from any angle, and adjust most waypoints. Unfortunately, this can only be done on board the carrier — waypoints are not adjustable once in the air.

Airborne, the usual array of different interior and exterior views of the aircraft apply. Most are standard, but the pilot's interior view, looking around the cockpit, in which the entire screen scrolls, is pretty cool. There are few sound effects, besides the pilots chattering at each other — no weapon release sounds. Music is scant.



Psygnosis have had a development time of almost three years since the Gulf War (or the "West Asian conflict", as the US military now calls it) ended, but CAP still leaves the impression of being rushed to market without adequate bug-testing or documentation. The copy protection system, for example, seems slapped into place, unmentioned in the manual (the required password information is actually hidden in the chapter headings). The impressive opening intro on the first disk fails to load the game after it's finished, meaning that you must boot from the second one, and requesters for the third disk are misleadingly labelled "CAP#2". The method for acquisition and destruction of targets, particularly ground vehicles, is never really comprehensively explained.

In addition, in "single flight" mode, your computer-controlled wingman and team mates will probably find and destroy the target before you do, particularly if you use one of CAP's options and "pop up" immediately over the target, as soon as you start the game. F-16s will usually supply support and air cover for ground attacks, or scramble to intercept incoming aircraft.

For the question of "flavour versus fun," CAP definitely falls more into the fun category. Psygnosis have tried to transfer some of the elements of the Gulf War with which we all became familiar in 1991 — tracers from anti-aircraft fire arcing between the ground and the sky, and the terse military commands given over radio. While it can be appreciated as a serious flight-sim/wargamer, it's also easy to jump into the cockpit and blast a few Scuds without too many controls to memorise. As a simulator, it's ambitious for a first effort, but needs fine-tuning. DS■

Supplied for review by HotPoint

GRAPHICS ★★★☆☆
SOUND ★★★☆☆
ADDICTIVENESS ★★★★☆
PLAYABILITY ★★★★★

OCS / 1.3 ✓
ECS / 2.0 ✓
AGA / 3.0 ✓

78%

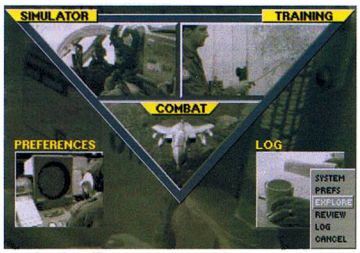
Tornado

Digital Integration ■ NZ$105 ■ A$90

PANAVIA TORNADO GR.4 Interdictor/Strike: A high-speed, two-crew, multi-environment aircraft, designed to penetrate deep into enemy territory, flying nap of the earth, often under cover of darkness, to surgically destroy enemy installations. Its sister, the F.3 Air Defence Variant, is an endurance warplane, specialised in intercepting incoming enemy aircraft and stopping them outside a defensive perimeter. Unlike most other aircraft, the Tornado uses a variable-sweep wing design, in which the wings can be pushed forward for greater control at lower speeds, or raked back for high-speed acceleration.

Tornado, the simulation, is one heavy game, and I mean that literally — a 300-page manual, technical supplement, fold-out key guide, four maps and four disks make up no lightweight package. It's also an extremely detailed and realistic flight simulator.

This realism extends to the constant use of

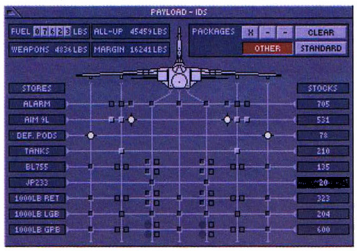


digitised military images, from the opening screens and within the program icons, to the parade of armed vehicles in the game's 3D library (a common feature in simulators), which has also been boosted by digitised Ham images of the actual weapons.

If ADU gave games scores for "interface", Tornado would receive top marks. Everything has been laid out in a consistent, logical manner that's a pleasure to use. That's important in a flight simulator with as many features as Tornado. There are extensive options for training under different conditions (cross-wind landings, for example), which include a "simulator" inside the simulator! It even has three, different, in-flight, options levels for jettisoning weight from the aircraft, for use in an emergency landing, coming in low on fuel. It also has numerous auto-pilot controls — auto-trim, auto-throttle,

altitude and heading lock, terrain following mode, track mode (which will even control weapons delivery automatically, under most circumstances) and automatic landing approach. You'll find yourself using many of these, particularly in the Interdictor. During a night attack, the aircraft may be flying only 200 feet above the ground for optimum radar avoidance, at a velocity greater than the speed of sound. There's no margin for error in such circumstances. Terrain following will hug the aircraft to the land, following each hill and vale at a programmable "ride height".

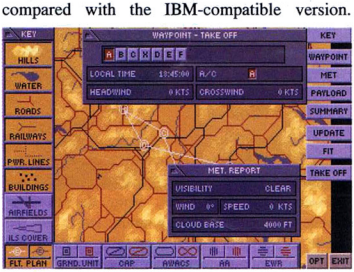
Being a two-crew aircraft does not make the



Tornado a harder warplane to fly. Digital Integration have cleverly used the cursor keys to allow the pilot to hop back into the navigator's seat, to take advantage of mapping facilities there, usually leaving some of the auto-pilot systems on. Many of the pilot's controls are duplicated for the navigator, with the addition of an analogue clock, warning panel, and two video displays, which can show the view of a forward camera, a thermal imager and laser designator (just like the Gulf War!), and three different maps.

With the divergent roles of the aircraft — one ground-attack, one air — there's good detail all round. The landscape features realistic trees, textured hills, detailed vehicles and ground emplacements. The air has wind and clouds — Tornado is the first simulator I've seen that accurately models the loss of visibility inside a cloud.

However, I'm really annoyed by what the designers have left out of the Amiga version, compared with the IBM-compatible version.

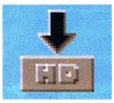


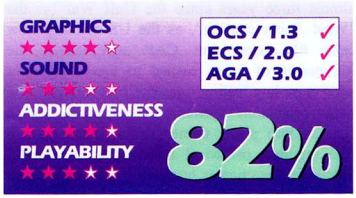
Modem support is lost (although two Amigas parked side by side can still be linked, using a null modem cable) for two-player mode. The ability to generate your own missions or campaigns, alter flight waypoints or command squadrons of fighters (a major wargaming-type feature in the IBM version, taking up a good part of the manual), are also discarded, leaving you with only preset missions. The lack of these features is neither explained, nor excused, in the technical supplement. In short, this gives me an extreme case of PC-envy. As a flight sim, Tornado is very good; it's knowing what has been left out, what could have made it brilliant, which leaves a slightly sour aftertaste.

The accuracy of Tornado means that joystick twitchers, flying under conditions of absolute realism, will find the limits of the aircraft very

quickly, just before meeting the ground. As the manual explains, in the real world, engineering limits and the forces of physics place constraints on flight performance, and Tornado reflects these. There is no "accelerate to warp speed and stop on a dime" arcade gameplay here. Things can and will go wrong — the wings buckling and tearing off if left raked forward for too long at too high a speed; spins and stalls (the manual has a spin recovery drill); engine fires; etc. However, on the plus side, Tornado is probably the greatest contender for "realism" in current Amiga flight sims. If you thirst for low-level, high-speed operations — the sort of action that leaves you picking twigs out of your teeth afterwards — Tornado is for you. **DS■**

Supplied for review by HotPoint





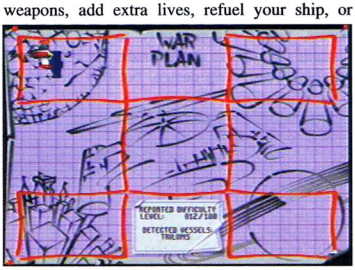
Stardust

bloodhouse ■ NZ$99 ■ A$90

THE PLOT OF STARDUST concerns...well, forget about the plot. All you need to know is that it's delivered in a *Star Wars* pastiche ("In a distant galaxy, a long, long time ago..."), before the action starts. And that in the era of *Star Wars* was a classic arcade game called Asteroids, played on a chunky, monochromatic screen. Those who lived through the seventies, that decade currently enjoying a tasteless revival, might remember it. ("Yeah, I played arcade games when they were all black and white.")

So it's another shoot-'em-up, an Asteroids for the 90s. But, like this turbulent decade, things have changed apace. The asteroids are now fully 3D — beautifully rendered rocks tumbling through space and exploding magnificently in stereo sound. The backgrounds are also colourful and very well done.

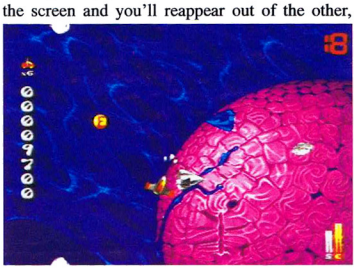
You have the choice of eight levels inside a section. Each may hold enemy spacecraft, in addition to the constant menace of asteroids. Time is of the essence — there's a limit to how long you can shoot at rocks, and the power of your shield and lasers decrease with use, and must be recharged with the icons that tumble out of (surprise!) destroyed asteroids. Other icons increase your score, supply you with more weapons, add extra lives, refuel your ship, or



unleash smart bombs. Clear the level of asteroids and enemy craft, and you can go to the next.

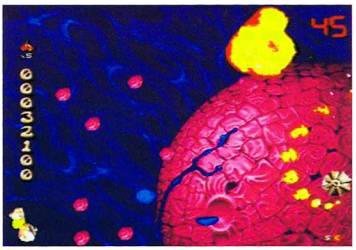
At the end of each section is the usual, huge, baddie spaceship. Destroy this and journey to the next section through a warp tunnel, with more asteroids flying at you.

One thing I could never really get a grip on was Asteroid's warped Moebian universe and its direction controls. Accelerate towards one side of the screen and you'll reappear out of the other,

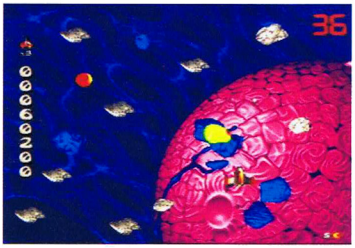


still going in the same direction. Laser fire does this also. Your ship has no retro-rockets — pulling back on the stick activates the shield. Stopping means turning opposite to your motion of drift and giving the rockets a burst to counteract your movement. These factors always added up to disorientation for me in the video arcade, but I slowly found myself becoming more adept in Stardust.

If that's the case, total nausea would be the result if bloodhouse created my ultimate Asteroids game, in Real 3D. The asteroids tumble in two planes on Stardust's standard levels, and out of one point perspective in the tunnel sections. What I would love is for them to come from

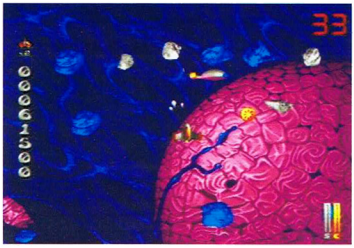


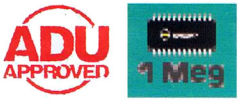
every direction — back, in front, from below — as if you were sitting in the spaceship. This would take a play interface more like Wing Commander's or a virtual reality headset (I know I go on about this), and more intensive graphics calculations, but it would be worth it.



In the real world, however, and for the immediate future, Stardust is my number one shoot-'em-up for mindless asteroid crunching. **DS■**

Supplied for review by Micro-World





GRAPHICS ★★★★☆
SOUND ★★★★☆
ADDICTIVENESS ★★★★★
PLAYABILITY ★★★★★

OCS / 1.3 ✓
ECS / 2.0 ✗
AGA / 3.0 ✓

91%

Star Trek 25th Anniversary

Interplay ■ NZ$99 ■ A$90

I'M IMPRESSED! Star Trek 25th Anniversary blows all other licences right out of the water. Of course, my opinion may be a little biased (being a Star Trek fan and all), but I'll try to be as objective as possible.

Trek is set over seven missions, split into two distinct game styles: a space combat simulator and point 'n click adventuring, on a number of visually stunning alien ships and landscapes, venturing where no man has gone before. Each of the seven adventures is presented as a separate episode, complete with its own intro sequence and title.

Every mission starts in a similar way, with the Enterprise receiving an urgent message from Star Fleet Command. Specific details are given, with most usually involving a ship-to-ship confrontation before the adventuring starts.

All the famous Star Trek trademarks are there, including the familiar bridge and tri-corder sound effects (among many, many others), as well as the ever-present, witty banter between key characters, especially "Bones" and "Spock".

When on board the Enterprise, you are on the bridge where instructions can be given to various crew members to perform specific tasks.

Kirk, our brave and handsome captain, in charge of the Enterprise, is responsible for seducing alien women and beating up insolent Klingons — no, seriously, he accesses the captain's log and disk options, as well as giving the order to beam down to the surface.

Spock, Science Officer and general help option, will give his expert opinion on most things, as well as more specific information via the ship's computer.

Ship's engineer Scotty is in charge of repairing any damage sustained in battle and comes complete with: "She cannae take it captain."

When he's not running around stripped to the waist and brandishing a sword, Sulu operates the helm and shield controls.

Ship's navigator and tactical officer, Chekov, takes the Enterprise into warp and activates the ship's phasers and photon torpedoes.

Communications Officer, Uhura, controls all ship-to-ship and ship-to-shore communications.

McCoy ("Bones" to his friends), is not on the bridge, but does appear on away-missions and will give an expert opinion on all things medical in nature.

An away-team will consist of Kirk, Spock, McCoy and a red-suited security officer who will, in many cases, be killed (true to the original no less).

The team is controlled via a "naked man" icon, allowing you to look, use, take and talk to the various aliens and objects encountered on your travels. A little tricky to use at first, which becomes easier with time.

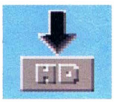
Trek is just packed with graphical treats and conversations taken straight from the show — a real bonus for die-hard Trekkies like me. Puzzles on the missions are not too taxing, but the solutions are not always logical or straightforward.

Hard disk-installable only, Trek takes up 9 Mb of memory and is AGA chipset-compatible only. A1200 or 4000 owners are in luck, but everyone else will be disappointed, I'm afraid — a good excuse to upgrade.

I was a little annoyed with the frame rate, which is very slow, causing some of the action sequences to be tired and jerky-looking. The load time between scenes is relatively fast, however, which compensates somewhat.

All in all, Star Trek is a great game that I thoroughly enjoyed playing. For fans of anything Star Trek-related, it's definitely worth a look, but still pretty good if you aren't. **JG■**

Supplied for review by Micro-World



GRAPHICS ★★★★★
SOUND ★★★★★
ADDICTIVENESS ★★★★★
PLAYABILITY ★★★★★

OCS / 1.3 ✗
ECS / 2.0 ✗
AGA / 3.0 ✓

80%

★ FORTHCOMING ATTRACTIONS ★

The following is a list of games due for imminent release. Watch these pages for further info on these and other games...

Ocean Software Ltd

Mr Nutz (Platform)	April	Amiga
TFX (Flight Sim)	Late April	A1200 CD^{32}
Inferno (Space Sim)	TBA	A1200 CD^{32}

Gremlin Graphics Software Ltd

Heroquest II	April	Amiga
Lotus Trilogy	April	CD^{32}

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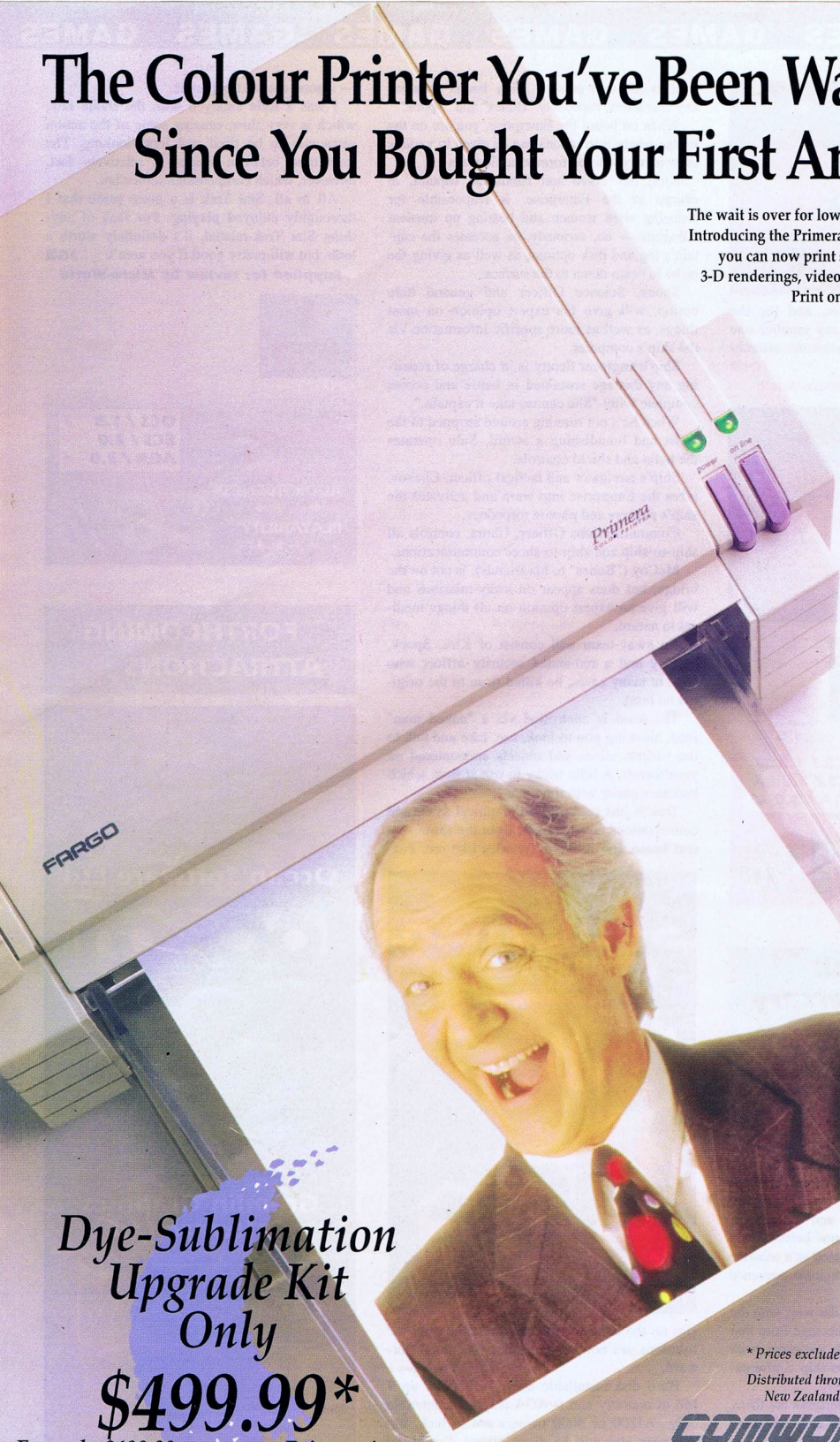

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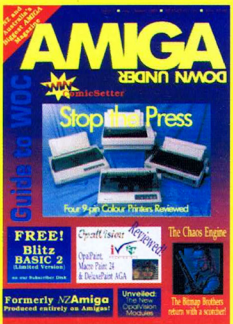

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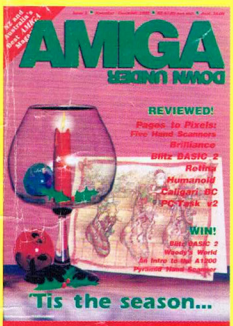

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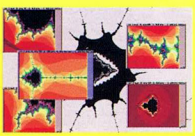

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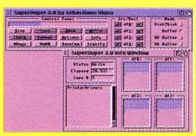

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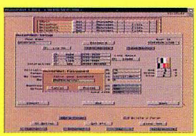

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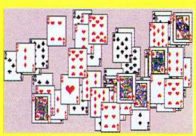

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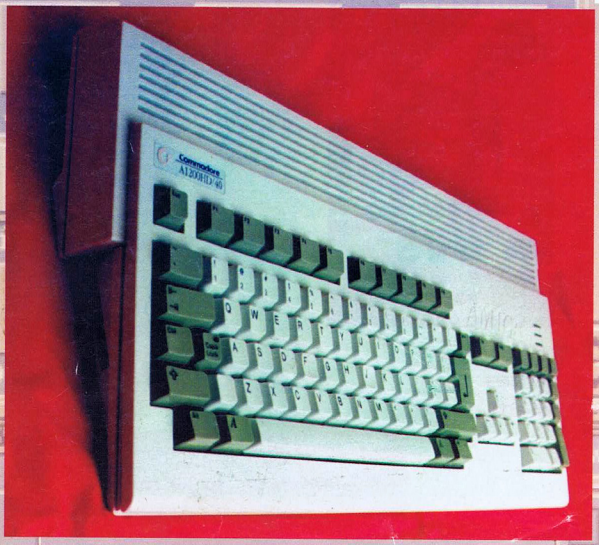

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