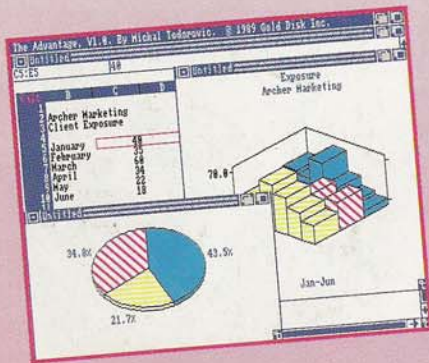


The Australian COMMODORE and AMIGA REVIEW

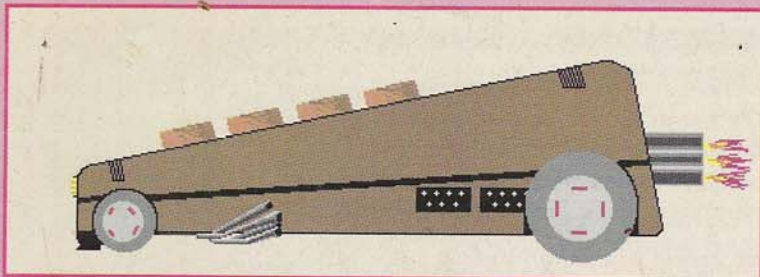


The Advantage

A beginners spreadsheet

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Feature Comparison	Professional Page 2.0	Saxon Publisher 1.1	PageStream 2.1
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Professional Draw Import/Edit	Yes/No	No/No	Yes/Yes edit ProDraw clips in PageStream!
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Draw Bézier Curves	No	Yes	Yes draw Bézier curves and Bézier polygons
Price	\$499.00	\$599.00	\$399.00



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Editorial

Despite wars, economic downturns, and complete dismantling of Commodore marketing departments around the world, there is no reason to feel negative about your \$1500 plus investment in Amiga computers.

Record attendances at recent European shows, continued sales growth in Australia and Germany, success in the United States in the video industry and increasing demand for the Amiga in education circles have ensured that the Commodore Amiga will remain firmly placed as the number three computer of choice.

Number one place is clearly held by by the clone market (yuk!), and number two by the Apple Macintosh range (we can emulate you too!). Number three is a good place for the underdog machine. The machine more English people prefer because it plays better games, more Germans use for business, more Americans use for video and graphics, and more Australians buy because they read *Australian Commodore and Amiga Review* and have a friend with an Amiga.

With all the overseas hype, and the continued success of the Amiga in new markets, things are looking good for the year ahead. However, there are also some rather sobering figures worth noting. With less marketing, the Amiga's profile may yet again diminish. And, as the local Christmas spending patterns attest, with less money to spend more people are opting for Nintendo and Sega game playing machines. At under \$200, some parents are thinking in terms of quieting the kids now, rather than ahead to those inquisitive years and the exceedingly powerful capabilities of a home computer.

So, it's up to us. I know I harped on this last month too (repetition for emphasis) - here it is again. It's worked in America, and we need it here too. More publicity for the Amiga means more sales which means our investment is protected by an increased market size and better future support. So, take action. Tell your friends about your computer. Show them. Get some good graphics, some fun games, a paint program and a little music. Show them what the Amiga can do. Tell teachers at school, send postcards to computer magazines and daily press. Let them know the Amiga is alive and well and has the power to kick the chips clean out of the sockets of most other computers. Ask for more coverage.

During late January, Channel Two covered the ANZ yacht races in Sydney harbour. At different stages in the course, the progress so far was recapped using computer animation. The camera flew in over the harbour, catching the boat which rounded a buoy. The spinnaker unfolded and the boat pulled ahead. The camera overtook the boat and looked back. This computer animation sequence was all generated using the Amiga and it was broadcast on national television. What else do you need to demonstrate that when it comes to video the Amiga is the most cost effective solution around?

Well, you need a lot more day to day applications. *Amiga Vision* promises to offer more of these, as do products like AMOS and Blitz BASIC. It would be great to see a lot more Australian developers getting behind these sorts of products and producing some real interactive programs able to teach using the multimedia capabilities without the need for extra video hardware.

A few companies are already breaking into this area. With CDTV just around the corner, the time is right to prepare to ride the wave of new computer users who will be introduced through this amazing new product in their quest for entertainment, education and communication. CDTV could be big. But it will need marketing like never before. At the right price it will turn the education market at home and in schools on end. However, the most critical component will be quality home grown products to go with it. Where are all those good ole' C64 BASIC programmers? How about checking out CDTV? Developer information is available from Commodore.

Next month: Watch this space for information on TV modems. They're about to change the face of TAB in Australia and expand to offer more information to Commodore users all over Australia.



Andrew Farrell

GVP Announces a Technological Breakthrough...

SERIES II™ THE NEXT GENERATION

in SCSI and RAM Controllers for the A2000

IMPACT

Series II

GVP's New SERIES II A2000 SCSI and RAM Expansion Controllers provide the ultimate hard disk and RAM expansion solution for the A2000. Choose from two new models:

The Series II A2000 SCSI "Hard-Disk + RAM-Card"

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- ✓ Fully implements Commodore's Rigid Disk Block (RDB) standard as well as the new DIRECT SCSI interface standard.
- ✓ Removable media drive support. Automatically senses cartridge changes and informs AmigaDOS, ensuring safe and reliable use of removable media SCSI drives.
- ✓ Allows Direct AUTOBOOT from Fast File System Partition.
- New **INTUITION COMPATIBLE SCSI installation** and "tuning" utility included. Major features include:
 - ✓ ICON and gadget based INTUITION interface.
 - ✓ Bad Block Remapping of hard drives.
 - ✓ Auto or manual hard drive partitioning and AmigaDOS formatting.
 - ✓ Read and modify existing RDB parameters on hard disk.
 - ✓ Simplest and Easiest SCSI installation in the industry.
- **Low parts count (through VLSI Integration) EQUALS:** lower power, higher reliability, longer life and ultimate PRICE/PERFORMANCE! See TRADE-UP offer.

The Series II A2000 SCSI "Hard-Disk-Card"

- Same as above but without the 8MB FAST RAM capability.
- Specially designed for those users who don't need memory expansion but still need maximum hard disk performance at a budget price.
- **UNBEATABLE VALUE.** See \$199 trade-up offer!

GVP's New **FAAASTROM** SCSI driver and installation software is also available as an upgrade kit for GVP's original IMPACT SCSI controllers, for ONLY \$89.95. Offers major performance increase over previous GVP AUTOBOOT EPROMs.

New Series II 48MB Removable media hard disk drive. GVP now also offers the NEXT GENERATION removable media hard disk drive which offers increased capacity (48MB formatted) and major technological advances in cartridge air flow filtering design and robustness. Call for details.



SCSI TIMES

The ULTIMATE Trade-Up Offer???

GVP today introduced its new Series II product line and announced a bold new trade-up program, which is certain to further bolster GVP's dominant market share in the Amiga hard drive market.

Details of GVP's new TRADE-UP program are as follows:

- For \$199 plus \$6 for shipping (Aus only) end-users can trade-up to the new GVP Series II SCSI "Hard-Disk-Card" (without drive) by simply sending in their present SCSI controller (from ANY manufacturer) together with a money order or certified check, payable directly to GVP.
- All trade-in controllers must be sent to GVP FREIGHT PREPAID.
- Owners of any GVP or Commodore SCSI controllers, are eligible for an additional \$10 rebate, if they trade-in a FULLY FUNCTIONAL and working controller. These owners need to submit a certified cheque/money order for \$195 only.
- For an additional \$89, existing controllers can be traded-up to the new Series II "Hard-Disk + RAM-Card," which includes the 8MB FAST RAM expansion capability, populated with ZERO RAM.

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RAM RUMBLES

Commodore in the media

Many took advantage of the recent holiday break to put pen to paper and record some more Commodore or Amiga sightings in the media.

On GWN in Geraldton an avid *Home and Away* late night TV watcher, spotted an Amiga 500 plus Commodore monitor, and at the keyboard was Dodge using a word processor at school.

Another couple of sightings were on the ABC *Afternoon Show*. In one of them they had a guest on the show with an Amiga 2000 set up showing the viewers some of the features of *Deluxe Paint III*. Then a couple of months later they had the programmer of one of the MIDI programs, with an Amiga 2000 with a MIDI set up, showing what can be done. (Melissa from the Software Bakery). In one of the earlier MacGyver shows he used the old Commodore 64 to figure out an equation. In *Get Smart Again*, the reunion movie, an Amiga 1000 with 1080 monitor was used in an early scene to pull up and graphically display Maxwell Smart's personal file.

Well, for such a large number of spottings, S. McVicar of Utakarra, Geraldton, wins two disks from our public domain collection. (To claim them call (02) 817 0011, ask for the editor, and identify your letter!)

Commodore 128 in ship!

"On Saturday morning, 24th Nov., I was watching ABC TV's *Last Frontier* program which was about mysterious sunken ships with no apparent damage to them. On the expedition's boat "R/V Reef Explorer" was a Commodore 128 purportedly linked to a register of shipping. A screen shot did show a list of ships' names but I missed out on seeing which brand of monitor it was. This is the only time that I have seen a Commodore on TV but of course I do not watch a lot as I own an Amiga 500 and that, to my way of thinking, is much more interesting than mere television."

We think so too, Barry Hodgson of Port Macquarie - thank you.

More kids' shows and the GIO!

Another spotting of an Amiga at use in the media. On the second show of the *Catalyst* series (a science show for kids), an A2000 was being used. - Scott Campbell, Department of Philosophy, University of Tasmania.

And up for debate, Gregory Buresch of Doncaster, Victoria, has sighted an Amiga generated display output in the GIO Australia commercial that was aired on Sunday the 14th October, 1990. He's not sure which machine produced the display but it was certainly an Amiga display. Anyone else spot this graphic?

In one of Channel Nine's *Earth Watch* shorts, A group of school children were using an Amiga 500, and a modem, to access a world wide computer network as part of a water monitoring program called "Green". And that's from Darren Healey, South Windsor.

Well that's it for Ram Rumbles this month. If you have any media spottings, ugly rumours, computing horror stories or just some plain old hate mail, rush it in or fax it in or even modem it in! □

ACAR 04

Update Club

Hello again. As I told you in the last issue, *Cricket Amiga* has now been released but, unfortunately, some of the early deliveries were faulty. However we have sorted out all the problems and can now assure you that you will get endless enjoyment from this great Australian-written programme. By the way, if any of you have the older version please ring Pactronics service hotline on (02)748 4700, or 008 227 465 if you are out of Sydney.

AMOS is still one of our biggest sellers and for those of you who may not be aware of it let me repeat that to have an Amiga and not have AMOS is like having 75% of a computer. Our AMOS Users Club is going great guns and Neil tells me that we actually have more PD disks to offer than they do in the U.K.

Another great new product from Pactronics which is going like hot cakes is VIDI AMIGA! This is a frame grabber which allows you to grab pictures in black & white or colour from your VCR or from a video camera. Possibilities for its use are endless and given sufficient memory you can have animated some of the frames you have grabbed - a super super product.

On the entertainment front we now have the *Damocles Mission* disk which provides another five assignments on the planet and complete solutions. Shortly to be released is *Cardinal of the Kremlin*, the red hot smash hit on the IBM, now on the Amiga, and *Bill & Ted's Excellent Adventure*, which is now available on the C64 and will be soon on Amiga as well.

With the war raging in the Middle East there seems to be an upsurge in interest in our strategic war games - *Blitzkrieg '40*, *Blitzkrieg-Battle of Ardennes*, and *White Death*. Also of course *Mind Games* which has three brilliant games in one package - *Waterloo*, *Conflict in Europe* and *Austerlitz*.

Once again let me remind you that if you want more information on our great range of C64 and Amiga products you can ring us or write to us giving us your name and address and we will send you out full lists.

Speak to you next month!

Notepad

CanDo! v1.5

There's been a major update to *CanDo*. The new version 1.5 offers more control over the machine, increased ease of use, and the power to do just about anything.

Some new features include Database Functions. Any data can be stored and retrieved from disk files, allowing easy custom database creation. Multiple Window, multi-screen decks can now be created, as well as custom requesters for use from multiple decks. Floating Point Math, V1.5 supports full IEEE double precision operations, 68881/68882 math coprocessors, and all common Math and Trig functions.

Also included is AmigaDOS 2.0 support. *CanDo* now allows the use of AmigaDOS 2.0 border styles (2.0 not required). APP-Window events and overscan are supported as well. Improved AREXX control includes asynchronous messages allowing ap-

plications to work independently, and improved message replies. The New Script Editor supports cut and past and the ability to switch between any of an object's scripts when editing.

Expanded Variables System: Records and Arrays. This system now supports multi-dimensional arrays, Record Variables (similar to structures but much easier to use), and variables which are local to a script. Also, expressions are now evaluated 40% faster than before. This means faster execution of your decks. *CanDo* V1.5 contains over fifty new commands and functions to support the features described above, and many other new features as well.

There are a number of new script editor tools to make your life easier. These include a tool for defining BrushAnim movement, a tool for creating and editing routines from any script, a tool for positioning brushes, and a

tool for creating sound sequences. Now, user-definable error handling is a snap. The new Error Handling Object allows your applications to trap and handle errors in any script. And now, introducing the newest script launching option: the right mouse button click!

With KeyInput Object you simply hit a key and launch a script. Also included in *CanDo* V1.5 are AREXX Micro-Serves (AREXX not required), these can be used for full screen ANIM control including starting and stopping ANIMS, going to (cueing) a frame, showing a frame, showing a range of frames, and much more. Similar to the previously released Serial Manager, the new Parallel Manager allows communications between *CanDo* applications and external parallel-driven devices, such as Laser-Disc players etc.

CanDo V1.5 is compatible with *Intro Pak* and *Pro Pak 1* packages and is equally compatible with all previous *CanDo* creations. It is also complete AmigaDOS2.0 / A3000 compatible. *CanDo's* user interface is now snappier and more efficient with an Amiga-

DOS 2.0 look. (WB2.0 not required.)

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Computermate
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Amiga helps sell Hondas

Walk down Banksia Street, in the Melbourne suburb of Heidelberg, late one night and you might find someone outside the showroom busy buying a new Honda!

No, it's not one of Courtney & Patterson's sales force putting in some extra hours. It's Courtney & Patterson's newest weapon in the ever more demanding new car sales battle. And this weapon works 24 hours a day, seven days a week!

The weapon is the new Amiga computer based new car selector, which enables a customer to work out, on the computer screen, exactly what colour, trim and extras they want, simply by touching pads to swap and change the various features. Simple, on screen messages help even a completely novice computer user through the process with-



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News this month

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out any problems. Contrast this to the "normal" method of comparing pictures and colour charts and trying to imagine what the car would look like.

The computer system is a first for Courtney & Patterson. Developed by Melbourne firm Product Design and Marketing, the vehicle selector represents a breakthrough in the use of technology to undertake what is sometimes a difficult task for a customer. The beauty of the system is that the customer actually "builds" the car he (or she) really wants, and knows exactly what it is going to look like because the computer shows it, then and there. If the customer doesn't like what he or she sees, then changes are very simple to make.

That's one of the reasons

the Amiga was chosen as the operating system. It has the power to be able to undertake all the functions necessary, and it has the out-standing graphics capabilities required to present the vehicle in the best possible way.

Tim Wildash, of Product Design and Marketing, believes the Australian designed and produced Amiga vehicle selection system will be a winner with both dealers and customers.

"This system has the potential to significantly lower a dealer's costs," he said, "but at the same time can help increase sales. Because the system is so simple to use, customers enjoy trying out the various options available for the vehicle. Because they can actually see how much better the vehicle looks with those options, they're more willing

to order them. The system will guide the customer to the right choice but a salesman will still be required to close the deal. Someone will eventually have to be there to get the signature on the bottom line - with all those options the customer has selected via the computer.

With a computer terminal alongside the salesman, he has the perfect means of closing the sale without appearing to pressure the customer. All he is doing is to confirm the selections the customer has already made."

The quality of the system, producing very lifelike images, also means that the expensive, all colour brochures produced in their thousands by car manufacturers will no longer be necessary. Trees around the country are smiling! And when not being used by a customer to select a vehicle, the system can also be used as an excellent customer interactive point of sale display, again using the Amiga's outstanding graphics and sound capabilities. It also makes a great staff training aid for sales personnel.

What is the advantage for the dealer? Apart from a happier sales force, the system means less physical stock, those expensive cars sitting in the showroom eating up floor plan. And less stock means less showroom space needed, so rentals are lowered.

Because the computer logs all enquiries made, the dealer and the manufacturer have instant feedback on what people are looking at, and can adjust their ordering patterns accordingly.

There are also big benefits for the manufacturer, if the scheme catches on. They will not have to make so many variants - just base models ready to customising to the individual order, as prepared by the computer. In fact, Wildash believes the system could be used for direct dealer to factory orders, with no possi-

bility of the errors which occur when details are manually transcribed.

Because there are significant cost savings built into this system for all concerned, the consumer should also benefit in the long term with lower car prices.

The system, still in its infancy, could also have a huge impact in other areas of the car market and, indeed, for other product marketing, particularly high ticket, low volume products. It's simple, efficient and effective.

Presenter 500

Have you ever wondered how the US President or British Prime Minister can stand in front of an audience and confidently deliver a lengthy speech, apparently without notes?

They are reading from a special "head up" display. It's called head up because it doesn't require the speaker to look down and refer to notes. Keeping his or her head up maintains essential eye contact and, therefore, the attention of the audience.

The same trick is used by newsreaders on TV. They don't memorise every word; the notes they have on the desk are there just in case their specialised head up display, called a teleprompter, breaks down. To be truthful, often those notes don't contain text at all, and the newsreader looks down occasionally just for effect!

Until now, head up displays for speakers at conferences and meetings have been quite expensive, often beyond the budget of the company or organisation concerned. Now a Canberra based company, Presenter Prompters, have released a low cost head up display which is ideal for virtually any speaker or presenter.

Amiga 500

ATonce

VORTEX

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Look at these features:

- Run your IBM software 6 times faster than XT Bridgeboard
- Supports hard drive
- 80286 processor
- Norton SI 6.1
- 640K memory in MS DOS mode
- Extended/Expanded memory
- Multitasking

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The "front end" of the Presenter 500 Head Up Display is two glass display screens which are situated at eye level on either side of the speaker's lectern. The text appears on these screens in a large easy to read format, and the presenter delivers the speech, apparently without any notes.

Measuring just 30 x 27cm, the screens are remarkably unobtrusive and the text on them is visible only to the presenter. With two screens, the presenter can look directly at different sections of the audience without losing the prompt.

Controlling the head up displays is an Amiga computer and a special computer program which took one of the world's leading Amiga programmers, Tony Horwood, two years to write and perfect.

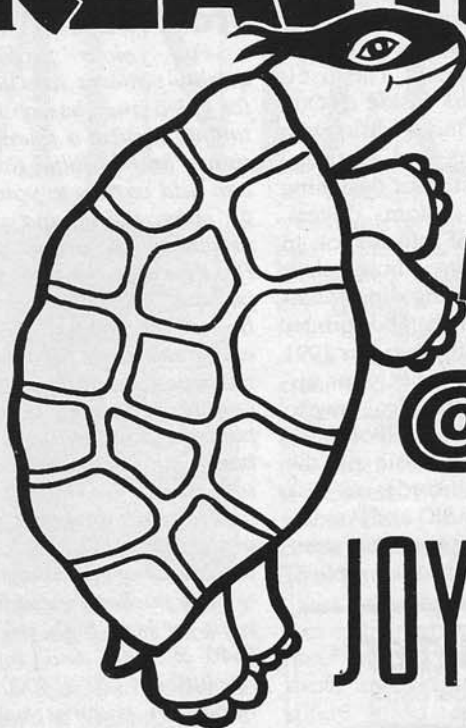
Making full use of the Amiga's brilliant graphics capabilities, the program offers a multitude of very readable type faces, full colour and highlighting options, powerful word processing, last minute editing and silky smooth scrolling.

The scrolling can be controlled either by the presenter, or by an assistant. There is also the capability of controlling other audio visual devices from marked points in the text for even more emphasis.

The Presenter 500 can also read text prepared on other Amiga word processors and, indeed, text files prepared on an MS-DOS (IBM compatible) machine. It will also save text changes back to the original MS-DOS disk.

Despite the power of the application, Presenter 500 is extremely easy to use, requiring virtually no training. It is, therefore, highly suitable for the organisation which has only occasional conferences

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NEW PRODUCTS

More Abacus books

Pactronics are continuing to churn out the Abacus books, with two new releases on the streets now. The first is Amiga Printers Inside & Out. In it you'll find a disk, with printer drivers and a special driver generator for designing your own custom drivers. There's lots of information in using printers, how they work, configuring dip switches, fixing errors and printer fonts. If the article in our 1991 Amiga annual whet your appetite, this is the ideal way to find out much more! For musicians, Making Music on the Amiga also includes a disk containing BASIC and Assembly Language routines, some useful players and a couple of

and meetings.

Presenter 500 is available as a software package to run on the user's own Amiga computer, or as a complete portable system including the Amiga. The latter is battery powered and mounted in a tough carry case ready for transportation to the conference.

Various options are also available, from a simple single screen system to the ultimate facility with automatic adjustment of the reflector screens by computer.

For further information contact Jeremy Redgrove, Presenter Prompters, (06) 257 1000, fax (06) 257 4904.

tunes. The publication is aimed at the programmer trying to make music. There's also a section on digitisation and various music applications.

Pro Fills

Full colour professional quality patterns and textures for video and desktop presentations require a talented designer or Pro Fills. Now you can add variety to your Amiga video titling and desktop presentations instantly with Pro Fills patterns textures and palettes. Pro Fills is a collection of IFF compatible brushes for use with fill tools and tile functions in any IFF compatible program. Over 100 patterns and textures to enhance your presentations and save time. Pro Fills patterns and textures may be used separately or combined to make thousands of variations.

The package includes patterns for both high resolution (640 x 400) and interlace resolution (320 x 400). High resolution patterns will also work well in low resolution applications. Pro Fills palettes are compatible with colour fonts. Thirty 16 colour palettes are included. Palettes have a six colour range defined for instant drop shadowing and highlights.

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Video Tools

Video Tools is a new utility package created specifically for video professionals. It consists of a variety of utilities intended to fulfill particular needs. The package consists of over 10 different programs, a collection of 14 fonts, four colourfonts, and various brushes.

Video Tools also includes features such as Subtitled which allows you to create subtitles quickly and easily for any situa-

tion. With variable fonts, sizes and styles and also supports anti-aliasing. Creditor smoothly scrolls text bottom to top and it's fully adjustable speed provided quality crawls. Uses variable fonts, sizes and styles and also supports anti-aliasing.

Scroller provides simple right to left scrolling of text at the bottom of a display and is perfect for Telethons and weather warnings. Prompter is a powerful telecomputing program. Full control over scroll, pausing, font, size, cue markers and more. Ascension is a powerful multi-media presentation program. Supports ILBM pictures, ANIM animations 8SVX samples and speech using over 24 different commands.

Ascension Maker is a point-n-click interface which makes using Ascension easy. Presenter provides all the features of Ascension through a powerful ARExx interface. Use it with AmigaVision, Elan Performer, CanDo and other ARExx compatible programs. Background Generator allows you to quickly create standard or 3D embossed backgrounds using any ILBM IFF brush. Use as a backdrop for titles, images, presentations and has complete background rendering.

Other features include a Video Slate, Colourbar Generator, Pattern Generator, Safe Area Marker, a font manager and various small utilities.

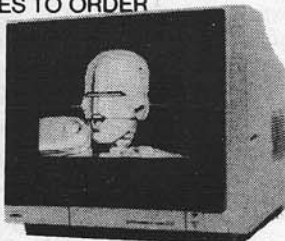
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Beginners start here - don't forget to install

Dear Editor, I refer to an article in your November 1990 edition of ACAR "Beginners Start Here".

On Page 17 it was suggested that slow disks could be speeded up by use of the *Copy* command. This is indeed the case but I wish to point out an omission in this section which could cause some confusion. When copying a bootable disk in this fashion it is necessary to make use of the *Install* command immediately after formatting the target disk. Otherwise, as I'm sure you know, the new copy will not boot!

Correct procedure should be:

Format Drive DF1: Name (place name here)
Install Drive DF1: Copy DF0: to DF1: all

This may have been obvious to your more enlightened readers but I was extremely confused the first time I tried to do this.

Steve Beck,
Kenmore QLD

Ed: Thanks for the tip Steve. Sometimes us old hands for-

Letters EDITOR

get what it's like to be a beginner. Thank you for the reminder.

C64 pokes

Dear Editor, I am the owner of a C64 and would like to know of any products and costs that can enable me to enter pokes and alter programs that normally won't let you list them.

Also, if a cartridge is available that can reset the computer (just as if you were turning the computer off) that stops wear and tear on the power

Dale Murchie,
Townsville QLD

Ed: Any cartridge with a reset switch will let you enter pokes (try *Action Replay*, *Final Cartridge* or *Super Snapshot*). The tough part is knowing where to poke and how to get the program going again. All the aforementioned cartridges have a machine language monitor which will allow you to view the assembly language which the game is written in. However, this is a complex language which requires expert knowledge to decipher and locate key memory locations to alter for extra lives, invincibility and so on.

Start-up sequences

Dear Editor, I've got a problem with startup-sequences. The problem is I've tried to create a startup sequence from scratch on a blank disk and everything goes alright until it comes to booting the thing up. What it does has got me stumped.

Firstly, it will come up with the usual startup CLI, then it gives me an unknown command statement. I thought it might not recognise that command, so I tried shuffling commands around, which is very time consuming, having to reload the CLI from my WB, then work on the startup sequence again. Then reboot the disk again only to find out it made no difference. Then I got to thinking, well, maybe it's me?

So I would be very thankful for any help in this area. While I'm here I thought I might ask another question. I have seen some very different icons and pointers and was wondering if there is another way to create different pointers and icons, other than in preferences.

Peter Colelough,
Hamilton NSW

Ed: An icon theme disk from Megadisc or Prime Artifax should do the trick - they're both full of the programs you need to do all those nifty little things. Fred Fish disks are also a good source of these little programs. (See our *Amiga Annual* for a list of the latest disks from 200-410).

Regarding your startup-sequence problem, I suggest you take a look at earlier articles in our magazine about creating bootable disks. You need to *Install* the disk (from the CLI), there's also a few essential directories and programs in these directories that you must have. Lots of info on this is in the *Workbench 1.3 upgrade manual*. Look in the section under *setting up a RAD: disk*. The same directories will be needed for a bootable floppy.

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Turbo Master CPU

Just about every brand of computer can be boosted along with an after market accelerator card. Now even the humble C64 can receive a mighty turbo speed increase of up to four times normal processing speed. Owen James reports.

The Turbo Master CPU, from Schnedler Systems, has been released here in Australia. I predict it will be one of those few peripherals that C64 'power users' won't want to be without. So what exactly is this Turbo Master thing? Basically it's an obese looking cartridge which allows the 64 to run at four times its usual speed. On the top of the unit is four switches and a reset button. The switches are Disable/Enable, ROM 2/ROM 1, Manual/Soft, and 1Mhz/4Mhz.

The switches are for the purpose of compatibility with software. And no, the 64 doesn't need to be switched off before flipping the switches, so changes can be made 'on the fly' to get the best set-up for a particular program.

GEOS

I decided to really put it through its paces with GEOS, a notoriously slow system. Speed is about the only thing that holds me back from being more productive with GEOS. Applications like *GeoWrite* may be alright for special purposes but for general use it's just too s-l-o-w. With this little baby plugged in, though,

GEOS was screaming! Being able to touch type, I'm no slouch at a keyboard. Now instead of there being a three second delay between my key strokes and the words actually printing on the screen, I just couldn't keep up. It was as if *GeoWrite* was saying "Come on. Keep up slow coach or I'll write your letter for you"! *GeoWrite* was suddenly faster than most Amiga based graphic word processors! And it's not just *GeoWrite* that benefits. GEOS in general has a certain air of magic about it with Turbo Master plugged in. Requesters pop up in half a blink, which really puts my 7.14Mhz Amiga to shame! I found that nearly every productivity style application benefits from the Turbo Master.

Any program that requires lots of calculation or memory to be juggled around a fair bit will probably welcome this device with open arms. You may experience difficulties with some software. Most of these incompatibility problems occur because the software uses some sort of unusual protection technique or relies on very strict timing. The Turbo Master tries its darndest to work with everything, but still, don't expect all your games to work. The games that do, however, can often provide a whole new level of amusement.

Speeded up games

Take *Boulderdash*, for example. Now let me confess right here that I'm far from being a game fan, and usually the only types I play are games that make me think, such as adventure games. Yes, *Boulderdash* was cute but not exactly my taste in entertainment. With the Turbo Master plugged in, the usual mildly hyperactive Rockford suddenly behaves like he's on 'Speed!' He's

dashing around so fast the screen honestly can't keep up with him. By the time the screen and diamond counter catches up, you find that you've already collected the required amount of diamonds and are onto level 400 (or thereabouts)! After composing myself from fits of hysterical laughter at this sight I was convinced the Turbo Master had its place in the entertainment market too.

Music in programs will often remain at its usual tempo because it depend on the Jiffy clock or an IRQ routine to create the intervals between notes that are needed. The cursor blink on the BASIC screen also keeps to its regular flash speed because it's IRQ driven.

You'll find uses for the Turbo Master in all sorts of applications. Mandelbrot graphics would be immensely improved speed-wise by such a device. I couldn't test this idea, though, because my Mandelbrot program, that took me days to create, was eaten by my disk drive some time ago. I really must get my drive Gremlin-proofed!

Also included in the package is a neat little DOS wedge which is almost identical in operation to the one found in WarpSpeed. Turbo disk access provides five to six times speed increase. The great thing is that the wedge resides in EPROM memory and so uses none of your available RAM. (EPROM, by the way, is an acronym for Erasable Programmable Read Only Memory. As the name implies, it's a ROM that can be written to. A little bit like a non-volatile RAM).

The unit also has the option of Jiffy-dos compatibility, which is great for users wanting the best in disk speed. Cassette users will experience problems because the Turbo Master can't be used with Data-sette drives. A shame, but an inconvenience to only a very small minority. Besides, I'm sure 64 users would prefer to get a disk drive before a speed enhancing unit anyway.

Manual

The well indexed manual is 34 pages in length and manages to cover everything to an almost exhaustive level. It contains everything you'd ever want to know about the device, including relevant applications for it when creating your own programs, quick reference charts (including one for the DOS wedge), a section on the enhanced 65C02 instruction set (which can be used with the Turbo Master), and even about 'Hacking the EPROM'.

This last one, 'Hacking the EPROM', is fabulous if you want to create your own operating system for the 64. As I mentioned earlier, almost the entire C64 is on this cartridge. BASIC, the character set, Kernal ROMs, it's all there on EPROM just waiting to be changed. All you need is one of the EPROM programmers that you often see advertised for a reasonable cost in some of the overseas mags. Then you could write yourself a more friendly BASIC, create a 'cute' character set to replace the regular old boring one and even (I LOVE this one...) change screen colours to something slightly more desirable than the cacky blue that usually confronts us.

Complaints? Well, only that it's blue... very blue. In fact it matches NOTHING on or around my computer desk. Was this a devilish ploy by Shnedler Systems to draw attention to this nifty little device? No one can say it merges in with the beige background of 64s, mice, printers, disk drives, and power supplies!

On the whole the Turbo Master is an excellent add-on and very worthwhile if you're serious about your 64. For some, the price may seem a little steep but when you consider the amount of work that has gone into it, and the cost of the hardware parts alone (which includes almost an entire C64), the price is very reasonable. Thoroughly recommended if you want to get the most out of your C64. □

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Realm Review

Astate

Budding archeologists, this is a game for you! The goal set to the player is to find five pieces of the widely acclaimed *Statue of Theomorphe*. The pieces are scattered across the French countryside, and it is up to you, with your boots, drill, scanner and pickaxe to continually search the place using your archaeology skills. Huh! Easier said than done.

However the documentation supplied in the game doesn't give any indication on how and where to use these tools, and how to seize lost objects! In fact, I was drilling, scanning and pecking every single spot on the screen to no avail. Even travelling around can be a pain in the behind without suitable instructions.

The graphics are very pretty, even with a pair of ugly boots (that indicate your position) flashing on the screen. Di-

rect the mouse left or right and press the left button to move. I am sure it is possible to travel on the paths nicely drawn going into the scenery, but I have yet to work out how, and even entering buildings poses a problem.

Pressing the right button will flick through the various tools you can use. Again, learning to use them is another thing, and in the many hours I played this game, I learnt very little. Also avoid snakes and things that drop on you from above, as these, in most cases, mean instant death.

Good graphics, good sound, and heaps of potential. This game is probably hiding a lot more, but some extra notes in the clueful instruction leaflet would have been a lot more helpful. If you deciphered *Hacker*, then you'll do well in this game.

Realm Rating: 60%

Verdict: A bit of a puzzler from those folks in France.

Problems Problems and More Problems

First up on the chopping block is *Marie Haleblain* of Ingleburn in NSW. She is stuck in a couple of games. In *Heroes Quest*, where and how does she get the magic mirror, and how does she get into the Brigands camp without getting killed? Then in *Conquest Of Camelot*, once in the catacombs, how does Marie protect herself from the rats? Also, what must she do to find the Grail?

Donna McDougall of Westmead in NSW has got herself seriously stuck in

Classic Adventure. She has reached 230 points, and has the magic pyramid, however certain spots around a giant mirror seem to get her really stuck. Can anyone help Donna out of the rooms with the giant mirrors?

A letter but no name. This person is stuck in a game called *Sbard of Inovar* (by Bulldog Software). Firstly how do you enter the Caernast fortress without copping an ear in the earhole. Then, how does one get the Amulet without getting burnt. Finally, what is supposed to happen in Adklaart Mire?

Colin Smith of Tarragindi in QLD would like to know how to rescue the princess near the black hole in *Star Command*. Then, in *Neuromancer*, how can one find money!

A. Stivala of Spence in ACT is stuck in *Prince Of Magik*. Getting past the ants is one problem, and the riddle concerning the mother of darkness is another.

Brett Higgins from Tassie really wants to know where he can find the yellow telepad crystal in *Dark Side*. Any help would be appreciated.

From the Isle of Capri in QLD writes eight-year-old Brian Blackwell Jr. Brian is another victim of the dreaded Pro-pack adventure games. In *Temple Curse*, how do you get into the boat and cross the pool. In *Last Planet*, how do you wear the boots, get the rope and look at the drawing? Finally, in *Island of Spies*, how do you survive the parachute.

Finally, Mark Bilney of Mt Gambier is S.A. is stuck in *Ring of Power*. Where can he find the password to get into the palace past the guard. Then in *Aztec Tomb*, where can he get the rope to climb the tree?

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The Advantage

Probably one of the most publicised spreadsheets to hit the market over the past year was Gold Disk's *Advantage*. Alan Kirk examines if there really is any advantage in *The Advantage*, which also appears as *Calc* in Gold Disk Office

Firstly - the manual. Only 101 pages including index. The most charitable thing that can be said about it is that it is workmanlike. It covers nearly all the program's commands and gives a brief description of their functions. There are tutorials, but don't expect them to cover the use of formulas in any depth. You need to refer to the "read me first" file on the disk to fill in some of the manual's gaps, its about four pages long.

The program comes on two disks. The first one contains the program itself, and a smaller version of the program for 512K users. The second disk contains example spreadsheets. At first I thought that one of my disks was corrupt, then I found that both disks could only be read from my internal drive, not my (1010) external drive. I've noticed this with other Gold Disk products, too.

The advertisements and the manual say that the maximum size of a worksheet is 65,000 rows by 65,000 columns. When you look at the "read me first" file on the disk, you find that this has mysteriously decreased to 32,000 rows by 32,000 columns. No matter. That is more than large enough for the most demanding application.

Worksheets

You can have as many open as your memory allows, and it is relatively easy to move data between them or to construct formulas (using the "LCELL" state-

ABOUT SPREADSHEETS

The most difficult part of writing a spreadsheet review is knowing how detailed to make it. Too detailed, and it will go over the head of the novice user. Not detailed enough, and it will be of no use to an experienced hand. I will try to strike a balance, but will first cover a few basic points for potential first time spreadsheet users.

A spreadsheet or worksheet is a collection of boxes called "cells". The cells are arranged in horizontal "rows" and vertical "columns". Any cell can contain either a "label" (descriptive text), a value, or a formula that calculates results based on the values that have been put into other cells. The formulas use inbuilt functions such as "sum" to add together the values contained in a "range" of cells, or "avg" to determine the average value of a range. These are two simple examples; a large number of mathematical, financial, scientific and statistical functions are available within any brand of spreadsheet.

The "industry leader" is the *Lotus 1-2-3* spreadsheet, which is not available in an Amiga version. As far as I know there is only one *Lotus* "workalike" (i.e., a program that uses identical command and formula structures) in the Amiga world, that being *VIP Professional*. Even that program only emulates an early version of *Lotus*, not the latest version.

Because of its perceived "lead", most spreadsheet makers (including Gold Disk) like to make their spreadsheet programs "Lotus compatible". That is, you can (in theory) take a worksheet that was created on an IBM clone using *Lotus*, load it into another program, work on it, then re-load it into *Lotus* or vice versa. (Of course, if you are an Amiga user you have to find some way of getting the worksheet from the IBM machine to your Amiga and back, but that's another story.) □

ment) which combine figures held in several worksheets. This is a thing of pure joy after the aggravation involved with programs like *VIP*, which only allow you to have one worksheet open at a time.

Worksheets can be opened on the Workbench screen, or on a custom screen. Custom screens require at least one meg, can have four, eight or 16 colours, and can be interlaced if you prefer. (You can see 56 rows on an interlaced screen, 24 on a standard one). The palette is completely user adjustable from inside the program, so you can minimise the flicker effect that comes from choosing an interlaced screen.

Advantage uses the *Lotus* style of cell references. Each column is referred to by letter, each row by number. (The cell in the top left hand corner is "A1", the one below it is "A2", and so on.) "Names" can be assigned to any defined range of cells.

Advantage also takes full advantage of the Amiga's Graphic User Interface. Unlike *VIP Professional*, which makes NO use of the mouse, you can use the mouse to select a cell or range of cells. The pull down menus are quite intuitive, and you don't have to remember long and (in my opinion) sometimes awkward command sequences as you do with *VIP/Lotus*.

The program goes its own way with some of its commands. For example, if you want to "copy" a range of cells in most spreadsheets you must define the range that you want to copy from, then define the range that you want to copy to, and press [Enter]. The whole thing is done in a single step. However, *Advantage's* copy function works more like a word processor's. You define the range of cells that you want to copy, then select "copy". The contents are stored in memory. When you are ready, you select "paste" to put the contents into another range of cells. The up side of this method is that it is generally more flexible than the other one. The down side is that it makes it difficult for users to move between different programs.

To take another example, the "move" command normally "moves" a range of cells to another location. Not with *Advantage*, "move" is simply another form of "paste". To try to explain this briefly, Paste FULL will put any formulas that are contained in the original range into the new range; Paste VALUES will only put the results of any formulas into the new range, not the formulas themselves.

MOVE will put formulas into the new range, but will modify any cell references in the formulas to correspond with their new locations. I found another bug here, if you paste full into one range, and then immediately paste values into another, you often get a visit from the Guru. It doesn't happen all the time, and I'm not sure why it happens at all.

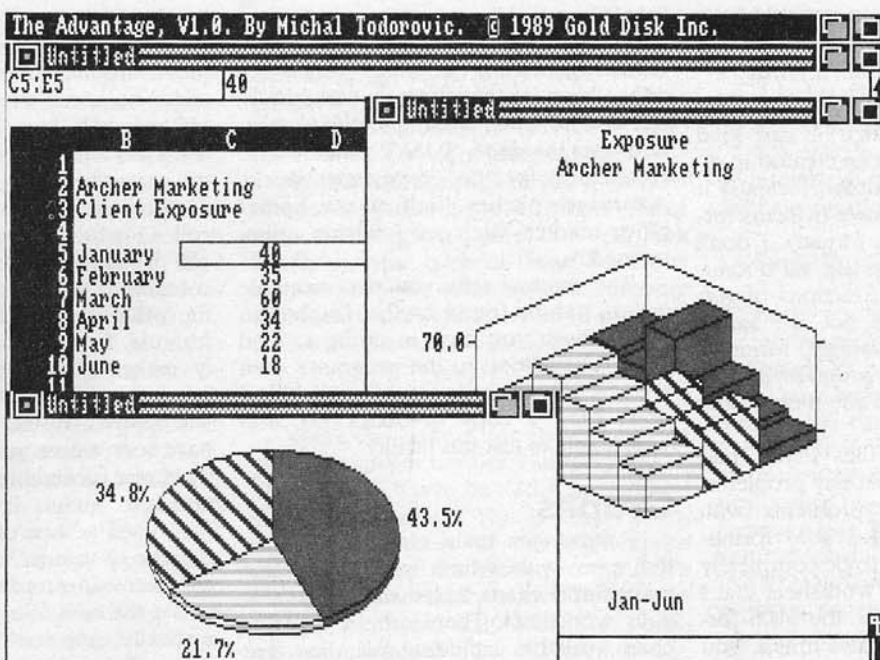
Entry

As with most spreadsheets, the first character that you type will determine the type of entry in the cell. If you type a letter, the entry is taken as a label. If you type a number it is taken as a value, and if you type an equals sign it will be taken as a formula. If you want to start a label with either a number or an equals sign, you can type a " (double quote) symbol first; that tells the cell to treat the entry as a label. (The quote mark does not appear in the final contents.) That's a fairly common spreadsheet convention; pity the manual doesn't tell you about it. You complete the entry by pressing the [Enter] key, at which point the cursor will move a defined number of cells in the direction of your choice. The default is one cell downwards, but you can adjust that using the program's preferences.

There is one serious, and I mean SERIOUS, flaw in the program. It will only accept six significant figures. In other words, if you type the number 1,234,567, it will be rounded up to 1,234,570. This is just not good enough for a program that aspires to be treated as a serious spreadsheet. If Gold Disk want this program to sell, they had better fix this, and fix it fast. The version that I am reviewing is only 1.0, but that doesn't excuse that sort of oversight. (Whispers are that this has been fixed in version 1.1, but we have yet to get a confirmed sighting of that version.)

The values can be displayed in the following formats:

(a) **General (normal values);**



(b) **Scientific (exponential notation);**

(c) **Percentage;**

(d) **Currency.** A dollars sign is the default, but you can vary this by changing the tool type on the "info" screen. Up to two characters can be used, so you can set it for Deutschmarks, for example.

One problem. Values which are in currency format only display two decimal places. There are times, though, when amounts have to be measured in fractions of a cent. (For example, the unit prices of many managed investments). Fortunately, the program does not disregard numbers in the third or fourth decimal places when it is calculating; it simply doesn't show the values on screen unless you have the cursor on top of the cell.

(e) **Date.** (The value is taken as the number of days since 1/1/78. If you want to show a specific date, you put it in as a formula using the "date" statement, then display the resulting value in this format. The format is limited to MMM-DD-YY. It would have been better to offer a "European" format alternative.)

(f) **Time.** (The value has to be a decimal fraction. For example, if the value in the cell is 0.25 and you use time format, "6.00AM" will be displayed. 0.5 is 12.00 noon, 0.75 is 6.00PM, and so on).

(g) **Boolean.** (If the cell's value is 0, the word "FALSE" is displayed, otherwise the word "TRUE" is displayed.)

You can specify the number of deci-

mal places, from zero to six, subject to the problem that I mentioned earlier. The decimal places can be "fixed" if you prefer. For example if you "fix" the number of places at three, the number 1.5 will be displayed as 1.500. Unfortunately it seems that you always have to choose your format after entry. There seems to be no way of setting a "global" default.

Editing

Many spreadsheets have an "edit mode". Once in that

mode, you can use the arrow keys to move around the contents of a cell and make the appropriate changes. *Advantage* doesn't quite work like that. When you place your cursor on a cell, its contents are displayed in a small window above the spreadsheet. If you "click" inside that window (or if you press [F1]), a small cursor will appear in the window. You can use the mouse to position that cursor so that you can edit the appropriate part of the cell's contents. You can also move the cursor by holding down the [Ctrl] key and using the arrow keys. Being used to other programs I often forget to hold down the [Ctrl] key, this strikes me as being a rather irritating feature.

The contents of a cell can be right justified, left justified or centred, just choose from the menu. Column width can be adjusted by simply dragging a marker. One problem here is that most spreadsheet users use the "|" character at some time or another to format their work and to separate their columns. For some reason *Advantage* will not recognise that character from the keyboard. The only way to get it is to load a *Lotus 123* spreadsheet which already has the character in it. Again, that's just not good enough for a serious spreadsheet.

Also, the program does not include an "asc" function which would allow you to input the character by its ASCII code. (*VIP* doesn't have that function either. The only spreadsheet I've seen it in is "SMART", which is only available in the

IBM/Unix worlds. Even so it would have been nice to find it in *Advantage*.)

Compatibility

Advantage claims that it can load worksheets that have been created in either *Lotus 123* or *Maxiplan* formats. It also claims that it can save in *Lotus* format (but not *Maxiplan* format). I don't use *Lotus* itself, but I do use *VIP Professional*. As the built in functions of *Advantage* and *Lotus* are not the same, some (usually more advanced) formulas that are used in one program simply won't work if you try to use them in the other one.

Advantage loaded files that I had created using *VIP* without any problems. However, I did have problems with some formulas, even basic "SUM" formulas which are supposed to be completely compatible. In one *VIP* worksheet that I imported into *Advantage*, the SUM formula refused to recalculate unless you went into edit mode while on the formula cell, and pressed [Enter]. I am still not sure why. In the end I simply re-typed the whole formula and it worked with no further problems. However, every time I saved an *Advantage* worksheet in *Lotus* format and tried to load it into *VIP*, I got a visit from Mr. Guru. I don't know whether the fault lies with *Advantage's* saving function or *VIP's* loading function; it must be remembered, though, that *VIP* is a fairly ancient program by Amiga standards.

Macros

For first time users, "macros" are simply a series of commands that you can attach to a single key or combination of keys. When you press those keys, the commands are automatically played back, saving you a lot of time and effort if you do some tasks repeatedly. Collections of macros can be saved in macro files, and recalled whenever you need them.

Advantage's macro facility leaves a lot to be desired when it comes to serious applications. For example, there seems to be no way of causing a macro to pause for input the way you can with *Lotus' "/XL"* and *"/XN"* statements. *Advantage* simply "records" the keystrokes that you perform, and then plays them back. The macro is not typed into a cell the way it is with *VIP/Lotus*, and there is no way of editing it. This is not what I would call "flexible".

To be honest, macros are somewhat overrated. I prefer the system used in the

SMART spreadsheet where macros are available, but the main tool is a BASIC-like programming language which not only allows you to automate commands, but also to build a completely customised user interface. SMART was, however, created for the commercial world, *Advantage* pitches itself at the home/office market. Even so, I remain unimpressed.

The manual tells you that example macros can be found on the distribution disk. I wish you luck in trying to find them. In addition to the program's own macros, Arexx support is available. I don't have a copy of Arexx yet, and wasn't able to test this facility.

Graphs

Advantage's main claim to fame is the ease with which you can create graphs and charts based on the data in your worksheet. There are 10 types of chart available including pie, line, bar and scatter charts. The data in your worksheet has to be arranged in a particular order for the chart to be created.

Unfortunately the manual only glances over this subject. Fortunately the system is intuitive, and you can usually work out what has to go where. The resulting charts can be saved in a number of formats including IFF. I had no problems in creating charts and importing them into *PageStream* for printing, though the bit mapped fonts that *Advantage* uses are, of course, rough.

Other quirks

I HATE the way you have to click in the file requester to bring up the file list EVERY TIME you want to open a file, even when you haven't changed directories.

If you try to quit the program or close a worksheet without saving it, you will be given a warning and asked to confirm that you want to proceed. Wouldn't it have been better to give you the option of saving the worksheet and then proceeding?

Advantage has a speech facility that will quote back your entries as you type them in. It's more cute than practical as the voice can never keep up with your typing speed. All it does is throw you off your rhythm. Fortunately, you have the option of switching it off.

Like most spreadsheets, you can "freeze" a row or column so that no matter where you are in the worksheet that row or column will be visible. The purpose of this is to allow you to see your

headings. There is a minor bug in *Advantage*, if you freeze a row and then move around the worksheet using the slider bar, only the heading on the first column will be visible. This problem does not arise if you move around using the cursor keys.

Suppose that you put a formula in cell A1 which depends on the value in cell B1 for its result. Suppose that B1 contains a formula which depends on the value in cell A1. This is a "Circular" formula. Put simply, your formula usually makes no sense because it has to know its own result before it can calculate its own result. Every spreadsheet I have seen warns you if you have created a circular formula, every one except *Advantage*.

I used a "sum" formula to add up a column of values. When I "blanked" one of those values, *Advantage* did not recalculate the new total of the formula automatically, nor could I force it to do so manually. As far as the formula was concerned, the blanked value was still there. This is simply unforgivable.

Conclusion

This is by no means a comprehensive outline of *Advantage's* abilities. I have concentrated on the basics of the program for two reasons:

- (a) Space restrictions; and
- (b) If a program hasn't got the basics right, it doesn't matter how many fancy features it has.

Advantage has the potential to be a fairly awesome program, but I suspect that it shipped too soon. There are just too many annoying bugs in it. It is possible that Gold Disk were trying to head off the newer versions of *Maxiplan* which is, arguably, the leading Amiga spreadsheet in terms of sales.

On the one hand, *Advantage's* user friendliness makes it excellent for home use. On the other hand, its price (anything between \$255 and \$350, depending on where you shop) does not.

On the one hand, *Advantage's* extensive array of functions, Arexx support, multi dimensional worksheet ability, *Lotus* compatibility and so on make it ideal for the serious user. On the other hand, ridiculous bugs like the six figure limitation are entirely unacceptable.

I'm afraid that Amiga users are STILL in need of a killer spreadsheet. It will be interesting to see how *Maxiplan* replies to *Advantage's* challenge. □

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Video Titling with Protitler

An easy to use video titling package for both beginners and old pro's. George Kimpton compares it to his old favourite, Pro Video Plus.

One problem video enthusiasts and professionals have is finding the ideal video titler for titling and credits of their productions. I personally tend towards *Pro Video Plus* because it has such clean and professional looking text plus a wide variety of page transitions and effects which do most of the things you need.

Well, enter a welcome newcomer, *Protitler*, all the way from England. It doesn't have some of the flexibility of *Pro Video*, but it does give us some of the things *Pro Video* cannot. *Protitler* has the smoothest horizontal and vertical scrolling of text that I have ever seen on an Amiga. In this it leaves *Pro Video Plus* for dead. Another good point is the ability to import virtually any Amiga fonts including ColorFonts. Limitations do apply with ColorFonts.

Well, so much for the pluses, let's have a closer look at the program itself.

Protitler comes on a single disk and requires at least one meg of memory. It has a reasonably comprehensive manual written in what appears to be French English. There are some peculiar quirks in the translation but I don't want to be accused of being racist so the least said the better.

The other problem with the manual

is that it appears to be more of a reference book than a descriptive text. In other words don't expect it to lead you by the hand. Although a very brief tutorial, which appears to be almost an after-thought, is provided at the end of the manual.

Sometimes it is difficult to fully understand what the programmer really intends you to do with the various controls or requesters when reading through the manual. However, I believe you will eventually muddle through as I did and the results will be worth the effort.

Hard disk mounting is easy and no annoying protection procedures are required each time you boot up.

Protitler is made up of three parts or screens, a Text Editor, a Project Panel and an Effects Panel. All work is done through these three screens.

One annoyance is the fact that the control panels take up nearly half of the screen, allowing you to only see a part of the working page. With automatic page flipping this can be confusing unless you keep your eye on the page counter. The text being entered scrolls down in the upper part of the screen with each new line, automatically changing pages when appropriate.

It is possible to hide the control panels to allow viewing of the whole page by toggling the Help key. However, for the novice to change any text characteristics, it is necessary to bring the panel back and scroll the text, if necessary, to view it and work on it. For the experienced user, key equivalents are available to change text characteristics.

The control panels are operated by

the mouse while text entry, movement and handling on the pages is from the keyboard.

Text editor screen

Each page line can take one of three forms, straight text, underlined text or IFF lines. The IFF lines are unusual in that they are in effect pictures, imported as fonts into the page, and are limited to a palette of eight colours. Any more colours and *Protitler* will spit the dummy. This can be very frustrating at times with existing art, you have to go away and change the palette.

Only positioning and underlining functions are available for IFF lines as they take total control of their screen area. The maximum size allowable for IFF pictures or lines is 720 pixels wide by 269 pixels high for low or high res pics in non-interlaced mode. This increases to 720 X 592 in interlaced. It is possible to insert an IFF in between already existing text lines as a new line.

IFF pics are the line and it is not possible to have them as background to text as in *Pro Video Plus*. No sizing of the IFF is allowed, it just drops into the location indicated by the cursor and sits there waiting. In my test run I had some difficulty with the IFF lines but then I would purchase the program for the text effects and the scrolling, not the IFF lines as they are its strong points.

Provision is made for eight fonts and sizes to be available for use at any one time. Currently three fonts are provided with the remaining fonts defaulting to Topaz 9. Other Amiga fonts, including ColorFonts, can be loaded into any of the eight locations. They just replace the currently selected font.

It is not possible to have more than one font on a line and text colours, shadows etc. are common in each individual line. No provision is made for font enhancements such as Bold, Italics etc, it's just as they come.

Character spacing is adjustable to some extent as is the line spacing. Line size appears to be controlled by the size





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of the font and to some extent the line spacing is varied by shadows.

Colours for the text, underlines, shadows, surrounds and backgrounds are selectable from a palette of eight colours. The first colour is the genlockable background. Any areas outside the margins are always video colour for genlocking. Individual colours in the palette are adjusted by RGB sliders. Text and underline characteristics and colours are chosen by clicking on buttons. Shadows are adjustable in direction and depth and it is possible to choose either full or dropped shadows. Characteristics are set for the complete line but may vary from line to line.

Alignment of lines and text is variable with the usual choices and with a custom arrangement possible. One good point is the provision of the "General" button which allows you to apply a chosen characteristic to all lines with one click. No mucking about line be line.

Margins are adjustable, both vertical and horizontal, and default to what appears to be overscan. One annoyance is the lack of wrap around of the entered

text, as in a word processor. I hope future versions provide this facility as this program would then be ideal for scrolled text information as in documentaries.

Project panel

According to the manual you have a choice of keyboards and languages to suit 12 countries. On the review copy it was either French or English and a usual keyboard only. Tough, if you wanted something else.

This panel is for adjusting the entire project. Here you set up line or page transitions, using already preset choices, or you can customise your own page transitions mixing the line transitions to suit your needs.

It is also here that you control the screen centering, the colour palette, loading and saving configurations and projects and if you should wish, save a page in IFF format.

You can choose whether transition effects modes will be by Timer, Page by Page, Continuous Scroll (Horizontal or Vertical) or Subtitle. You can also

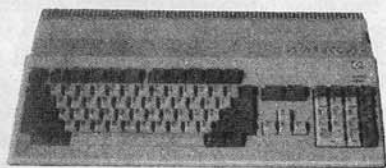
choose between interlace and non-interlace formats, but Scroll will not work with interlace. Possibly some memory constraint, but take it from me Scrolling in non-interlace still looks terrific.

Once you have chosen the basic form of effects mode applicable i.e. page or scroll etc., you are then faced with another control panel which allows you to choose the page or lines transition effects, control method, transition delays and timing.

Scrolling

Let's have a quick look at scrolling. It can be either a one off or looped. With vertical scrolling it starts with a blank screen and then the lines and pages just continuously roll up the screen. Speed is adjustable but at the default setting of three it is just great, as good as anything you will see. All preset page transitions are ignored.

With horizontal scrolling the location of the line can be adjusted up or down the screen. The height of the scroll area

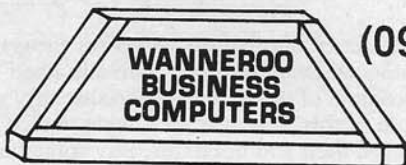


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can be adjusted also along with its colour and speed. Ideally the background is kept at the default video colour so that with genlocking it is transparent with text appearing over the video.

One trap with horizontal scrolling, each successive line should start with a space otherwise the lines squeeze together. Also anything more than the usual single spaces between words are lost, probably not a problem when setting up for scrolling only.

One strange thing that happened to me during scrolling on the odd occasion was that the text colours, on a single line, would go crazy the first time around and yet be OK next time round. It may have been the configuration of my 2500 that caused the problem as some strange things have been happening lately. Some say it could be the 020 accelerator board, who knows?

Subtitling

Subtitling is another facility supplied. It is possible to choose boxes of up to six lines which will respond, as a single item, to the type of transition preset for the box. This box transition is not variable once set and is consistent throughout the entire operation. The subtitling box's location can be adjusted to suit, along with the transition speed and the background colour, which can be set to transparent. A range of pages or boxes can be selected and triggered by either the mouse or an external signal.

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Transitions

There are 28 normal page transitions, eight custom and 28 transparency or see through transitions. Among these are some unusual ones such as "Ghost" where it is possible to see the video image through the page and "Elastic" which gives some weird stretching effects. The "Fade" is quite good too.

There are 27 normal line transitions, eight transparency transitions and 12 line disappearance modes. Many of the line transitions are similar to those for page but they can be combined in virtually any format to produce some very mixed up pages and effects.

Controls

Transitions can be controlled in a number of different ways. They can be controlled by timer, mouse, external contact or signal or keyboard. These controls can be selective about which pages are affected and the timer is supposed to allow "mixing" of the video and pages, although I can't work out how. Previewing of an action is allowed.

Roundup

In the past we have looked closely at a number of titling programs and hopefully I will be able to look at *Pro Video Post* and *Broadcast Titler* in the near future, but quite frankly *Protitler* is a good program.

It is very similar to *Pro Video CGI* except it does allow more flexibility in the importing of Amiga and ColorFonts and does provide a top class horizontal and vertical text scrolling facility. Just a point of interest, if you know how, *Pro Video* can be made to provide horizontal scrolling but it is not easy and not in the manual.

The line size is not as adjustable as in *Pro Video* but it is possible to live with as some line spacing adjustment is provided and page flipping is automatic as you add extra lines.

Again unlike *Pro Video* there is no provision for a custom background. It is either solid colour or video (transparent with genlock). The use of solid colour as a background could create problems as anything outside the margins is video colour, leaving a possible floating background.

Protitler has the same number of colours as *Pro Video CGI* but only half as many as *Plus* (16). In the transition department, it's probably a matter of choice, both provide a good range with *Protitler* probably being more flexible. The elastic transition mode is most attention getting.

Booting up and using the program is much easier than *Pro Video* which loads from the CLI with a request to enter a protection code. *Pro Video* is key oriented and uses twenty combinations of the Function Keys to control manipulation requiring a special key cutout or a good memory. *Protitler* is controlled entirely by the mouse except for file requesters and the text on the screen.

It is an unfortunate fact of life that no computer program ever gives us everything we want and we normally need to own more than one program of the type we specialise in. *Protitler* is a good example of this. If you want a wide choice of fonts and a fantastic scroll then you need this. Buy something else for the other fancy tricks.

At 149.95 pounds English it will probably retail at around \$450 - \$500 here. Not bad value if someone has it in stock, otherwise you will have to send off to England for it. Well worth having. Till next time, good titling. □

Education

Kids Desktop & Publishing

by Anne Glover

Are you looking for a different approach to the educational software currently on offer? Do you find that some of the educational offerings are virtually an animated version of some ancient text book and just as inflexible? That teenagers won't touch anything with an educational theme? How about breaking free from the constraints imposed by those faceless software manufacturers and doing your own thing once in a while?

Have you thought about giving your teenagers a desktop publishing program to work or play with? Perhaps you think there is no point. After all, they and you have no need for a newsletter or a brochure. As a consequence you might always whizz past this section when choosing software.

Skills

Instead of only considering the products of DTP (the newsletters etc.) try to focus on the process involved in DTP and the skills that can result. You still don't NEED a newsletter but the kids could certainly do with exercising their grey matter as they:

- research and collect material,
- create and edit text,
- design and import graphics,
- make decisions regarding layout, text and graphics,
- select fonts and styles,
- crop, resize and move material around, use grids, columns and margins,
- print and display the final product.

Using a DTP program allows the development and integration of a wide range of skills. Language skills will blossom as sentences are constructed, drafts are redrafted and material is researched. Teamwork skills may emerge as they work with friends or even siblings and parents.

Creativity

A DTP program allows the child to be an active learner. S\he will experi-

ment, make decisions and determine the consequences of those decisions. Who knows, some kids may even READ THE MANUAL! A DTP program is totally child directed and child centred. It will always be at your child's level and will grow with your child. The range and depth of its use is only limited by the operator's enthusiasm and imagination.

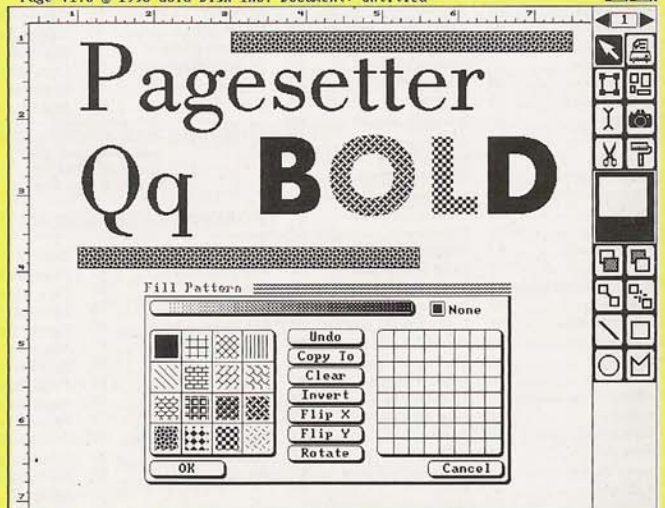
A DTP program teamed with a compatible paint program will allow your child's creativity to run wild! To extend the idea further, a video, slide or music program could be added at a later date. Always remember to look at the process as well as the final product. Also check out the compatibility of other products when you are making your first purchase.

After introducing the DTP program don't necessarily expect the kids to jump in with both feet the first day and produce professional looking newsletters the next day. This is a product that takes a while to explore and appreciate. Soon you will wonder how you did without it.

Many of the DTP programs on the market are quite expensive, some of them are worth the extra dollars. For home use the kids

will still get a lot of mileage out of a package priced under \$200. Many families will already have a DTP package that is currently being used for business purposes or to produce the Scout newsletter. Why not let the kids loose on this piece of software, or even let them produce your newsletter. It may take you twice as long as usual the first couple of

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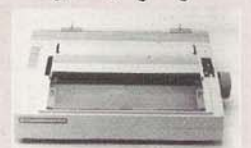
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times but think of the learning process involved and revel in the situation where you are able to work WITH your children.

When considering the price of a DTP package keep in mind that the kids and indeed the family will not outgrow this piece of software like they will most others. Nor will they get to the end of the adventure, kill all the nasties, then store the disk away for good. A user friendly DTP package can be used by all family members over about 10 years of age. Younger children can also contribute with some assistance. This piece of software will never go stale - it will be brought out again and again over the years.

Perhaps the kids could use the DTP program to present their school or Uni assignments. Initially you will need to ensure that they don't spend more time on the layout than on the researching and writing of their essay, but as they become more proficient they will find it easier to produce a good looking product.

Teachers cannot help but appreciate an assignment that is well written, professionally presented and easy to read. The teacher may not give better marks because of the presentation but it is likely that the student will have more effectively redrafted and checked his or her work than if he or she was hand writing it. This will result in better grades in those assignments, a better understanding of the work being studied and an improved performance overall. If the student now takes some pride in his or her work, that in itself is an achievement for many families. What great skills the student of any age will then be developing for home\school\work and life in general! Teachers have already realised this fact and are using DTP programs extensively in their schools.

After the DTP program becomes an integral part of computer activities in your home or classroom, you may look at extending the idea further by introducing a compatible paint, video, slide or music program at a later date. Always remember to look at the processes involved and the skills that will develop, not just the final product. □

JUNIOR TYPIST

by Anne Glover

Still typing with two fingers, or have you graduated to four fingers? How about the kids, are they plodding away using the WP or a DTP program for their assignments with only two fingers doing the walking?

We all know of the importance of developing good habits early before bad habits are established and entrenched. So perhaps you should invest in a typing tutor now!

Junior Typist is a children's typing tutor, but while it was designed for children it can be used by the whole family. This program is easy to operate and makes the onerous task of learning to type, a lot of fun. While the user may not match the professional typist, the fundamentals will be established with a minimum of hard work.

Junior Typist has four sections. The first is a tutorial designed to familiarise students with the Amiga keyboard and experience the basics of touch typing. The parent needs to go through this tutorial with the child to obtain the maximum benefit. Here the emphasis is on technique and not on speed or accuracy. The importance of correct positioning of the hands is explained and demonstrated.

The second section gives the student the opportunity to type in some sentences with the speed and degree of accuracy shown by the computer. A simple but fun arcade game follows. The player is required to type in a falling word before it hits the bottom of the screen. Selecting the easy level will require you to type in simple words such as "hand" or "away" in a few seconds. At the most difficult level, words such as "subscribe", "typical" and "submarine" will be falling concurrently, requiring a practised typist to succeed in shooting them down.

The last activity highlights the letters

monitor and not the keyboard as they touch type the words. Speed and accuracy is shown on the screen. Levels of difficulty in this activity, vary from level 1 with "bed" and "drum" to level 8 with "scissors" and "wholesome".

An added bonus with children using the program is that their spelling will probably improve as they work with the words. This program does not provide blocks of typing to practise on, but concentrates on small units. A couple of paragraphs would have been a useful extension. You could however type in a long string of sentences (eg 100) each session and compare your speed and accuracy each time.

An enjoyable way to learn to type correctly

This is indeed an enjoyable way to learn to type correctly. The results however will depend largely on the motivation of the student, whether the student is a

young child or an adult. Not only will they need to devote some time to this program away from their favourite games but they will need to practise properly. Playing the games with the same old two fingers and with eyes glued to the screen will develop few skills.

If however, the program is followed correctly, you will have your family touch typing correctly and saving heaps of time for other activities. This may also reduce some of the pressure on the computer and family friction as everyone tries to do their assignments or play games at once.

Junior Typist is produced in Ireland by School Software Ltd. The disk is copy protected but the distributors in Australia have told me they will back it up with a lifetime guarantee. □

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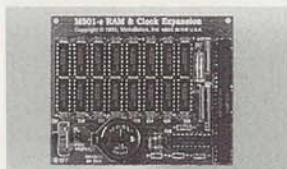
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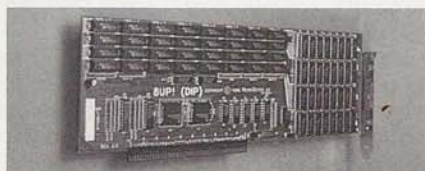


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Brain Scrambler



After whinging about a dearth of Australian made Amiga educational programs, here is one that will meet the requirements of some families. It has been named *Brainscrambler*, like the way you will feel after a long session wrestling with this piece of software.

Jigsaws are the main component of *Brainscrambler*. There is a reasonable selection of 17 pictures to choose from,

including a world map, a dinosaur, a koala and a map of Australia. To add greater variety and the personal touch you can load your own artwork. Pictures vary in their degree of difficulty. The number of pieces to each jigsaw is selected by the player adding a further dimension of difficulty. The screen can be broken in 24 pieces or any level up to the most fragmented with over 500 pieces. As each fragment is rectangular with no irregular sides, unlike a conventional jigsaw, even some of the easier puzzles may keep the kids going for a while.

When selecting some of the more complex formats, it is useful to take advantage of the "save" option so your wife/husband/mum or friend doesn't complain about losing you for hours on end. The save option will also prevent the scrambling of some of that grey matter.

Other useful options include the "show original" facility on the pull down menu. If you cannot remember if the pink flowers were on the right or the left of the kookaburra, you can take a peek at the original and then resume your game. This will keep the jigsaw fanatics happy if they don't mind straying from the original format.

Brainscrambler, so we are told, is suitable for ages 4-94. Any 95 year olds out there with an Amiga will probably enjoy it immensely too. A four year old will need a little assistance with the pull down menu and possibly a bit of practice holding the mouse button down as they move pieces around. Certainly they can be involved with a little assistance.

Some of the pictures are a bit old fashioned - something like those drawings you see on placemats - but

many of them are OK. Being able to load your own pictures is a bonus. Pictures must be Lo-Res and can be PAL or NTSC.

Brainscrambler comes in real "no-frills" packaging and this may present a problem in its marketing. Packaging shouldn't be an issue as it just clutters up our shelves, as well as placing a greater strain on our world's scarce resources. How many extra programs could we buy each year if we didn't have to pay for the unnecessary packaging?

A traditional game of *Concentration* is included on this disk. One or two players can be involved with a choice of two formats. You may choose to match cards of any suit or play the more complex game where colours are also taken into account. These games also have the save and resume function. So if the jigsaw hasn't scrambled your brain, here is another chance!

We are told at the outset that *Brainscrambler* is "entertaining, educational, non-violent, challenging and fun", I would endorse all of those claims. □

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CON SOUND TRATION

It is a sad fact of life these days that children rarely learn their alphabet (or a lot of other things) from their parents or their teachers. With television and now personal computers playing such an important role in the establishment of the foundations of education it is disappointing that Australia is yet to produce a comparable range of educational programs for the TV or the PC.

ConSOUNDtration is an American program (yes, zee not zed) designed for kids aged four years and up. Three year olds with some familiarity with the alphabet or numbers will also learn a lot while using this program. Apart from three and four year olds, 33 year olds and 66 year old kids who enjoyed the old game of Concentration will find this a fun new adaptation of the original.

This game has sound as well as pictures and the object of *ConSOUNDtration* is to match the sound to the picture. Two grids are displayed on the monitor. Use the cursor and the mouse to select a square on the left-hand grid and you will be shown a picture. Next select a square from the right-hand grid to hear a sound. All the usual skills and thrills of the old game are here with a few extras to add a bit of variety.

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One or two players can be involved. The player or players determines if the pictures and sounds will be of:

- (a) letters of the alphabet (all 26, as capitals only),
- (b) numbers (from 1 to 25),
- (c) a range of subjects (animals, tools, the environment etc.)

There are also four levels of difficulty to select from, ranging from 2x2 with four squares to select from, to 5x5 with 25 squares to select from on each side of the screen.

This program is very simple to use, a four year old would have no trouble with it. It boots up quickly and is easy to get out of in a hurry. The voice is clear and the graphics are very pretty and easy to identify. The whole program is mouse driven with simple icons for non-readers.

It is a bit disconcerting at first to see the graphic displayed in the centre of the grid and not on the square you have selected. However you do get used to this feature very quickly.

This program is an excellent way of learning numbers and the letters of the alphabet in the form of a true game. Even after young children have mastered rattling off the alphabet they need a lot of reinforcement of the individual letters. For a long time my four year old seemed to treat "LMNOP" as a single long letter, with all of those sounds running together. This program will show her how to treat them as individuals.

As this game requires the player to

identify the correct sound with the picture, they will be learning how to say the letter or number correctly while they see it on the screen. This is more complex and a more complete lesson than simply matching visual images.

The game of *ConSOUNDtration* itself will appeal to all age groups. A game with two grids of 25 each will be a challenge to all players. Listening skills will develop as players are required to identify sounds and discriminate between the sound of a hammer and a drumstick. Memory banks will be exercised as in the original game of Concentration and players will need to attend to the various visual and audio images displayed.

There are no scores or timers involved, an indication of the winner is very low key and the little man who frowns or smiles can easily be ignored. This is truly a non-threatening, non-violent game for all the family that has significant educational benefits for young children in particular. The kids won't grow out of this one so it represents excellent value in Amiga software.

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The Geos Column

by Owen James

Bruce seems to have disappeared just before deadline, so I'll be taking over the reins for this month. Bear with me if this is not quite up to Bruce's standard - I'm writing it at short notice!

First up is a bit of news that some of you GEOS addicts might be interested in. GEOS has gone IBM! Not satisfied with having a major hold on the 8-bit markets (including the Apple IIs), Berkeley Softworks have changed their name to GeoWorks and have released an IBM version of GEOS. If all goes well, and early indicators are that it will, this could prove terrific news for us 8-bitters. Berkeley Soft... er, make that GeoWorks... are not a company to give up on the C64 because of an IBM success. As the call for more software support for the IBM version increases, I'll bet the 64 will also get a look-in on any new releases. Let's hope so!

Speeding up

The Turbo Master CPU is set to make a big impact on the C64 market, and it's a terrific boon to GEOS users. See the review in this issue for details.

I've often complained about the speed of GEOS. In fact the speed factor is just about the only thing holding me back from using applications such as *GeoWrite* full time. Well, I'm happy to report that the Turbo Master makes GEOS scream along, and my mouse behaves like it's on 'speed'! The system requesters pop up fast - very fast. It's enough to make my Amiga bow its head in shame. And *GeoWrite*! No longer is *GeoWrite* a "I'll catch you up later" word processor. I'm a touch typist and I was struggling to keep up with it! So fast, so efficient. This is the type of thing that Brian Dougherty, the creator of GEOS, had in mind when the whole graphic environment thing was first thought about for the 64.

Please note, however, that the Turbo Master CPU is not just a plug-in and go peripheral when it comes to GEOS. When booting the cartridge must be deactivated so that there's no problem with the GEOS protection scheme. You must also install an extra section of boot code and change mouse drivers. All this is extremely simple and the small changes only need to be done once and from then on it's all automatic. Well worth the effort for all it does.

I should also point out that the cartridge will work in perfect harmony with the 512K GEORAM expansion as long as you own some type of expander that allows two or more cartridges to be plugged in together. Pairing these two would create an ideal GEOS environment. Speed from the Turbo Master, convenience from the extra RAM. Ah, but for the want of a healthy bank balance!

GEOS features - what I'd like

It's been almost two years since the latest GEOS version was released. Maybe it's time to give GeoWorks a nudge and tell 'em we're still out here and hungry for more. Here's what I'd like to see for the next release:

BETTER FONTS FOR PRINTING -

How about the type that are making big waves in desktop publishing - Outline fonts? These allow output to be at the highest resolution of any printer. My little MCS 820 prints at almost laser quality. That may sound like a lot to ask from an 64K machine but why not provide the option for those that have the 512K expander? The IBM version supports outline fonts, so perhaps something is in the works.

A WORD COUNTER FOR

GEOWRITE - This would sure be a nice luxury for those of us that are told

to 'Keep it to around 1200 or so', although I'm normally on the 'or so' side of the restriction anyway.

FASTER MOUSE DRIVER - Okay, so I'm a speed freak!

A TYPE-OVER MODE FOR GEOWRITE would sure be nice. Hitting delete all the time can be a bit of a pain. With type-over I could just type over the text to replace it, if I so desired.

A 'HIDE THE POINTER' feature would make me happy. After about five seconds of non-use the pointer would disappear so as to not obstruct my view of the screen. A flick of the mouse would bring it back. Again a luxury but heck, I can dream can't I?

More application software would be nice thing, especially a GEOS orientated music package. How does GeoMusic catch you? As a musician I find it quite frustrating that we have a very music capable computer that has a severe shortage of quality music software available for it. Come on GeoWorks... Give us another first!

PUT GEOS ON ROM - Back in 1989 Brian Dougherty had suggested that this was being looked into but I've heard nothing about it since. Ideally the ROM's should fit ever-so-snugly somewhere inside GEORAM. And finally, I really wish that GeoWorks would take the initiative and release a battery-backed clock/calendar idea for use with GEOS. But PLEASE don't turn it into yet another add-on for the cartridge port. I have more of those than I know what to do with.

Tips and tricks

Tips and Tricks have become a trademark of my C64 column so I thought it would be fitting to have a tips and tricks section at the end of this one. If you like the idea then give Bruce a nudge and see what he can come up with. If that doesn't work then threaten to give him a subscription to an Atari ST magazine. That should work!

• Before investing in an expensive interface to drive that old IBM printer that's been lying around the office, give the GeoPrint cable a go. It allows the C64 to communicate with parallel interfaced printers with exceptional ease. It also works FAST because you're going through the user port of the 64 allowing real parallel communication. It's much cheaper than buying an interface unit, although the cable will only work with

GEOS at this stage.

•You might not know it, but GEOS users have a 'Geo to Sequential' utility on the Q-Link side of their system disk. It's called 'Convert' and can be started from GEOS. I think that its design is to let users send GEOS files over the modem by converting them to sequential files, where they could then be converted back to allow proper use. I've been using it to convert my *GeoWrite* docs to standard sequential files for my word processor. The files need some cleaning up after the conversion, but when you've nothing else.

•GEOS printouts are not as smooth as they should be. Even on my 24 pin printer the quality leaves a lot to be desired. When you're trying to show off to somebody just what the 64's capable of, here's a hint - cheat, ever so slightly. Print it out how you normally do but with a thin black pen neatly fill in where the little jaggies are at their worst, then photocopy the page to cover up your little deception. We wouldn't want to give potential users the wrong impression of

GEOS, right? Besides, if you recruit a new GEOS user the current GEOS community will love you for it.

•Never turn your printer off while the disk drive is running. You could just about guarantee that the 64 will lock itself up and throw away the key!

Geomerge abuses

And last, but by no means least, comes a tip that more-so resembles a personal plea. Don't use things like *GeoMerge* unless you absolutely have to. Sure, it's great that you can produce mail-merge letters but don't make it painfully obvious that you're using them.

I hate receiving letters from close friends that are written like: "Hi, Owen James, How are you, Owen James?" Then you get the type that try to be clever by mixing and matching the database contents like this: "How is your wife, Mrs. James, Owen?". I'm not even married! They are annoying, but not as bad as the ones that get your name wrong in the database. I hate being called Pwen,

but it's even more humiliating to be called by it at least fifty times in the one document! And don't say things like "You're my best friend, <<first name>>" in a mail-merge letter, because you'll never know which two friends will compare letters. Don't abuse *GeoMerge!*

That's your lot for this month. Before you start writing in to complain, Bruce WILL be back next month with the regular *GeoStuff*, and I'll retreat back to my little area.

Stay happy, and keep GEOing!

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CAAR01

Tutorial

by Andrew Leniart

Part 8

Letter No. 2

Ewen Bogle of Hamilton in Victoria writes:

"Dear Andrew, Thank you very much for your column on the CLI. I enjoy it immensely and I must admit that I have learned a great deal from it since its introduction to C&A Review

"I have had my Amiga for just over a year now and as is to be expected, I have grown tired of the odd games and have catalogued just about everything in the house. The CLI side of the computer fascinated me and when your column appeared it was like a breath of fresh air and I attacked it with gusto. However I soon discovered that like most writers (in other magazines) you assumed that we the reader knew what was going on and you fell into the trap of skipping too lightly over the subject matter without sufficient introductory explanation, so that it became impossible to carry out the exercise without the frustration of failure.

"I came across a fantastic program for presenting disks very professionally ie: scrolling text, copper bars, the ability to select operations from function "buttons" on the screen etc... What is the difference between a script file and a text file? Why when I tried to attach an "s" protection bit to my file after carrying out your instructions did I get the message "Protection Failed"?"

Ewen went on to talk about the problems that he was having with this particular program which unfortunately, he forgot to name.

REPLY: Ewen, thanks for the kind remarks and also for the constructive criticism. Yours is not the first response I've had from readers telling me that my writing is going above a lot of peoples' knowledge of the Amiga and that explanations should be made in more detail.

I mentioned in the very first installment of this series that doing a tutorial for beginners is probably one of the hardest things to write. I try not to "assume" people know what's going on, but it is difficult to decide where to draw the line. Nevertheless, I will endeavour to make instructions clearer in future topics and will go over a few of the topics most people seem to be having problems with in future issues.

The problems you are having with your program do not sound to me like

When I began writing this series, I was determined to cater for the utter beginner. I'd read pleas in other publications that no one was catering for the novice and I was determined to change that through these pages. That is still my goal and I'd like to thank those of you who have written to us with opinions of how the column is going. A few of your letters are covered in this issue.

Remember the address to direct feedback and queries in regards to this column is:

P.O. Box 1335
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and don't forget that each month, one letter that I consider to be the most interesting is chosen for a FREE HCS compiled public domain disk full of free and interesting software. Further to this offer, those that send their letters written and saved on disk along with a SSAE can expect their disk back with a randomly selected PD disk copied onto it as well.

Here is this month's winner.

Prize letter

Michael Summers of Albion Park Rail in NSW writes:

"Dear Andrew, What is the dreaded Guru Meditations? How do you get it? How do you get rid of it?"

REPLY: Short and to the point, but it struck me as an excellent question all the same, as it is something that has not been covered yet in previous issues. PD disk on its way.

A Guru Meditation is very simply a total system crash. It's when the Amiga's operating system gets totally confused with what's going on and the Amiga spits the dummy and puts a big red flashing box at the top of the screen with the name "Guru Meditation". Once this happens, you're in a no win situation. If you had any work in Ram that had not yet been saved to disk, then you would surely be faced with doing the work over again. Note that RAD type disks can often recover after a guru and retain any data that may have been stored in them

before the crash.

Anyway, along with the big red flashing box are also some numbers that will give those in the know an idea of why the system crashed. To the average non technical user though, the information given is pretty much useless as you really need a good reference manual along with a good understanding of how the operating system works to make any sense of the numbers.

What causes a guru can be many things. I've had the odd time when my own Amiga 500 would suddenly guru if I tried to leave too many programs running at the same time. One thing that may happen is two programs try to get the Amiga to do the same thing at the same time and before you know it, Guru rears his ugly head.

More times than not, the fault is with the way a program has been written. There are certain rules set down which program writers are supposed to follow when writing programs for the Amiga. It is usually when these rules are not followed or are stretched to the limit that problems begin to occur.

It should also be said however that some viruses can also cause the Amiga to guru. The best way to protect yourself from virus culprits is to regularly check your disks with one of the many virus eliminating utilities available in the public domain. *Zerovirus III* by Jonathon Potter in South Australia is an excellent example of a freely redistributable culprit killer. Another is *NoVirus* by Nic Wilson and of course, the old time favourite *VirusX* by Steve Tibbet in America would also have to get a mention. There are plenty around and just about any PD supplier could help you out with one.

Lastly, the way to get rid of a guru is simplicity itself. Just re-set the Amiga by giving it a warm boot. Ie: Press the Ctrl key along with the two Amiga keys all at the same time. On the very rare occasion that a warm boot will not reset the machine correctly, simply switch off the power to the machine for at least ten seconds and switch back on.

Problem solved.

they have anything to do with protection bits. The reason you would have gotten the message "Protection Failed" when trying to set the "s" or "Script" protection bit on your file could have to do with the version of Workbench that you are using. Up until and including the 1.2 version of Workbench, there were only four protection bits available to us in Dos, being [R]eadable [W]riteable [E]xecutable and [D]eleteable. See the July 90 edition of *AC&AR* for more detailed information on this.

When the 1.3 version of Workbench came out, four more protection bits were made available to us, those being [H]idden [S]cript [P]ure and [A]rchived. Check to see which version of Workbench you are using. If your original Workbench disk says 1.2 version, then the "Script" flag is not available to you and you will need to upgrade your software to 1.3 in order to use it. Workbench upgrades may be obtained at most reputable software outlets for around about \$30.00.

In regards to script files, the difference between a script (or batch) file and Text files is simply their contents and

purpose. A script file, for example, contains nothing more than Amiga Dos commands put together in such a way as to perform certain tasks in Amiga Dos in a quicker and easier way. The following is an example of a simple script file:

```
Echo "Copying some often used
commands to RAM"
Dir Ram:
Makedir Ram:c
Copy Df0:c/dir Ram:c
Copy Df0:c/cd Ram:c
Copy Df0:c/type Ram:c
Path Ram:c add
Echo "All done."
```

Now if we were to enter the above script in our favourite text editor like *Qed*, *Ed* on workbench or even *Notepad* and save the file to disk with a name like "RamCommands", then we would be in a position to create a C directory in Ram: and copy the Dir, Cd & Type commands to that directory with one simple step.

Ie: Assuming we had saved the script file to our root directory on workbench, then the command "Execute DF0:RamCommands" would put the script into action. Now notice that every

line in our example script file begins with an Amiga Dos command. In our example there are four. Echo, Dir, Makedir and Path.

As I said before, this is but a very simple example. Well thought out script files can save you hours of typing and achieve a wide variety of different things. A text file on the other hand contains just that, text! The file that I save this article to on my Hard Drive is a text file. It serves no purpose in Dos, yet is still useful.

In regard to the problems you are experiencing with your program, then the best course of action is to go straight to the horse's mouth so to speak. Write to the author of the program direct. Most Public Domain programmers supply an address so that people can report bugs and give feedback etc and you should be able to find this information in the docfile that accompanied the program. There are literally thousands of various programs in the Public Domain circles and this fact alone makes it near impossible for us to try and solve individual problems people have in these pages.

Continued on p44

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Letter No. 3

The final letter to get published this month comes from Shane Crosland in Westmead NSW.

Shane writes:

"Dear Andrew, I have an Amiga 500 with 1 meg of memory. I have several problems that I hope you can help me with. Firstly, since I have had my Amiga, which is a little over a year, I have had a very big problem with read/write errors on my writeable disks. Almost every time I save or delete something, I get read write errors all over the disk.

"Secondly, do you think it is worth adding a small RAD disk to hold some-Dos commands I use or should I stick to using a Ram disk? Thirdly, the computer gives off a lot of interference and not only affects the TV, but also my parents TV and gets worse at night. I would greatly appreciate any help and I know there are many others that would like the help as well. Finally, may I congratulate you on a terrific column, it's been a great help."

REPLY: The problems you are having with Read/Write errors on your disks are almost certainly due to a misalignment of your disk drive's heads. A read/write error on the odd disk can sometimes be caused by a faulty disk, but if the problem occurs every time you save to disk, then it is a hardware problem. Perhaps the computer got a knock at some stage which may have caused the problem. The only solution is to get the Amiga to a computer doctor such as your local ComCare centre and get some qualified help.

While you are there, tell them of the problems you are having with the Amiga causing interference on household appliances and they might be able to suggest a suitable suppressor to be fitted to prevent this.

In regard to your queries on Rad, last issue, I promised an explanation on the Rad disk, what it is and how to set one up, so you are in luck. Read on.

The RAM disk

For the benefit of those that still may not understand, let's have a look first at what a Ram disk is and how it works.

A Ram disk (or Device) is very similar to a normal floppy disk drive with the exception that all its operations happen in the Amiga's working memory. In other words, it is a disk and disk drive bundled into one and can be used just like any other disk drive connected to the

Amiga, although there are some limitations. The main advantage to using a Ram disk over a normal disk drive is its speed! The following exercise will illustrate this point very well if you would like to see the difference for yourself.

Note: If you do not have a Ram disk showing on your workbench screen after boot-up, simply enter a CLI or SHELL and type the following two commands.

```
Dir Ram:EndCli
```

Now open up the ram disk by double clicking on it and open up your workbench disk the same way. Copy a program into ram (Clock is a good candidate) by dragging its icon from your workbench disk over to the ram disk. The drive will spin and a copy of Clock will soon be sitting in the ram disk's window. Now double click on the Clock icon in your workbench disk and note how long it takes for the program to start.

Close it and do the same again except using the copy you made in ram. Notice the difference in speed? The reason for it happening so quickly is that the Amiga did not have to access a disk drive to load the program because the program is already sitting in memory. By the way, the word RAM, stands for "Random Access Memory" which is a type of memory which allows free access to both reading and writing. Now the above exercise proved the point of the speed achieved using ram so it's fair to say that most would probably want to use ram for running many other types of programs as well as use it to store data such as documents from a wordprocessor to save time when loading and saving them. However there are disadvantages to using ram disks as well.

Disadvantages with RAM

One major hassle in using a ram disk for storage is that the contents of a ram disk are only temporary! So if you had a system crash, more commonly referred to as a "GURU MEDITATION", then everything you had stored in ram ends up lost and there is no way to get it back. For this reason it is essential that any important data be also saved to a real floppy disk where it's less prone to ending up in nowhere land after a crash.

Another thing to consider when using a ram disk is its memory requirement. The memory capacity for the ram

disk is "dynamic" in that the amount that you can store in a ram disk is limited only by the amount of system memory you have available. However the more you place in ram, the less memory you have left for other applications. Therefore, if you use up 400K of memory by placing programs in ram, chances are that you won't have enough memory left to run some of them, especially if you don't have any memory expansion and are limited to 512K. So what you place in ram requires more consideration on a 512k machine than if you had about 2 Meg to play with and I suspect that not many reading this would have that kind of memory available!

RAD versus RAM:

In a short while, I think you'll agree there really is no contest. RAD or "Recoverable Ram Disk", while similar in application and use to the RAM disk is really a very different and more powerful beast altogether. Unlike Ram, Rad WILL survive a system reset and in most cases will even recover from a GURU. I.e: The data that you have saved to it will still be intact.

Even if you found you had lost some of the contents after a GURU, you still stand a chance of recovering your work using the "DiskDoctor" command or similar utility. Re-read my column in the August edition of ACAR for more information on how to use Diskdoctor.

Another difference between the two is that Ram is available at any time simply by going through the two steps I described earlier. Rad, on the other hand, must first be mounted before it is available and we shall discuss how to go about this shortly.

Note: On Workbench 1.3, the Ram-disk now automatically appears without the need for the "Dir" command. Lastly, given the fact that you have enough memory to do it and a 1.3 kickstart version Rom in your machine, you can indeed set up a Rad disk so that you can actually re-boot from it. All that is required is to copy a whole Workbench disk to Rad, Assign all system functions to Rad with the help of the assign command and you will end up with an Amiga which will re-boot via Ctrl-Amiga-Amiga keys without the need for a disk in any drive. Pretty impressive stuff!

A disadvantage to RAD

The differences between RAM & RAD are few apart from the ones pointed out

above. RAD does however have one disadvantage as opposed to RAM in the way that its memory requirements are NOT dynamic. In other words, the amount of memory that RAD requires is pre-determined in the MountList file which is in the "devs" directory of the Workbench disk. Once "mounted", Rad uses that amount of memory whether you have stored anything in it or not. Personally, I firmly believe that this disadvantage is heavily outweighed by the lack of aggravation one suffers when faced with the task of typing in one or two hours of work all over again.

Mounting rad

Mounting Rad is not all that complicated once you've thrown out Commodore's excuse for a user's manual and read some decent explanations on the subject. Assuming the use of Workbench 1.3, mounting Rad on your system simply involves editing the "startup-sequence" of your workbench disk to include the following line.

Mount Rad:

The main thing you need to remember is that this line must be entered somewhere before the "EndCLI >Nil:" command at the end of your startup-sequence or else it won't execute correctly. Simple as that. But don't forget that we must specify how much memory capacity we will allocate for Rad, so to do this we must edit the Mountlist file in devs first to specify this.

Let's use Ed on our workbench to edit the MountList file. Enter a CLI and type in Ed devs/Mountlist and hit return. After a short while, the Workbench text editor 'ED' will present you with the mountlist file ready to accept any alterations you care to make. Move down the file using the cursor keys on your keyboard until you come to the section which should look similar to the following.../*

This is an example of a mount list entry for using the recoverable ram disk. Depending on the amount of memory you wish to devote to it, you may want to change the HighCyl value.

*/RAD:

Device = ramdrive.device

Unit = 0

Flags = 0

Surfaces = 2

BlocksPerTrack = 11

Reserved = 2

Interleave = 0

LowCyl = 0

HighCyl = 21

Buffers = 5

BufMemType = 1#

To specify Rad's memory capacity, the part of this file you need to edit is the < HighCyl = 21 > part. Left as it stands above, Rad's capacity would equal to 242K of memory. The formula for working this out is this.

Each cylinder has a capacity of 11K. Therefore, (21+1) x 11K = 242K. So if we wanted to give Rad a capacity of say 385K of memory, we would calculate it using the above method and then change the

< HighCyl = 21 >

to read

< HighCyl = 34 >. I

e: (34+1) x 11K = 385K.

After you have completed making your changes, press the Escape key followed by X and Ed will save the MountList file along with your changes and place it back in its original directory. This will also automatically cause Ed to return you back to the CLI you started him from.

Don't worry if you find the above a bit too confusing at these early stages, as leaving the MountList file in its original state will provide you with ample Rad memory capacity anyway (242K) so you need not even bother changing it at all.

Now what?

Having made any necessary changes to your startup-sequence and the mountlist file, all that is left to do is give the ol girl a boot.

Reset the Amiga via Ctrl-Amiga-Amiga keys and watch what happens. When Workbench finishes loading, you will notice a new disk icon at the top right of the screen called RAD. Experiment a bit with it and get the feel of how it works. Copy a

couple of things into it and reset the Amiga again and watch in amazement as everything still appears intact after the reboot. Try doing that with a Ram disk..!

Note that switching the power OFF to the Amiga, even for just a split second, will cause all contents in RAD to be lost for good. It is worth remembering this because a sudden loss of power to your home afterhours of saving important data to RAD could cause you considerable heartbreak. Important irreplaceable data should always be saved to floppy disk regularly (just in case).

Naturally, the more memory you have on your machine the better when talking about Rad. The bigger you can make it, the more gear you'll be able to fit into it and the faster your machine will work. Another reason to pour more cash into the bottomless pit of computer gear.

Y'know, I sometimes wonder if the computer manufacturers don't pre-plan it that way...?!

Till the next issue...



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Telecomputing Column

by Jonathan Scowen

The purpose of this column is as a monthly update of what's going on in the world of communications. There are BBS's opening every month, some closing down, changing their name, changing number of lines, etc. This column will keep you update with these.

Here are some statistics about Bulletin Board Services in Australia:

ACT	Total Systems : 12
NSW	Total Systems : 184
VIC	Total Systems : 161
QLD	Total Systems : 72
SA	Total Systems : 44
WA	Total Systems : 43
TAS	Total Systems : 9
NT	Total Systems : 4
AUST	Total Systems : 529

If you're new to communications here is some information about it:

Firstly you need a modem. A modem modulates and demodulates information. At one end it modulates, sends it through a phone line, then the modem at the other end demodulates. A modem plugs into three sources - a power supply, a standard telephone plug, and of course into your computer. A modem can go at different speeds (measured in bits per second - bps - or it is sometimes called the baud rate). Speeds range from 300 up. The most popular is the 2400 for home use (local calls). The faster the modem goes the quicker you may transfer files.

The next thing you need is a program. They sometimes come with your modem, if not there are a few commercial programs (ie *GPterm*) but they are very expensive to purchase. There are several shareware programs available on most BBS's but they are not much good there if you can't access the BBS. One of the better shareware communications programs is *JRComm* V1.01.

I have compiled a disk with an assortment of communication programs, if you want this disk send \$3.50 (includes

disk, programs, and postage) to my address given at the end of this column.

Next you need a list of numbers. There is a sort of phone book on disk available from the Australian BBS Registry - these are available on most BBS's (and are also available on the compiled disk mentioned above).

Once you have got all that, you are ready to explore.

Probably the next thing you would want to do is download a file. First thing, you must make sure that the protocol the BBS you called is using to send the file with is the same as the protocol your communications program is receiv-



ing it with. I recommend for files less than 140k use ZModem and for files larger than 140k use XModem-CRC.

When you have the file in your hands, you will notice that there is a three letter ending on the filename. Before a program can be made downloadable it must be compressed. Compressing a file joins all the files in the program into one and also makes it a smaller file. These three letters tells us what program was used to compress it.

.PAK

There is no program for uncompressing these. First you must run *Fix-Obj* on it. This is available on most BBS's or on directory utilities. If you are lucky this will be already done for you

and you can just type "1> <filename>". In other words, just run it.

.ARC

You will need Arc. Some BBS's have just the file not compressed. To find out how to use it type "1> Arc?"

.ZOO

You will also need Zoo. To find out how to use it type "1> Zoo h"

.ZIP

You will need *UnZip* or *PkaZip*. *PkaZip* is a large program, not a command like most of the others.

.LZH

You will need *LbArc* or *LbArca*. *LbArca* is a command where *LbArca* is a full program run by icons, etc.

Type "1> LhArc?" for usage of *LbArc*.

.LHW

You will need *LhWarp*. Type "1> LhWarp?" for usage.

.WRP

You will need *UnWarp*.

They are the most popular compression programs.

On a BBS there is always something you can do. There are online games, role playing games, chatting to other users (if the BBS has more than 1 line), downloading new files, writing mail to other users (even in overseas countries), and much more. If you ever get sick of playing games, just plug in the modem and be entertained.

If you have any questions or comments I can be contacted at:

Jonathan Scowen
PO Box 162
Epping NSW 2121
or call my BBS:
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Next month's column will contain "What's new in BBS's?", a BBS owner interview, and lots more. □

'Incredible' NEW Style of Game!!

from PACTRONICS



EXTERMINATOR AMIGA

It was a summer's day in a quiet street in a leafy Chicago suburb. Suddenly the tranquillity was disturbed by a piercing scream: "Help me! Help me!" The houses were infested with mutant insects and crazy cans - even the toy tanks has come to life! This wasn't a job for any pest control man - it was a job for THE EXTERMINATOR.

Gottlieb's unusual all-action coin-op really comes to life in this great conversion - take control of a giant animated hand as you squash the frogs, crush the cans, shoot the wasps and grab the flies! The incredible graphics and digitised sound combine with the atmospheric music to recreate all the fun of the arcade hit!

Watch out for the giant tomatoes! Grab the juice bottle whizzes past! Move from room and from house to house - you'll need to put all your arcade skills to the test if you're to succeed as THE EXTERMINATOR.

- Lifelike graphics and animation recreate all the realism of the original.
- One or two can play simultaneously
- Seven houses to clear each with five rooms - plus the "Ultimate Wave".
- Digitised sound and music from the coin-op
- One of the most unusual games of all time!

Great NEW Strategy Games

from PACTRONICS

WHITE DEATH Battle for Velikiye Luki, November 1942



WHITE DEATH AMIGA

The Russian Front, winter 1942. As the German Sixth Army slowly starves in the devastated city of Stalingrad, the Soviets have launched a second onslaught against the Wehrmacht.

In a communique which Moscow radio broadcast last night the Russians announced their objective: Encircle and destroy the German garrison entrenched at the vital rail junction of Velikiye Luki. Lieutenant General Perkeyev's Third Shock Arm, reinforced with three separate corps have been assigned the mission.

The stage is set for a bitterly fought battle on the cold snowy waste of the Eastern Front.

WHITE DEATH is adapted from the GDW board wargame of the same name, which won in the year in which it was released, the Game Designers Guild Award and F & M's Best Operational Game Award.

BLITZKRIEG AMIGA / PC

Germans tanks since dawn have been thrusting into Allied lines at points over a 60-mile front from the River Roer to Luxembourg.

It seems the Germans have decided to launch a counter offensive of some considerable strength. They are throwing in a fresh division of infantry, and these men, with the tanks, have overrun a number of villages and made several wedges on the Belgian-German and Luxembourg-German borders.

Take over and simulate one of the greatest battles in history. BLITZRIEG AT THE ARDENNES delivers astounding detail and depth along with incredible battle sound effects. You can be assured of many many hours of exciting wargaming simulation!



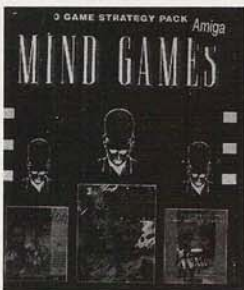
MIND GAMES AMIGA

A chance for you to re-write history and the future in 3 strategy wargames.

Waterloo: After his escape from Elba, Napoleon returned to Paris in March of 1815 to take power over the French Empire. With heroic arrogance, he mustered an army and attempted to defeat the Allies before the armies of Blucher and Wellington could be reinforced. On Sunday, 18th June 1815, these three armies met in a Belgian field; it was a day that was to become emblazoned on the pages of history - the Battle of Waterloo.

Conflict Europe: Taking the players through seven different conflict situations, the simulation examines the shifting balance that exists between nuclear and conventional forces, between NATO and the Warsaw Pact. Allowing for full examination of the consequences of European conflict. CONFLICT:EUROPE shows why the nightmare must never become reality.

Austerlitz: The date is the 2nd December 1805. The place is a few miles east of Brunn in the province of Moldavia. Ranged across the barren Pratzen heights are the forces of the Austro-Russian army. Facing them, between Santon Hill and the River Bosenitz is Napoleon's Grand Armees. The greatest battle ever to be fought by France's 'Little Corporal' is about to begin.



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The C64 Column

by Owen James

The computer industry is certainly moving forward at an almost frightening rate. It seems like only yesterday that I was unpacking my first C64 and marvelling at the power which it possessed.

Then the Amiga came on the scene. I remember reading the specifications of the cute little 1000 and thinking that it belonged to some Walt Disney fantasy. "4096 colours? 256K RAM? Stereo sound? Amazing!"

Now look. An Amiga 3000 with two megs of RAM standard upgradable to 18 megs, full 32-bit pathways, internal hard drive, numerous additions for the entire Amiga range including products such as 'Colourburst' which gives 16.8 million colours, and STILL there's talk of a 3500! With competition like that it really is amazing that the 64 hasn't been left for ancient history. But still the 64 lives and breathes.

Is the 64 just left to sit back and watch this evolving computer revolution as a passive instrument of yesteryear? It doesn't have to. Of course it can't keep up with Amigas or high-powered Macs, but so what? There's still a strong market for the 64 with the average home user. And I think that with some small changes the 64 could have a significant bite (byte?) out of the low-end Amiga market.

Overhauling the C64

The 64 needs a major overhaul, involving both a cosmetic change, and a marketing change. Our old friend the 64 could easily become a little brother to the Amiga. Here's some ideas:

Firstly, STANDARDISE THE KEYBOARD. Add a numeric keypad, and have the keyboard set out just like a standard typewriter. Now this may seem bit silly when it's the components inside that are the most important part, but if a computer looks and feels professional people will use it in a professional way.

Dump its dreadfully outdated operating system. A lovely blue screen and BASIC interpreter might have been alright to be confronted with years ago, but people now want a user-friendly com-

puter with a GUI (Graphic User Interface). My suggested replacement? GEOS! Why not have a setup similar to the Amiga's which requires Workbench (or in the GEOS case, DeskTop) to be loaded from disk? Or better still, how about GEOS on ROM?

In 1989 Brian Dougherty, the brains behind GEOS and Berkeley Softworks (now known as GeoWorks), had indicated that putting GEOS on ROM was being considered. The ROM chips could then either fit onto a cartridge or, best of all, within the spare sockets in the RAM expansion units (REUs).

Just imagine if this happened. A system that was more efficient than the Amiga's available on a 64. Why would it be more efficient? No need to wait for it to load from disk, and it would even have a top quality word processor and paint package available as standard, not to mention all the additional add-ons such as *GeoDex* etc.

If all this was coupled with something like the 512K expansion card and CPU accelerator I spoke of a while back we'd have one hell of a computer! The average person really doesn't need the power that the Amiga has to offer. No one can deny that the Amiga is a wonderful computer, but what's the point of having those capabilities if I only want it for simple home use and perhaps the odd game?

MCS 810 printer

Hands up those of you out there who bought the 'Pro Pack Plus'. Of those of you with your hands still down, raise your hand if you bought the MCS 810 separately. I'll bet there's a few of you out there with raised hands (me included!) I've had only minimal complaints about the MCS but I'm told that I'm one of the lucky few. I've heard stories about consistent break-downs, print heads wearing out too quickly, and even the odd tale about very poor quality output.

For those of you who don't know the story, the MCS 810 is a rebadged Okimate 20. It's a 24 element thermal dot matrix colour and black and white printer. The MCS 810's standard interface is a

Commodore serial (perfect for the 64) and for around \$150 can be upgraded to a standard parallel interface for use on IBM and Amiga computers.

It's a wonderful little printer to look at. Colours which match both the 64 and the Amiga, VERY small and compact, and extremely quiet. And the good thing is that it's so cheap! For a full-colour, 24 pin thermal printer you'd usually be looking at a price above \$600 or \$700, yet the MCS costs only around \$400 including mouse and software.

When I wanted a parallel interface I picked up a whole new printer with the interface already installed (MCS 820) for \$166 from Penrith ComputerSpot. Be warned. As I'm sure most MCS users will tell you, it is not faultless. Ribbons are expensive. We're talking about \$20 here for a ribbon that can only be used once and doesn't last long at all.

Thermal paper

I've found the cheapest way to run the printer is using thermal paper, which is one advantage of it being a thermal printer. Even with this I can't print a page for under 13 cents a sheet, and that's black and white. Don't think you can use any old paper and get great results, because you can't. Printing on normal paper, even photocopying paper, gives less than acceptable output with parts of letters missing and an overall blurred look. This is because it's thermal rather than impact dot matrix. Thermal printers prefer absolutely flat paper with no unevenness at all. Take a look at photocopy paper in the light. See the fibre content of the paper giving an uneven surface? This is what causes the problems. Thermal paper is perfect for the MCS, though, because it is absolutely flat and thus gives good results.

Another thing on its downside is the lack of different fonts. The MCS gives you only one. Sure it has an expanded version, a fine version, and the usual ten or twelve CPI (characters per inch) mode, but no real variety. Unfortunately, even the inbuilt font doesn't print as well as you might expect from a 24 pin printer. This is because when printing on perfectly flat paper, such as the thermal type, it gives too clean a print. You can see where every dot was printed and so diagonals tend to look a little jagged.

Most other 24 printers are impact dot matrix which is inclined to blur on the paper ever so slightly to make it look like a much better resolution (kind of like the 'anti-aliasing' technique sometimes used in computer art, where the

lines are blurred often using other colours to make them appear less jagged). Of course using rough paper helps this along nicely, but the MCS blurs too much and makes the print look worse.

Again on the downside is the current situation with print heads. These are hard to get hold of here in Oz. According to my local computer shop here in Katoomba, Commodore won't give them much help in the way of spare parts because they aren't a dedicated or authorised Commodore repair centre. When I did finally manage to get hold of one it cost me \$109. Unrealistic seeing that I paid only \$161 for the whole printer.

If you're a user thinking about buying the MCS 810 then consider the pros and cons very carefully. If you're after a low purchase cost printer that gives good quality printouts, vibrant full colour, and a good upgrade offer (to a standard parallel interface if you want to use it on an Amiga or IBM) then the MCS might be the choice for you. The MCS 810 is small, very quiet, and, apart from the change of print-head, reliable.

If you've had either good or bad experiences with the MCS 810 or MCS 820 then I'd love to hear about it. If, on the other hand, you'd like a bit more information and some sample printouts then send me a stamped, self-addressed envelope and I'll tell you what you want to know.

Tips and tricks

Tips and tricks are becoming a little scarce again, so I really would like your support to keep this section going. I want your tips, tricks, pokes, and anything else you'd care to throw at me.

- Users wanting to drive a parallel printer from their 64 should wait before investing in an interface unit. If you're a GEOS user then look at the *GeoPrint* cable first. From first hand experience I can tell you that this cable is brilliant. A very inexpensive way to use those professional printers.

- Here's a cute little 'do-nothing-useful' trick. Type in the following lines:

```
10 FOR A=0 TO 255 : POKE 53270,A : NEXT A
20 POKE 53270,200
```

What did you expect, something productive?

- Selective directories. To check for only certain file types in a directory use the equal sign and the type-specifier. For example, to check the directory for only sequential files beginning with the letter G:

```
LOAD "$0:G*-S",8
```

Or to check the names of all the sequential files:

```
LOAD "$0:*-S",8
```

- If you're like me you'll get in the middle of a creative urge when writing with a word processor, and not know how to spell a word or forget a person's name that you're going to mention. In these situations I type a double asterix (**) or some other easily recognisable character/s. When the creativeness stops flowing you can use your wordprocessor's search facility to find the asterixes so you can easily change them into what they were meant to be.

That just about wraps up yet another month of 64 bits and pieces. Remember to keep your tips, tricks, original proggies, or brickbats rolling to me care of this address: The ACAR, PO Box 288, Gladesville, 2111.

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by Owen Webster

VIRUS ALERT

Every month in this column I will be discussing new virus strains which have appeared on the Amiga, as well as doing reviews on PD virus killers, interviews with virus authors (where possible), and other virus related items of interest to ACAR readers.

If you have any special questions or problems concerning Amiga viruses, feel free to write to me at the address at the end of this article. Include a stamped, self-addressed envelope if you would like a personal reply. Also, if you come across any "suspicious" bootblocks or disks, send them to me to examine. Your disk will be returned.

Below is an update to the new viruses which have appeared in the past few months:

Turk Virus v1.3

This is an update of the previous version of the Turk virus. It originally appeared from a trojan called "Colors" which was around on several bulletin boards until it was discovered how dangerous it was. The program opens up a small window with some text inviting you to press the left mouse button to start the "demo". After watching the disappointing display and pressing the left mouse button again, the window disappears and you are returned to the CLI. However, it has also placed the Turk V1.3 virus in memory, which becomes active at the next reboot.

After several disks have been infect-

ed an alert appears which says: "Amiga Failure...Cause: TURK VIRUS Version 1.3". It infects all write-enabled disks inserted and won't allow a boot of any infected disk, which means you will have to boot with a clean disk and load whichever virus killer you use (I recommend KDVIII) to destroy it.

Alien New Beat

This virus is relatively new, although like many of its predecessors, it only writes over the bootblock of an infected disk. It can be recognised by text in the bootblock which says it is a great virus killer (as many viruses now do).

Australian Parasite

Another Australian virus (this makes three). This one is supposed to turn the screen upside down but so far nobody can verify this. It hangs around in the bootblock and writes over all write-enabled disks, despite the text it contains, which says it won't destroy game bootsectors or corrupt disks.

JITR

The JITR virus also only infects bootblocks. It keeps a copy count of how many disks it has infected like the Byte Bandit virus. The text in the bootblock says that it is a "safe virus". (Sure thing!).

Mega master

Yet another virus which infects only the bootblock. Like the Opapa, this virus also produces a black screen, this time with red text which says "Surprise!!!

Your Amiga is controlled by MEGAMASTER".

Extreme

This one is very nasty. The text in the bootblock makes it appear to be an anti-virus, however it is no such thing. If there is any attempt to read the bootblock of an uninfected disk while the virus is in memory, it will write itself to that disk. After infecting four disks it will format the current disk in the drive, produce a flashing alert with some text, and then reset the computer.

Now for my address. If you think you have found any new viruses, want to ask me a question, or are having problems, then write to:

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Epson LQ860 **PRINTER**

by Alan Kirk

The LQ 860 is a 24 pin dot matrix colour printer. Like most top of the line 24 pins, it offers good quality output at a (fairly) reasonable price. But it may not be for everyone. Remember that a dot matrix will never match the graphics quality of an inkjet or the text quality of a laser, but few people can justify the cost of an inkjet or a laser for home use.

The 860 is a narrow carriage (80 column) printer. It has a wide carriage (132 column) brother, the LQ1060.

Setting up

The manual is detailed, well illustrated and simply written. Most users won't even need to look at most of it, such as the chapters on escape codes. Assembling the printer can be done in 15 minutes, and the factory DIP switch settings worked without any problem. (If you do need to change a DIP switch setting, the switches are located just underneath the printer's front cover. They are very easy to get at). Remember to buy a parallel (or serial) cable as well, as you won't find one in the box. Both parallel and serial input interfaces are built into the printer.

The 860 can be used with either an all black ribbon, or a colour ribbon which has bands of cyan, magenta, yellow and black. The print head is easily accessible, and you can change ribbons without getting even one inky finger (a source of pure joy after my old MPS1200). Don't underestimate the importance of this!

Colour ribbons for the 860 cost between \$50 and \$70, depending on where you shop. You would be wise to change to the standard black ribbon whenever possible, and to keep your colour ribbon for graphics. A black ribbon has an expected life of three million characters, and a colour one is expected to last from 0.5 million characters for its yellow section, to one million for its black section. Of course, those figures don't mean a great deal if you do a lot of graphics work. You get one of each type of ribbon with the printer.

The printer comes with a built in "push" tractor feeder. Optional extras include "pull" tractor feeders and sheet feeder bins. Advanced paper handling is one of the 860's trademarks. Most of the

time I keep continuous stationery loaded in the printer. If I want to do that special letter on a special piece of stationery, I just press a button to "park" the continuous paper at the entrance, feed in the new stationery using the paper guide, print it, then press a button to return my continuous stationery to the printer. No need to reload it and realign it.

You can adjust your continuous stationery after loading and the printer will remember exactly how far down the page you want to start printing. There is also a "tear off" function that will feed your continuous stationery forward so that you can tear it off at the perforation, then return it to its original position ready for printing. I must admit that I've had a little trouble with that, sometimes the thing will feed an extra page and will return you to the top of the second blank page rather than the first. Of course, either my software or I may be doing something wrong.

There is one other irritating fault. If you are generating graphic print-outs you will often see a thin white line at the top of the page. This is caused by the first page "catching" slightly on the paper guide as it goes through. It doesn't affect subsequent pages. A more serious problem is the lack of a roller or similar device to hold the paper close to the platen. That means that the paper will occasionally catch badly enough to jam the printer.

Finally, be warned that this is not a quiet machine. The printer's built in fan makes a fair amount of noise. This may not be noticeable in a noisy office, but at home it may get on your nerves occasionally. One solution is to buy an A590 which has an even noisier fan, and is guaranteed to drown out the 860's. I suspect that the two of them combined will send you deaf within a week, at which point you can stop worrying about it. (Can't ANYONE design a quiet fan?) The actual printing operation is no noisier than any other dot matrix that I have used, though.

Text and word processing

The 860 has two built in Near Letter Quality (NLQ) fonts (Roman and Sans Serif), as well as draft. Additional fonts such as Script, Courier, Prestige and so on can be added by optional "font cartridges". You can print 10, 12, 15, 17 or 20 characters per inch (CPI). Font and pitch can be chosen by using the "Select-Type" panel on the top of the printer, no need to bother with DIP switches.

Some would argue that there is little difference in quality between 24 pin printers. I cannot agree. The Epson produces very high quality NLQ output, certainly far better (in my opinion) than the 24 pin that I use at work. (That printer had best remain nameless.) I would never be embarrassed to send a business letter using the output from an 860.

If your software (say, *Excellence!*) lets you, you can easily produce colour NLQ output. A single flaming red sentence in the middle of a stock black letter is just the thing to attract the reader's attention. If you dream of producing multi-coloured *Excellence!* output using your system fonts (Diamond, Garnet, etc.), however, you can forget it unless you are fortunate enough to have the wonderful new version 2.0. I had tried many times using my old version 1.12, and had failed many times courtesy of the Guru. There is not much doubt in my mind that the fault was with the old version of *Excellence!*, not with the printer.

The output is quite quick, ranging from 300 characters per second (CPS) in high speed draft mode, down to 75 CPS at 10 CPI pitch. That means that I can produce an A4 NLQ page (10 CPI) in a bit over a minute. That's fast enough for any practical home or office use that I can think of.

By using an easily accessible lever, the printer can be set to accept a wide range of paper sizes and thicknesses including envelopes, labels and multi-part forms.

Graphics

If you are a graphics fiend, you will already know that dot matrix printers have serious limitations in this area. The colours are usually darker than they appear on the screen. The output is sometimes a bit smudged. To get anything other than solid blocks of cyan, magenta or yellow the printer has to perform multiple passes which eventually dirties the yellow section of your expensive ribbon. And if you're desperate to get just the

right colour you have to experiment with the preferences settings for EVERY picture, then when you finally do get the right colour settings you find that you've already used up a large chunk of the ink on your ribbon anyway.

If you AREN'T a graphics fiend, but have ambitions to be one, it's better that you be a little disillusioned now, than very disillusioned later. If graphics will be the main goal of your computing life, perhaps you would be better off forgetting about dot matrix printers. See if you can grab a copy of the July 1989 issue of *ACAR*, read George Kimpton's review of the HP Paintjet, buy one, then rush your Bankcard to hospital for resuscitation.

If graphic prints are a peripheral area of concern to you, the 860 might be the way to go. You can still produce quite attractive graphic prints from the 860. When I printed Graaf's "Tiger" picture, for instance, it came out a bit stripy and some parts of the tiger's coat seemed to have a greenish tinge because the yellow section of the ribbon was a bit dirty. Even so, the result was not unattractive. You must remember this, dot matrixes are far better at producing solid blocks of colour (pie charts, graphs, text, etc.) than they are at producing subtle shades. That means that if you have to do a report to the board of directors, or submit a college assignment that was done using your favourite spreadsheet program, you can use a bit of colour to impress and to get the main points of

your message across. The 860 will serve you well. But you will never win the Archibald Prize with it.

Desktop publishing

Now for the good bit. *PageStream* has a driver (Epson QC) which is dedicated to printers like the LQ860. No-one would ever suggest that you can set up your own printing house using a dot matrix, but for one off jobs (say, a special poster for a social event, or a birthday greeting) you can do very nicely indeed with one of these. Watch your fellow Amigans drool as you produce *PageStream's* legendary smooth dot matrix output in glowing colour while they have to settle for boring grey! Add an imported IFF graphic or two, and you will have output that is the envy of your colleagues!

Your main limitation is speed. Since your Amiga has to calculate all the fonts, you are NOT going to be able to run off 100 copies of a complex colour *PageStream* document. When I had only 1 Meg of memory and *PageStream* version 1.6, I sometimes had to wait up to an hour for a single page. *PageStream* version 1.8 is much faster, but you can still forget about your plans of printing 50 colour copies of your gardening club's weekly newsletter. You could, of course, print a single master copy and avail yourself of the colour photocopying facilities available at many instant print

shops these days; but with colour photocopies often costing at least \$3.00 per A4 page, that isn't a realistic option for most people.

Conclusion

Bad points:

(a) Noise from the fan (though this is not a serious problem).

(b) COST. The 860 currently sells for anything between \$999 and \$1399. Shop around. The cost of the colour ribbon is also a bit excessive. It's a very expensive proposition for your average home user, but its design is so advanced that it is unlikely that it will be made obsolete within the next five years; not by any new dot matrix, anyway. This is about as good as the technology is going to get, the new 48 pin models notwithstanding. (Epson have advised me that they are no longer producing 48 pin models in any case.)

(c) The printer does not hold the paper close enough to the platen. That causes both the catching problem that I referred to earlier, and means that the printer sometimes fails to print the last line or two on single sheets because it thinks that it is out of paper.

(d) The printer vibrates quite a bit. As a result, thin vertical lines (up to 1 point) sometimes take on a slightly "stepped" appearance. This problem is nowhere near as noticeable when you are printing in colour, as the separate passes of the print head tend to disguise it.

(e) If your goal in life is to produce the ultimate *DPaint III* print out, you don't want this, or any other, colour dot matrix. Trust me.

Good points

In a word, FLEXIBILITY. The 860 is a printer that will produce superb NLQ documents. You will never need better quality type than the 860 can give you but if that is all you are after you could go for a much less expensive printer like the LQ400.

If you want to get a message across, though, colour is one of the best ways to do it. Within the limitations that I have described the 860 can do some pretty mean stuff, especially when teamed with killer software like *PageStream*. □

RRP base model LQ860
\$1409
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Using Tiger Cub

Part II

by Eric Holroyd

In part one, (November issue) I'd talked about using *Tiger Cub* in conjunction with a MIDI synthesizer and had written the 'Boogie Blues' three part tune for use as a demo for later articles. Incidentally, I know it's a pretty corny tune but I wanted something simple and if we'd used a commercial or 'pop' tune we'd have been up for pretty hefty royalty payments to the copyright owner. Anyway, I hope you've all got the tune entered and working so that we can carry on with the program.

Internal sounds

This issue we'll be using the Amiga's Internal Sounds for the benefit of those folks without a MIDI synth. There are some pretty amazing sound capabilities using the computer's own sound chip and *Tiger Cub* is set up to use standard IFF sounds. These are known technically as IFF 8SVX sounds, and samplers such as *Pro Sound*, *Future Sound* and *Perfect Sound* etc produce this type of file if you want to make your own instrument sounds.

It's great fun to do this and samples such as the sound of blowing across a bottle neck, tearing paper, tuning a short wave radio, or even a baby's burp can be used as instruments for playing your *Tiger Cub* music. You could sample the dog barking then use it to play 'How much is that doggy in the window' if you wanted a sound specific to the song too.

Apart from sampling your own sounds there are literally hundreds of ready made instruments which come with other Dr T's software (*Music Mouse*, *Keyboard Controlled Sequencer* etc etc) as well as in other music software such as Electronic Art's *DeLuxe Music Construction Set* and Aegis's *Sonix* and various others. I used a number of instruments from DMCS for this month's article by simply copying them to my *Tiger Cub* data disk.

Before I go any further I should clear up some potential points of confusion. *Tiger Cub* uses the word 'Instrument' to mean a list of names of up to 128 program names, or sounds. These, when using Amiga's Internal Sounds, are stored in a directory called 'Samples'. Thus when you load an Instrument, it gets the data it needs from the 'Samples' directory. Other music programs call their sampled sounds 'Instruments' (as does DMCS) so when you're hunting around for new sounds to use as instruments in *Tiger Cub* it's a safe bet that you'll find them in directories called either 'Sounds' or 'Instruments'.

With *Tiger Cub* running you should select Internal Sounds from the Utilities drop down menu and from its requester you can load IFF sounds from other disks by selecting 'Change Volume'. The requester lets you load up to 16 sounds (dependent on memory) and if you have your Boogie Blues in memory you can check out each sound as you go so that you can decide whether to keep it or not.

Directories

What I did was to format a blank disk, then, using my favorite file copier (DirUtil3) I used MAKEDIR to set up three directories: Drumkits, Instruments, and Samples. I then copied Boogie Blues, all the Drumkit data straight over from the original *Tiger Cub* Auxiliaries disk, along with the '.info' files for the three directories and Boogie Blues.

The next thing was to copy sampled sounds from DMCS's Instrument directory to my new Samples directory. The sounds I used were: Accordion, BuzzSynth, Clarinet, ElecBass, HollowSynth, JazzGuit, PhaseSynth, StratSynth, Strings, and Trumpet. Although not strictly necessary as the sounds are to be loaded from within *Tiger Cub*, and not separately by clicking on the WorkBench screen,

I copied 10 '.info' files from Auxiliary/Samples and renamed them to suit these 10 new samples.

Next I loaded *Tiger Cub* and from its File menu I loaded the Boogie Blues. To get it to play using the Amiga's sound chip I then had to select Internal Sounds from the Utilities menu, then Load IFF Sounds from the requester. 'Change Volume' brought up my data disk's name so I clicked that and then its 'Samples' directory. I was then able to load all the ex-DMCS sounds I'd copied over to this disk. Once in memory I used the same Internal Sounds requester to Save Instrument. This, of course, is saved in the Instrument directory and you need to give your instrument a name. I called it 'MonAmi' (Get it? My friend - My Amiga?) and the program automatically puts '.SND' after it as it saves so that it knows it's an Instrument.

There's another way to do all this if you prefer (and it's probably quicker than the way I've just described). The Internal Sounds requester lets you 'Copy All Instruments' and which actually lets you copy all IFF samples currently loaded to your chosen destination directory. Having done that you then need to give it a name as an Instrument (.SND file). From hereon in all you need to do is select 'Load Instrument Bank' from Utilities/Internal Sounds. So that you don't have to go through the Internal Sounds routine every time you boot up for a music session you can have *Tiger Cub* load it all for you automatically by saving your Internal Sounds setup in the same directory as the *Tiger Cub* program. If you're working from floppy disks like me - I can't afford a hard drive - that simply means saving it to the master disk as 'DEFAULT.SND'.

Playing

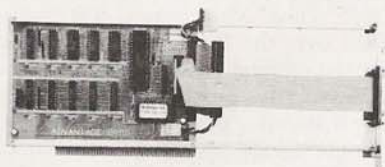
With these sounds loaded to memory let's use them to play the Boogie Blues. Click play on the tape recorder screen and it'll start playing. Click EDIT to switch to the Graphic Edit screen and you'll see the 'notes' scrolling past. Spacebar starts and stops the music here and you can change the sounds in the various tracks by pointing and clicking on the 'Track Information Line' at the top of this display.

Several of the parameters here have arrow brackets which you use to raise or lower their values. Click the left arrow bracket to lower the number and the right one to raise it. As we have three

Continued on p54

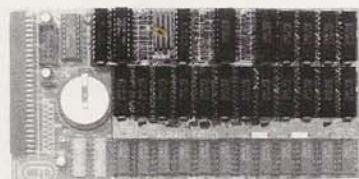
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SCSI and RAM controllers for the Amiga 2000



AdSCSI 2000

Adjacent are the test results of five SCSI host adapters using Disk Speed 3.1 with a Quantum 40S hard drive and a single 40 megabyte freshly formatted partition. The far right hand column shows the results of a simple copy test in which the same drive was set up with two 20 megabyte partitions and 10 megabytes of data was **COPYed** from one partition to the other. The copy syntax used was "COPY DH1:DH2:all quiet". NOTE: DiskSpeed 3.1 is a product of MKSoft.



AdRAM 540

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6800 Results (stock Amiga® 2000 computer with ICD AdRAM™ 2080 using 2 megabytes of FAST RAM)

Host Adapter	Files Create	Open Close	Scan	Delete	Seek Read	512 Bytes	4,096 Bytes	32,768 Bytes	262,144 Bytes	Copy Test Mins Secs
ICD AdSCSI 2000	29	50	147	66	198	Create	78,352	168,298	336,807	392,272
						Write	86,133	190,379	457,690	645,277
						Read	91,762	237,763	457,041	642,190
IVS Trumpcard Professional	11	41	126	30	197	Create	28,860	153,831	267,899	313,226
						Write	30,139	189,238	505,528	617,093
						Read	74,988	244,848	499,569	640,148
GVP Series II	10	35	104	35	204	Create	29,142	154,273	256,876	311,771
						Write	29,909	187,258	461,229	542,842
						Read	60,750	239,531	432,960	603,225
GVP Impact 2000	10	33	96	31	203	Create	29,048	142,406	235,676	279,620
						Write	29,889	189,413	419,430	503,631
						Read	54,902	197,040	367,216	486,589
Commodore A2091	7	26	68	24	200	Create	15,780	94,187	199,728	224,069
						Write	17,559	116,736	349,525	393,312
						Read	38,153	171,451	413,189	579,357

68030 Results (GVP Impact™ A3001 68030 at 28 MHz with 4 megabytes of 32 bit RAM)

Host Adapter	Files Create	Open Close	Scan	Delete	Seek Read	512 Bytes	4,096 Bytes	32,768 Bytes	262,144 Bytes	Copy Test Mins Secs
ICD AdSCSI 2000	92	145	382	259	783	Create	206,966	185,127	572,357	691,843
						Write	208,331	193,049	591,267	762,600
						Read	251,344	258,940	589,968	764,773
IVS Trumpcard Professional	13	69	213	52	667	Create	29,482	165,598	359,833	440,058
						Write	30,152	189,506	559,280	703,631
						Read	103,033	296,395	563,545	761,159
GVP Series II	12	64	185	53	768	Create	28,994	163,083	366,214	443,694
						Write	29,987	189,506	569,926	707,339
						Read	108,109	293,158	550,448	696,631
GVP Impact 2000	12	61	172	54	752	Create	29,372	162,258	347,714	446,648
						Write	29,952	189,506	562,168	715,872
						Read	54,902	197,040	367,216	486,589
Commodore A2091	10	46	117	31	752	Create	29,155	156,979	283,458	301,274
						Write	29,902	188,375	431,221	446,276
						Read	60,245	241,109	531,906	710,146

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tracks in Boogie Blues let's click the right arrow bracket on 'Tr' (the track number once to go to Track 2. This is the accompaniment and I chose the Accordion sound with which to play this. Click the 'Ch' arrow brackets to display the Accordion sound's number and you'll hear the music playing with this new sound.

The ex-DMCS sounds in my Samples directory are in alphabetical order and so are loaded into the Internal Sounds window in that order. This means that Accordion is number 1, Trumpet is number 10, and JazzGuit is number 6. Use the arrow brackets as above to set Track 1 to Trumpet and Track 3 to JazzGuit and you'll have the same setup as I have.

I used the handy 'Text' feature from the Utilities menu to keep a note of the various things I've done so far. I find this very useful and strongly recommend that you do the same. It's very useful as I tend to forget some of the finer points when I come back at the next session.

Quickscore

As a working musician all my life I've been used to working with standard musical notation and it's fair to say that musicians read this with the same ease that non-musicians read books and newspapers. I'm more comfortable with standard notation than with lists of MIDI events and so on (although I'm learning slowly!) so I welcomed the idea of being able to enter or write music via the MIDI synth and then have the computer 'translate' it with *Tiger Cub's* Quickscore feature to normal notation and print out out for me.

This is great and it's extremely well printed, so much so that when I had to do an arrangement recently for a concert featuring four trumpets I did the whole thing on *Tiger Cub*. I hooked up the synth and set the tempo at a moderate pace and played in the four parts on four separate tracks. Quickscore made a good job of printing the parts out and (for once) there were no complaints from the musicians concerned about the quality of the handwriting or music 'copying'!

Tiger Cub itself is a copy protected program but Quickscore isn't - which means that it can be freely copied to other disks or directories - it's not a stand-alone program and runs only from within *Tiger Cub* (and possibly soon other Dr T programs - I know they're working on it for *KCS*). It's run from *Cub's* MPE (Multi Program Environment) menu where

you select WorkBench so as to go back to the WorkBench screen to double click Quickscore's icon to load it. You're returned to *Tiger Cub* from here and if you check the MPE menu you'll see that Quickscore is now included. Click onto its name and very soon you'll be presented with a nice display of your music and all in standard notation. You can have this in Medium or High Resolution, it's your choice from the Options menu.

Tidying up

From within Quickscore you can print a full score or a single track depending on what you want to do. First of all though, you have several options available from the 'Display' option of the Edit menu to tidy up the music a little. You can select the number of Bars Per Line - very useful for complicated music that you want to spread out for better readability. Normally I like to use four bars per line but you have options from two to eight. If you've written a Bass Line (as I did in Boogie Blues) and it's come up in Quickscore in Treble Clef, you can first of all select 'Single Track' from the Options menu and choose a 'Track Number' - in my case it was 3 - to be displayed. Then, from 'Display' again you set the Clef, choosing from Treble, Alto, Bass, & Drum with the mouse.

There are some pretty amazing sound capabilities using the computer's own sound chip and *Tiger Cub* is set up to use standard IFF sounds.

Another vital operation whilst the Display window is open is to set the amount of Quantization (or automatic correction of note duration). I found with Boogie Blues that it was best to set it at Eighth to correct odd bits of finger fumbling during my Real Time input via the Synth. If I set it any finer (Sixteenth or more) then the whole thing became a mess of dotted notes and rests. Try it for yourself and you'll see the amazing computing power of the Amiga and *Tiger Cub* at work. It all works instantly and when I first saw it in action, in the words of Rex the King of Tautology, I was absolutely flabbergasted!

Other musical parameters that you can set in the Display window include Key & Time Signatures, Ascending or Descending Note Stems, Tie Syncopations over the Beat?, and Clip Durations to Start of Next Note? With a single track selected you can transpose it to another key instantly - try selecting each track of Boogie Blues in turn and transposing them to, say, E-flat. Then select 'Full Score' from Options and you have the whole tune in the new key.

If one of your tracks has a lot of chords in it with lots of ledger lines then select 'Split Track' from the Display window and it will put the music onto a Grand Staff, ie the two staves joined by a bracket that you see in piano music. Wonderful!

There are a few more subtleties (set your own screen colors & resolution, save Startup etc) and when you finally come to a printout you can opt to print the Full Score or just a single line. As you can also have the music play from within Quickscore you'll know whether you've got it right or not before sending it to the printer.

No editing of actual notes is available in Quickscore, you go back to *Cub's* Graphic Editing screen for that and I plan to discuss that in the next article and of course this is a very powerful aspect of the *Tiger Cub* software. I'd be interested to hear from other users of the program with their views on this series and perhaps about specific areas of *Tiger Cub* that they wish to see explored. Also if anyone wants a data disk with the Boogie Blues file on it, along with the Internal Sounds set up as above, I'd be happy to provide it for \$5.00 to cover duplicating and mailing expenses. Address any author correspondence to:

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HINTS & TIPS

What's a frame-buffer?

You hear these exotic words being thrown around often enough, sometimes even by people who can't answer you when you ask them what they mean!

A framebuffer is an electronic device called to store and display a single image to a monitor. Mimetics have developed such a device, called "The Frame-Buffer", thus confusing the generic name with a brand name, and it's capable of displaying images up to 24-bit; of capturing images from a video source, and transporting them to any screen IFF resolution such as HAM, lo-res, etc. So you could say that this device also serves both as an output device and as a video digitiser.

Bogus VirusX

It happened once before to this program - there is a bogus version floating around, V. 5.02. The author, Steve Tibbett, totally disowns it and it could be viral.

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IN THE DOMAIN

by Andrew Farrell

Following requests from many of our readers, the once occasional update we've provided on new public domain titles will now become a regular monthly feature of *Australian Commodore and Amiga Review*. In these pages you'll read about all the latest new releases, join in discussions on issues such as copyright and distribution and find out which bulletin boards are the best for a steady supply of new titles.

What is public domain software?

What can you expect for free? Not very much, so they say. But, they ain't seen what you can score in some of the public domain collections around town.

Public Domain means just that - something which is in the public domain. Technically, it's free of copyright, which means you or I can freely copy and distribute the programs which fall into this category. Compilations of public domain software are available from user groups and commercial public domain libraries. From these sources you can expect to pay for the service these organisations offer. The cost of a disk may vary a little depending on what you get for your money. Typically, a disk costs around \$5.

If you pay less, you may find yourself talking to a recorded message or having to make expensive interstate phone calls. Some companies may offer discounts to bulk purchases which will also bring you down below the \$5 level. If you pay more than \$5 you can expect a 008 Free Call order line, a voice at the end of your call, and support if you're having difficulty making it work. You might also pay more for compilations

which are made according to a specific theme where extra support, installation scripts, printed documentation or other embellishments have been added. Of course, at the end of the day it's up to you to decide how much you're prepared to pay.

The catch with the term public domain is that many other kinds of freely distributable software get lumped in with these programs which are not actually in the same category.

Freeware

The closest of these is freeware. This type of software is very much public domain, except the author has retained copyright but allowed distribution. It's kind of contradiction in terms, but it's really to stop high end commercial use of these programs. In other words, you can't grab what is a great PD program tagged as Freeware and sell it for \$49.95 as a commercial package. (In theory this could, and has, been done with PD software in the first category.)

Shareware

Here is where the world of commercial software and public domain software begin to meet. And this too is the category of freely distributable software which attracts the most criticism and praise.

Shareware products are generally of a much higher quality than pure breed public domain titles. Shareware often appears on PD disks. Shareware programs rely on the good nature and honest heart of the great majority (hope). You can normally use the product for 30 days for FREE and then if you like it and your conscience prompts you to follow through, you're supposed to send some money to the author, often in the form of a registration fee. The amount requested is normally much less than what you would pay for a similar commercial product.

In return you may or may not receive word of upgrades, support and advice. If you keep using the program beyond this date, your Amiga will be prone to unexpected GURU's and your hard drive to a repeated read errors.

Charityware

Same as Shareware, except the money goes to your favourite charity, or one nominated by the author. Can be a little awkward if the charity is unknown to you or too far away to make the fee worth sending.

I'm sure I've missed some other categories of PD out there. Letters explaining what they are and severely chastising me for this oversight will arrive in time for the next column! Hopefully that clears up a few areas of definition. We'll look more at each category in the future.

What's new?

Fred Fish has released a new swag of Fishy disks. The grand total is now an amazing 430. Of course some of the later disk are updates of earlier programs. In our 1991 Amiga Annual you'll find a complete listing of disks from 200 to 400. You can also obtain a database of Fish disks from 1 to 410 for \$5.50 from Prime Artifax (02) 879 7455.

There's some goodies on a few of the new Fish, and a lot of small utilities. Of interest to many regular PD buyers is the first stable PD database in disk 417. DataEasy includes a phone dialer, speech output, a simple screen editor for making and modifying the database definitions, a screen print function, form letter printing, sorting, searching, and two small sample databases.

For electric train buffs, Metro on disk 426 looks like a lot of fun. You play the role of a city planner. Using limited funds, you must construct a mass-transit subway system capable of meeting the needs of your city. Build wisely and your system will be a success, but poor planning will lead to disaster and financial ruin. This is a Shareware program. On the same disk you'll find a very smart collection of hand drawn IFFS well worth collecting.

If you want to bring work home, the new MS-DOS theme disk from Prime Artifax will be a big help. The disk features MSH:, a device which mounts and allows you to read/write and format 720K MS-DOS disks on any Amiga 3 1/2 floppy drive. Any program can access the MSH: device from a file requestor and

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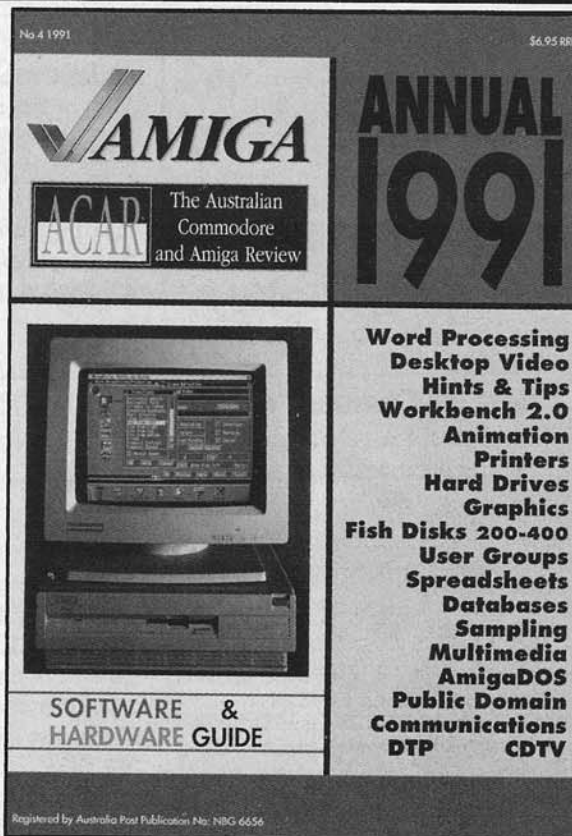
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the floppy can also act as a standard Amiga-DOS device at the same time. Installation is simple thanks to an icon driven install script which copies all the relevant drivers and mountlist statements to the right places. There's a number of other utilities too. If you have Maxiplan which read/writes Lotus 1-2-3 worksheets, or virtually any commercial database which reads/writes dBase files, or any good wordprocessor, you could very easily bring work home and send it back in the morning. The disk is \$5.50.

If you know of a good theme disk, or operate a PD library and would like to get your new releases reviewed or mentioned in this column, post a copy to the magazine, with details of your services. I'm also interested to hear comments from readers about programs you've found useful.

New demos

By now most of you must have seen the Hinch demo and Vizard demo. Both of these are Australian and feature frame grabbed animation of Darryn and Steve doing their thing. There's also some fun digitised voice and soundtracked music to go with them. If they're not on your local BBS be sure to ask your PD supplier. These two are a must for every demo collector.

I'm hoping to review a few new demos every month and to start publishing a few piccies from good ones we receive. To get your demo mentioned, send a copy to the magazine. If you can include an IFF piccy we can include for an illustration!

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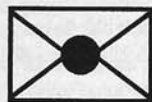
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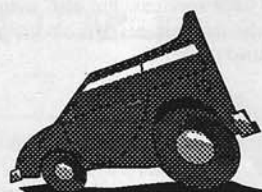
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Drip: A full blown arcade game that's very out of the ordinary. It's up to you, as the 'Drip', to rust your way up 15 floors and get the juices flowing again. Avoid running or dripping into the acid, plasma and icebees shooting out of pipes. You can get a little help from party balloons and bubbles that float by. Drip requires 512k of memory.

Entertainment

BoingDemo: Despite the name, this is not a demo as such - it's one of those try before you buy versions of a commercial game, only this one is very playable. The Boing part is a salute to the original Amiga Boing Demo! In this level and ladders game, you travel about on poles, ladders, teleport points and at all costs avoid the Bouncing Amiga Ball!

RollOn: The play is a little like Boulderdash or Emerald Mine. Eight levels are included. To win you need to plan ahead and organise your moves carefully - sort of a joystick strategy. Includes a level editor to design your own games.

SlotCars: A complete working game of SlotCars...just one of four games in the commercial package known as: 4 IN ONE - EASY BUT FUN! The game concepts are simple but addictive. A combination of strategy and dexterity is needed to beat this one.

MoonBase: Adventure/ArCADE - guide the shuttle ship to and from the mother ship with the valuable cargo. A multi-level lunar lander.

Strategy

Turn: A strategy game - the aim of which is to produce a given pattern of stones on the board. In order to complicate the game a little bit, all stones around the selected stone will turn either from black to white or from white to black. There are 18 levels available. There's also a pattern editor to design your own games.

China Challenge: Similar to the well known game Shanghai or Mahjong, the target of China Challenge is, to remove all parts of the pile, the so called Dragon, step by step. This dragon is composed out of 120 different pieces. A challenging past time, fun for two players too!

MarbleSlide: You've got to be quick to get this one. This is the fullest extent to which we've ever seen the old magic square theme taken - and one of the best. Slide the sliders to guide the marble home. But your time is VERY limited!

AmiGo: Strategy Board game for one, two or no players!

Workbench

SimGen: How would you like Saturn on your Workbench? SimGen makes your screen look like it is Genlocked. A number of example images are included. Much better than DropCloth or any other of these Workbench background programs. Doesn't slow your Amiga down either!

Flip: This screen gag will drive you nuts. Try it out!

Rocket: Yet another in the great line of Workbench gags. This little number releases a guided rocket which heads straight for your mouse pointer. If you don't move in time, on impact the whole lot explodes. Stick it on a friends Workbench for fun!

Business

Liner: Our serious program for the month. If you develop outlines for speech, writing, essays or reports, this program will help you organise and edit your material in point form - the best way to develop an outline. A fast solid program.

WO: A short and quick utility, which helps you to bring order in your addresses and codes them and saves them (password-encoded) on disk.

Graphics

MandAnim: If you enjoy madlebros, you'll love MandAnim. Using a simple tweening process, you can select multiple key areas of a mandlebrot. MandAnim will generate as many steps as you specify between each frame creating an expanded animation file which you can load and animate in Deluxe Paint III. Some impressive graphics can be achieved.

Hennon: You can create some fabulous looking images using this program which lets you explore Hennon mapping. The program produces patterns like the one below using the formula $x = x * \cos(a) - (y - x * x) * \sin(a)$ and $y = x * \sin(a) + (y - x * x) * \cos(a)$. Several example images are included. Full 640 x 400 hires is supported.

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Amiga Live #2 (2 disk set) \$11.95
Amiga Live #3 (3 disk set) \$18.95
Amiga Live #4 (3 disk set) \$18.95

Amiga Live #5 (3 disk set) \$24.95

3DTicTacToe: 3D "four in a row" version of TicTacToe.

Password: Enhance your computers security by making it complicated enough that users without your password will get discouraged trying to boot your system. Update to version on disk #243.

PUZZ: Sliding block puzzle concept. Good graphics, create your own puzzles using IFF ILBM file and a text file. Includes source and sample puzzles.

Pipeline: Like the game 'Pipe Dream', requires joystick and PAL display.

Blob: Makes red drops of slime flow down your screen.

Berserker: Virus killer which checks for certain conditions indicating possible virus infection. Different from other programs of this kind as it doesn't rely on checksums only, but also checks the possible virus behind the altered checksum. Even new viruses with old infection methods can be traced and resident tools are not touched.

Stitchery: Shareware. Loads an IFF image and creates charted patterns for use in counted cross stitch and other forms of needlework. Requires 1mg and works best with a high resolution printer.

SAS Tools: Various submissions from "Sick Amiga Soft". Includes some virus tools, screen hacks, some small games, and miscellaneous utilities.

KeyMenu: Allows fast easy access to pull-down menus from the keyboard without having to remember all the special Amiga key sequences.

SunMaze: Expanded 3D maze demo from disk 171.

Cursor: 3 pass BASIC compiler for BASIC programs written in AmigaBASIC, does not yet support all of the BASIC commands but is able to compile itself.

SnowFall: Screen hack for the Amiga.

Imperium: Four player strategy game based on gaining control of Europe.

Converter: Graphics conversion between various formats including Atari-ST formats.

Music Box: Background sample player.

★NEW ★ NEW ★ NEW★

Emulators and File Transfer

MS-DOS Theme Disk \$5.50

Install a full MS-DOS device using a simple install icon. You can then read/write 720K IBM disks and format them too! MSH: acts like any other Amiga device. You can share the selected drive between MS-DOS and AmigaDOS. Full documentation and other useful utilities included.

Atari Emulator \$5.50

Despite the German menu titles, it is possible to put this Atari emulator which runs in low, medium or hires to some use. Will run some applications and can be used to view Atari graphics. Assorted other utilities are included on the disk.

C64 Emulator \$5.50

A very full-blown C64 emulator. Lots of utilities, more menu control and transfer options than previous commercial programs. If you like what you see you'll need to purchase the serial interface direct from the U.S.A. - full details included with the disk. Full documentation on disk.

New Animations

BusyBee \$5.50

Sculpt-4D animation of a bee flying about the screen in full 3D! Requires 1 Megabyte of RAM. Another classic.

Crionics \$5.50

Great graphic demonstration that really shows of the Amiga's potential. Produced out of Great Brittain - Fantastic effects.

Batdance \$5.50

A mixed digitised sample of the Batdance from Prince.

Epic Demo \$5.50

Ocean gives a sneak preview of a colossal game where you help a dying planet's population relocate. Worth seeing.

New Theme Disks!

Strek Trek byAGatron \$14.95 (3 disks)

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C64 Sound & Graphics

by Greg Perry

This month we conclude our look at hi-res graphics and begin a new topic - Sprites.

Bank selection exercises

These machine code graphics routines were especially written to allow you to easily experiment with the BANK selection and move the screen and bit-map RAMS in the multicolour mode.

Initially, you will find BANK selection and the associated changes in screen and character RAM positions very confusing. That is, if you have understood the concepts discussed so far. If you do not understand programmable characters or bit-mapped graphics, it would be better to skip this section until later.

With either program HRG TEST 1 or HRG TEST 2, it is now easy to change BANKs, screen RAM and bit RAM bases as follows:

Change	Variable	Line Number
BANK Number	BN	130
Screen Base	SB	150
Character Base	CB	170

The other vital pointer, the Screen Page pointer (location 648), is set by the initialise routines but it is included in all the programs for completeness (Lines 160 and 190). It is strongly recommended that the user follow a procedure of always setting the screen pointer whenever screen RAM or BANK pointers are

changed. The values for screen and character bases must be selected from the tables in Appendix 1.

You may change things as you wish but may not use the following

BN=3 with SB=0 or CB=0 overwrite the machine code program.

It is fatal to use BN=0 with SB<16 or CB<8. These settings will overwrite the operating system.

In BANK 0, care must be taken with the Screen Base so that it does not overwrite the program. Try SB=>80.

The most common selections would be to use BN=1, SB=0, and CB=8, or BN = 1, SB =128, and CB=0..

In BANKS 2 and 3 a strange thing happens; the bit-map is cleared correctly but when it is used to display the characters on the screen you cannot simply turn one bit ON but instead a whole character block (8 X 8 bits) appears. This probably happens because when using BASIC these areas have ROM and RAM at the same memory locations. When you write to the location you set the RAM but when the VIC II reads it back it gets the ROM pattern instead. Incidentally, in machine code you can switch out the ROMs leaving the RAMs accessible, giving you large areas for special screens, character sets, and sprites. This is done in many commercial programs.

There are other interesting phenomena you will encounter in experimentation with BANK selection. One, for which I can't find any particular use, is obtained by setting the screen RAM within the bit-map RAM, that is BN=1,SB=0,CB=0. Remember that two of the four available colours are stored in the screen RAM. Now, when you write to the bit-map area where the screen RAM is located, the colour of that character block also changes! (The only way to learn is to try it. If it crashes, you simply turn the C64 off and start again.)

Summary

Now it's all up to you. The above routine can readily be used to create a host of interesting graphics. The possibilities are only limited by your creativity and patience.

Multicolour mode graphics find wide applications in games, education and scientific programs. In education, for example, it is easy to draw various geometric or mathematical functions on the screen to actually see their shape instead of patiently plotting the function on paper.

A word of warning: multicolour mode graphics are very addictive, you may spend hours simply trying different patterns!

The routines in this column only scratch the surface of what can be done with high resolution graphics. A number of very good graphics programs are available in the public domain or from commercial software. Some even provide the user with a drawing tablet and therefore totally eliminate the need for any programming skill.

Getting into sprites

Sprite graphics are one of the most fascinating features of the C64. Interesting and often exciting graphic sequences can be programmed with relative ease. Although the C64 does not provide any direct BASIC control over sprites, they are not difficult to program - it's just a matter of learning which memory locations to use.

In fact, using sprites simply involves constructing one, or more, large programmable characters and placing them on the screen when and where you wish them to appear. Before we look at how sprites are constructed, let us preview what sprites are, and what can be done with them, by looking at the various memory locations which control their behaviour. Each topic will be discussed in greater detail later in this chapter.

Commodore 64 sprites

Sprites in the C64 are officially designated as Moveable Object Blocks (MOBs). Each block uses 63 bytes of RAM memory and contains the sprite pattern in a matrix of 504 dots or bits. This is called a bit-mapped image, the same as used with programmable characters and high resolution graphics. (A byte contains eight bits.)

Each of these blocks can be individu-

ally displayed anywhere on the screen under the control of the VIC II chip. Sprites can appear on the screen concurrently with any of the other graphic modes such as programmable characters and high resolution graphics, etc.

As with the other graphics of the C64, there are two modes for sprites: High Resolution Bit-Mapped Mode, called simply high resolution, and Multicolour Bit Mapped Mode called multicolour.

Any given sprite can be in either mode and sprites of both modes may be on the screen at once.

The basic sprite image of 504 dots or bits is made up by a grid of 24 horizontal by 21 vertical dots. This corresponds to a size of three normal screen characters wide by roughly two and a half characters high. The two colour modes display this information differently.

In the high resolution mode, each dot in the image corresponds to one point of light on the screen (a pixel). The main sprite image may be any one of the 16 available colours. Each pixel in the sprite may either be "on", which lights the pixel in the set colour, or "off", where whatever is on the screen behind the sprite shows through, be it clear screen, characters, or graphics (or even other sprites as we will see later).

In the multicolour mode, the horizontal bits in the sprite grid are combined in pairs. Each pair of bits lights a corresponding pair of pixels on the screen. This pixel pair may be either "off", where the background screen image shows through as above, or "on", where the pixel pair may be any one of three of 16 available colours. The choice of colours is not completely independent. Each sprite can be allocated one individual colour, as in high resolution mode, but the other two are common colours for all multicolour sprites. Both high resolution and multicolour sprites are displayed on the screen as a grid of 24 X 21 pixels. However, because the horizontal resolution in multicolour mode is halved to provide the extra colour information, the pattern for a multicolour sprite actually consists of a 12 X 21 grid, where each horizontal dot is defined by two bits in RAM and corresponds to two screen pixels. We will look at how this is achieved later.

Virtually any number of sprite images may be stored in RAM, depending on the available free memory space. In BASIC however, only a maximum of eight sprites may be displayed on the screen at one time. Using more than three in-

volves some prior planning, as we will see. Each sprite on the screen may be generated from a different pattern in memory or one pattern may be used to generate a number of identical sprites.

To make a sprite perform, a number of memory locations must be set. These are called registers, and we will look briefly at what each of these do. Don't be put off by the seemingly vast amount of information. It is far easier to program sprites then it may at first seem.

Sprite pointers

Once the pattern for each or any of the eight sprites has been stored in RAM, the VIC chip has to be told where to find the required image. This is done by setting one or more of the eight sprite pointers. These are located in the C64's memory immediately above the screen RAM at locations 2040-2047. The pointers are numbered from 0-7 respectively. (2040 is sprite pointer 0, 2047 is sprite pointer 7)

Sprite priority

From the sprite pointers, each of the eight possible sprites is assigned a corresponding number 0-7. (The variable SN will be used from here on to refer to the sprite number.) This number defines its priority with respect to the others: the lower the number, the higher the priority, so sprite number 0 has highest priority. If the images of two or more sprites are programmed to overlap at the same screen location, the one with the lowest number (highest priority) appears in front of or over the top of the other(s). That is, sprite 3 will appear in front of sprite 4, and sprite 0 will appear over all the others. In such cases, a window effect is possible through the transparent areas of the front sprite image.

Sprite registers

If a sprite is to be displayed on the screen, a number of pointers or registers must be set in the VIC chip to tell the C64 what, when, and where to put the image. These registers in the VIC chip start at memory location 53248 and it is easiest to remember these different registers in reference to this starting address. For example, use $V = 53248$ then refer to a register address as $V+2$, $V+21$ or $V+39$ etc.

If you run into trouble when

programming sprites, holding down the RUN/STOP key and tapping RESTORE resets all the VIC chip registers back to their default values (everything off).

We will deal with these registers not in numerical order but in the order of their importance.

Sprite Position: $V+SN*2$, $V+SN*2+1$

Each sprite is positioned on the screen by defining both a horizontal coordinate (X) and a vertical coordinate (Y). These refer to the screen position of the top left corner of the sprite pattern. Each sprite is allocated a separate register for each coordinate. The horizontal position (X) is stored in register $V+SN*2$ (where SN is the sprite number) and the vertical position is stored in register $V+SN*2+1$. These registers contain a single byte, so the values must be 0-255. As discussed in more detail later, the X position may sometimes be greater than 255 whereupon a second X register must be set. There is only one of these for all sprites, the sprite X MSB (Most Significant Bit) register.

3Reg#	Location	Description	No	0	X position
00	53248	Sprite	0	Y	"
01	53249	"	1	X	"
02	53250	"	1	Y	"
03	53251	"	2	X	"
04	53252	"	2	Y	"
05	53253	"	3	X	"
06	53254	"	3	Y	"
07	53255	"	4	X	"
08	53256	"	4	Y	"
09	53257	"	5	X	"
10	53258	"	5	Y	"
11	53259	"	6	X	"
12	53260	"	6	Y	"
13	53261	"	7	X	"
14	53262	"	7	Y	"

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15 53263 " 7 Y "
 16 53264 X Most Significant Bit
Sprite Colours: V+39+SN

Each sprite has an individual colour register. This is the only colour register for a high resolution sprite. The colour number (0-15) is placed in the location V+39+SN, corresponding to the sprite number. These registers contain a default setting which provides different colours for each sprite. These registers are in fact half a byte (nibbles) which is four bits. A PEEK to any colour register returns the value + 240. The correct value is found by using, for example, PRINT PEEK(53287) AND 15.

Reg#	Location	Sprite No	Default Colour
39	53287	0	1 [WHT]
40	53288	1	2 [RED]
41	53289	2	3 [CYN]
42	53290	3	4 [PUR]
43	53291	4	5 [GRN]
44	53292	5	6 [BLU]
45	53293	6	7 [YEL]
46	53294	7	12 [<PUR>]

Multicolours: V+28, V+37 & V+38

By default, sprites are assumed to be in high resolution mode. A special register is allocated to determine in which mode to display each sprite. This is called the sprite multicolour mode select register. Multicolour is selected by setting (to 1) the bit 7-0 corresponding to the sprite number. A bit of zero sets high resolution.

Reg# Location
 28 53276 Select Multicolour Mode

For multicolour mode, two extra colours are available but they apply to all sprites. These are called the multicolour registers 0 and 1. They are set with the colour number 0-15.

Reg# Location
 Default Colour 37 53285 Multicolour 0 0 [BLK] 38 53286 Multicolour 1 4 [PUR]

Sprite Enable: V+21

The VIC chip must be told which sprites are to be displayed on the screen at any given time. This is done in a single sprite enable register. Each sprite is allocated one bit in this byte. Setting the bit corresponding to the sprite number (SN) displays the sprite on the screen as determined by the other registers.

Reg# Location
 21 53269 Sprite Enable

Sprite Expansion: V+29 & V+23

Each sprite may be displayed on the screen doubled in size in either or both the horizontal (X) direction or the vertical (Y) direction. This is done by setting the bit corresponding to the sprite number in either the X expansion register or the Y expansion register. It is important to note that this does not increase the actual resolution of a sprite pattern from 24 dots horizontally to 48 but simply doubles the size displayed on the screen.

Reg# Location
 29 53277 Horizontal Expansion
 23 53271 Vertical Expansion

Background Priority: V+27

By default, each sprite will appear in front of, or over the top of, what is called the background - whatever is on the screen at the time. The preference for the sprite can easily be changed to, say, make a sprite plane "disappear" behind a cloud or a sprite car move behind a tree. This facility can be used to create some interesting three dimensional illusions. A sprite is set to lower priority than the background by setting the bit corresponding to the sprite number in the sprite-background priority register.

Reg# Location
 27 53275 Sprite-Background Priority

Collisions: V+30 & V+31

When a sprite is placed on the screen and it touches either another sprite or any other image on the screen, the C64 will automatically detect this collision and set either the sprite-sprite collision register, or the sprite-background collision register. If sprites collide with the background, the bit corresponding to the sprite number will be set to 1. If two sprites collide, both the corresponding bits will be set. No action is taken when collisions are detected unless your program specifically examines these registers to see if a collision has occurred and then makes the appropriate decisions.

Reg# Location
 30 53278 Sprite-Sprite Collision
 31 53279 Sprite-Background Collision <5.3

Sprite demonstration.

Before we look at creating our own sprites, follow along and set up some of

the pointers to see what sprites look like. Enter and run the following program.

```

Program: SPRITE DEMO
10 REM (C) GREG PERRY, BRISBANE,
1984
100 REM SPRITE DEMO USING
RANDOM PATTERNS
110 V=53248
120 POKE 2040,7: REM SET SPRITE 0
POINTER
130 POKE V+21,1: REM ENABLE
SPRITE 0
140 PRINT "[BLK]HIGH[SPACE]RES
[SPACE]SPRITE"
150 GOSUB 310
160 PRINT "[GRN]EXPAND[SPACE]IN
[SPACE]X"
170 POKE V+29,1: REM SET EXPAND X
REG
180 GOSUB 310
190 PRINT "[YEL]AND
[SPACE2]EXPAND[SPACE]IN[SPACE]Y"
200 POKE V+23,1: REM SET EXPAND Y
REG
210 GOSUB 310
220 PRINT "[<RED>]MULTIColour
[SPACE]SPRITE"
230 REM SET MULTIColour REGISTERS
240 REM SET SPRITE COL REGISTER
250 POKE V+39,2
260 REM SET MULTIColour REGS TO
BLK AND YEL
270 POKE V+37,0: POKE V+38,7
280 REM SET MULTIColour ENABLE
REG
290 POKE V+28,1: GOSUB 310
300 PRINT "[<BLU>]END[SPACE]OF
[SPACE]DEMO": END
310 REM MOVE SPRITE TOP LEFT
DIAGONALLY
320 FOR I=0 TO 200
330 POKE V,I: POKE V+1,I
340 NEXT
350 FOR I=1 TO 2000: NEXT
360 RETURN
    
```

Although we have not yet put any sprite patterns in memory, this program gets the pattern from memory locations 448-511, part of the operating system RAM. (User patterns must not be put in this area.) These change as the program runs, so you can "see" the computer working! The program REMs explain the main points so let's move on to creating our own sprites in a more specific manner. Hold down RUN/STOP and press RESTORE.

Next month: Design Sprites

Phil Campbell's Entertainment

2000 copies of AMOS sold in Australia

Yes, folks, it's official - 2,000 copies of the AMOS game programming language have been sold in Australia so far. That means we can start looking forward to some top class games.

Big plans for Mindscape

After a successful Christmas season, Mindscape have big plans for 1991. A diversified product range, closer links with major stores and some hot new titles are all in the pipeline. Watch out for the Nintendo version of the MIRACLE PIANO TEACHING SYSTEM in March, with an Amiga version in June.

Judge Dredd out soon from Virgin

Watch out for your favourite comic strip Mr Nice Guy on your Amiga screen

soon - *Judge Dredd* will be appearing late this month courtesy of Mindscape.

Software support for CDTV

Questor are already planning to introduce software for the Amiga CDTV, with a number of titles ready to appear in their catalogues. Mindscape are also planning to support the CDTV as soon as possible, and report that most international publishers are keen to get involved with the machine. Commodore, however, are still playing their cards close to the chest.

Final conflict?

In what must rate as an unfortunate piece of timing, a game called *The Final Conflict* arrived on my desk on the day war broke out with Iraq. "Your worst nightmare has just begun - diplomatic attempts to solve political tension have failed" says the description on the box. The game involves over 95 countries, an

intelligent computer enemy, an optional nuclear scenario, arcade style sub game and is totally icon driven for easy play.

Awesome Limerick Competition winners

Aaargh! Where have all the poets gone? Judging the December AWESOME competition was not a job for anyone with literary sensitivity - that's why I asked my mate Tim Wilson to give me a hand.

Seriously though, Tim is a keen amateur poet, and after due consideration he has awarded the five prizes to the following entrants.

First prize goes to regular entrant Chris Wootton of Mornington, Tasmania, who wrote:

"There was a young man named Dawsome, Whose ears were a size truly awesome, One of his flaws was going through doors, His ears wouldn't fit, so he'd force 'em."

Not bad, Chris, and it even raised a chuckle.

Other prize winners were Marcus Mariani, of Cardiff, NSW, Mark Healy, of Esk, Qld, Deborah Ockwell, of Peaches-ter Qld, and Tracey Chilcott, of Bald Hills, Qld. Congratulations to you all, and thanks to Mindscape for the prizes!



MINDSCAPE COMPETITION



Win a copy of the new *Psynosis* game described as "the hottest ever released."

Hundreds of tiny creatures run around your screen, falling down holes and traps, doing all they can to end their crazy little lives. Your job is to save them, using clever tactics and a number of little lemming helpers - there are climbing lemmings, parachuting lemmings, horizontal diggers, exploding lemmings and many more.

Sound crazy? It is, but it's addictive as well.

And you can win a copy simply by entering this month's word game - we'll play the usual letter jumble, with three prizes for the entries who can make the most new words from the letters

L-E-M-M-I-N-G-S

Should be a little easier than last month, so get to work now, and send your entries to

**MINDSCAPE LEMMINGS COMPETITION, c/o PHIL CAMPBELL,
PO BOX 23 MACLEAN NSW 2463.**

Competition closes at the end of February.

Amiga hints

BATMAN THE MOVIE

Yuri Kulikov, from Strathfield NSW, typing JAMMM on the title screen will give you infinite lives. F10 skips levels.

NINJA WARRIORS

Also from Yuri, if you want to succeed at *Ninja Warriors*, during the game just press the caps-lock button, type one of the following codes, then press caps-lock again. Here they are - MONTY PYTHON, SKIPPY, A SMALL STEP FOR MAN, THE TERMINATOR, STEVE AUSTIN and KYLIE. Mmmm ... whoever made up that lot has certainly got a taste for the best Australian exports. Wasn't Skippy the one who sang "Do the locomotion?"

SHINOBI

Again from Yuri Kulikov, pausing the game and typing LARSXVIII will give you infinite credits.

SILKWORM

Type SCRAP 28 on the control options screen. Don't know what it does, but I guess it's worth a try!

SUPER CARS

Finally from Yuri, enter your name as RICH and you'll be credited \$500,000 cash, which will come in very handy if you want to customise your car.

X-OUT

Juris Graney has been experimenting with the X-OUT cheats printed in December ACAR, and reports as follows...

"If you want 500,000 credits (who wouldn't?): Take the DEAREST ship which is the last one and place it in the outfit area. Then buy the cheapest SATELLITE and place it on the credits of the shop and press the button.

"There's also another cheat but this one takes a very long time to work. When you are confronted by the first end of level guardian shoot off the bottom hooter (the one closest to the skull) then position yourself so that you are not shooting the last hooter (the top one). Make sure you are only shooting the bubbles that he fires at you. This should give you approximately 20 credits per second. This takes ages, but if you are persistent and you've got an autofire joystick, leave your room for an hour and come back. It is very interesting to see what happens."

THUNDERBIRDS

The codes for all levels are:
 Level 2 = RECOVERY
 Level 3 = ALOYSIUS
 Level 4 = ANDERSON

Hall of Fame

NO CHEAT MODES ALLOWED!

AMIGA

ARKANOID	976,548	Kamikaze Andy
AMAZED	130,500	Chris Turnadge
BATTLE SQUADRON	99,999,999(c)	Amos Burbidge
BEYOND ICE PAL.	67,626(c)	Chris Turnadge
BLOCKOUT	85,281	Stephen Lark
BOMB JACK	200,680	David Thompson
BUBBLE BOBBLE	1,200,460	V. van der Heyden
BUGGY BOY	103,350	David Thompson
CHASE HQ	4,851,590	Juris Graney
CONT. CIRCUS	4,529,690	Amos Burbidge
CRAZY CARS	86,064,640	Kristian Wehner
CRAZY CARS CHALL	2,627,935,660!!	Nick Mercure
CRYSTAL HAMMER	43,847	David Thompson
CYBERBALL	475,000	David Marsh
DENARIS	53,900	Peter Evans
DRAGON NINJA	246,400	Rod Matthews
DOUBLE DRAGON	124,630	James Knight
ELIMINATOR	246,570	Greg Munro
FLOOD	6,455	Embah Beaton
GEE BEE AIR RALLY	307,466	Kamikaze Andy
HYBRIS	1,826,075	Embah Beaton
IK+	114,400	Scott Southurst
IMPOSSIBLE MISSION	66,380	Diane Unwin
INDIANA JONES L.C.	completed	Phillip Nicoll
SS	1,420,450	A G Smyth
KARATE KID II	52,000	Robert Dunn
LEATHERNECK	84,700	Rod Matthews
LIVE AND LET DIE	96,520	Merekee Beaton
MAJOR MOTION	50,658	Owen Webster
MENACE	996,481	Kamikaze Andy
MINDWALKER	306,214	P Schumacher
MOUSETRAP	71,977	David Rich
N. Z. STORY	546,695	Embah Beaton
OPERATION WOLF	344,800	John Boyle
OUTRUN	26,331,122(c)	Benjamin Moen
OFFSHORE WARRIOR	626,345	Jacob Booth
PACMANIA	3,250,140(c)	Amos Burbidge
PINBALL MAGIC	332,390	Tracey Chilcott
PINBALL WIZARD	171,150	Aaron Sanderson
PIONEER PLAGUE	35,412	Keir Sooby
PLUTOS	129,450	David Rich
POPULOUS	208,600	Mal Cockburn
POW	612,865	David Thompson
RAINBOW ISLANDS	781,370	Jurrin Beaton
RAMPAGE	111,600	Kamikaze Andy
ROBOCOP	352,780	Rob Matthews
ROTOX	183,050(c)	Faye Doherty
SIDEWINDER	811,250(c)	Amos Burbidge
SILKWORM (Heli)	1,186,000	Angelo Augustis
SILKWORM (Jeep)	515,100	Andrew Barker
SKWEEK	1,525,740	E. Beaton Level 92
SPACE ACE	22,140	Neville Clarke
SPEEDBALL	17,650	Amos Burbidge
STARWARS	5,722,822	C. Mingos wave 33
STRIDER	113,950	Kamikaze Andy
SUPER CARS	13 races	David Marsh

SUPER HANG-ON	25,042,850	David Worthy
SWORD OF SODAN	364,750	Kamikaze Andy
TEEN.M.N.TURTLES	546,600(c)	James Leeken
TEST DRIVE	112,915	Wayne Haesler
TEST DRIVE 2	309,397	Charles Edmiston
TETRIS	10,101	Cheryl Marsh
TETRIS	Level 232	Stephen Lark
THUNDERBLADE	336,520	Rod Matthews
THUNDERCATS	522,300	Scott Southurst
TOWER OF BABEL	25,934(c)	Stephen Lark
TURBO OUTFUN	100,260,819	Matthew Mantle
TURRICAN	1,302,650(c)	Stephen Lark
TV-SPORTS F.BALL	189-0	David McKinney
TWINWORLD	24,640	Carol Love
TYPHOON	54,255	Owen Webster
VIRUS	14,576	Amos Burbidge
WHIRLIGIG	28,210	Nathan Allen
XENON II	1,007,830	Kamikaze Andy
ZOOM	58,903	Sally Pollock

COMMODORE 64

BATMAN	473,230	John Nunes
BANGKOK KNIGHTS	36,800	Nick Van Heeswyk
BOMB JACK	344,560	J Jacobs
BUBBLE BOBBLE	4,409,030(c)	John Nunes
BUGGY BOY	119,510	John Nunes
CHASE HQ	9,220,121(c)	ICEMAN
DOUBLE DRAGON	22,840	Joshua Smith
DOUBLE DRAGON II	255,190	Nick van Heeswyk
FAST BREAK	136 to 9	Chris Byrne
GIAN SISTERS	105,200(c)	Russell O'Neill
GRYZOR	203,900	Paul Millward
H. MARADONA	Level M	N. Heeswyk
HAWKEYE	59,000	Nick van Heeswyk
IKARI WARRIORS	267,800(c)	Iceman
INT. KARATE	139,300	Paul Millward
LAST NINJA II	34.2 sec(c)	But how, Nick?
OPERATION WOLF	168,789	Kishore Ludbey
OUTRUN	6,438,787	Kishore Ludbey
PAPERBOY	103,100(c)	John Nunes
QUE-DEX	639	Chris Byrne
R-TYPE	684,200	Nick van Heeswyk
RAINBOW ISLANDS	265,840	Melissa Worboys
ROBOCOP	82,250	Tim Lockwood
ROLLING THUNDER	222,740	Iceman
SALAMANDER	235,300	Paul Millward
STREET FIGHTER	127,050	C. Byrne (clocked)
SUPER CYCLE	212,210	Iceman
TEST DRIVE	36,144(c)	John Nunes
THUNDERBLADE	1,734,040	Troy Morrison
THUNDERCATS	57,500	Chris Byrne
TARGET RENEGADE	330,450	C. Byrne (clocked)
UNTOUCHABLES	70,230	Simon Watford
WONDER BOY	402,680	John Nunes

Scores followed by (c) indicate that the game has been completed.

Address your entertainment questions and comments to Phil Campbell, PO Box 23 Maclean NSW 2463, or fax them on 066 452060.

Adventure enquiries go to Adventurers' Realm at the address listed in that section, and general letters go to the main office at 21 Darley Rd Randwick. Got that? Good, then let's get on with it. Oh, one more thing. Try to make your entertainment letters entertaining!

Checking on Chuck

Dear Phil, Do you know if *Chuck Yeager's Flight Simulator* is available on the Amiga?

Chris Turnadge,
Morphett Vale SA

Ed: *I've played good ol' Chuck quite extensively on my IBM compatible, but unfortunately I've had no advice as to whether there's an Amiga version available yet. Talk to Questor on 02 662 7944 for further information.*

Amos enquiry

Dear Phil, Do you know if and when the AMOS compiler is being released, as I will buy AMOS if it is being released, or learn C and machine language if it isn't. Also, do you know when *TV Sports Baseball* is being released?

Kendall Lister,
Beaumaris, Vic

Ed: *Good news. The AMOS compiler is ready for release, and may will be in the shops by early march. Pactronics have already got a demo disk showing what the compiler can do. I'd recommend you buy AMOS and the compiler at this stage if you are a first-time programmer - AMOS is fairly complex, but not nearly as hard as machine language or C, so why not master AMOS first? For release details on TV Sports Baseball phone Craig at Mindscape on 02 8992277.*

Hercules copy?

Dear Phil, In the January edition of ACAR I saw a game called *Yolanda*. I have a game on the C64 called *Hercules*, released by Alpha-Omega in September 1986, and this "new" game looks to be an exact copy bar the souped up graphics and sound!

John Nunes,
Isaacs, ACT

Entertainment Letters

Ed: *Gosh, what a nasty thing to say! Surely you don't think programmers would stoop so low as to copy old ideas like that do you? Well, maybe they would. I haven't seen Hercules on the C64, so I can't really comment. Let us know when you've actually played YOLANDA rather than just read our review.*

Bits and pieces

Dear Phil, I'm writing to congratulate you and the other magazine staff. Previously I have purchased overseas magazines, paying up to \$7.00 with the only games being on the Amiga. I own a C-64 with a disk drive, and recently received an ACAR subscription from a friend. While your magazine has not many C-64 game reviews (although I did like the sound of *KLAX*) at least the Amiga info is useful. I have two friends with Amigas, and I know a little about CLI, Amiga Basic etc.

By the way, this may sound a little corny, I recently bought the Freeze Machine after re-reading its review from one of your very old editions. It's even better than it sounded!!

Lately I have also received a program which contains POKES for C-64 games (mostly old ones) including *Ghosts and Goblins*. Maybe you or the Iceman could print my address in case anyone wants some help. Also, about J. Henry (January ACAR) - I'm sure I saw a review of *Bad Cat* on the C-64 in the English mag *ZZAP 64* - maybe he could get it mail order from the UK. Also, thanks for the free bonus Amiga Annual 1989 I received. It has some interesting Amiga info, including how to beat the byte bandit virus.

Matthew J. Wills
Winston Hills NSW

Ed: *Thanks for the letter, Matibew. We certainly agree that ACAR offers good value for money compared to the overseas mags. We're doing our best to keep up the C-64 coverage, and as you've pointed out, it's always good to learn about the Amiga, even if you haven't got one yet.*

Help wanted

Dear Phil, I'm keen to hear from any-

one who can give me advice on the game *It Came From The Desert*. As a newcomer to the game I'd appreciate any help. I have an Amiga 500.

Adam Diggins,
378 Senate Rd, Pt Pirie 5540 SA

Ed: *We recently ran detailed hints and tips for It Came From The Desert. Find a friend with last year's back issues, or order them from our Randwick office. Otherwise, some kind reader may offer you some friendly advice - write to Adam at the address above if you'd like to help him out.*

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Ever wanted to be re-incarnated as a deadly bat? Or a gryphon? Or perhaps a fly on the wall? Now's your chance, as LUKE TATTERSALL takes you for a test flight in ...

Wings of Death

Wings Of Death. The name doesn't give away too much. When I told the neighbourhood games testers the name of my new game they all thought it sounded like an aeroplane game - perhaps set in the second world war. Well, NO. *Wings of Death* is not a war game, but it is a first class shoot-em-up.

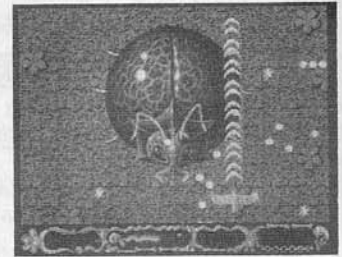
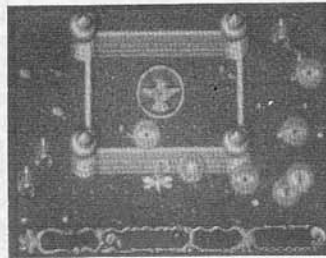
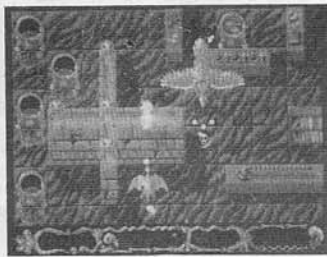
As usual, the object of the game is to blast everything in sight and try to make it to the end of the level. The way the writers of the game describe, is like this: "*Wings of Death* is the utter challenge

capabilities as well as the different weapons - and what about the weapons!!

This has got to be the A+ part of this game - the range of weapons is great (and it won't be very easy to describe them in print). The insect has a weapon called the SPREADFIRE. Not the most effective weapon but a good start. The bat has a thing called the CIRCLEBLAST. This is really neat. It is a bomb that explodes in all different directions. The eagle has a POWERBEAM - nothing out of the bag but very effective. The dragon

sound is good too. You have three options available to you, just music and shooting SFX, music, speech shooting SFX or just the shooting SFX. The music is good and keeps you hyped up as you make your way through the level.

As you can probably tell I like the game a lot. The weapons are just amazing and you really have to see them to know what I mean - but as for me I'm going back to see if I can complete level 2. □



for those among you who can shoot fast and furious or for those who simply love to shoot everything that moves." Or that doesn't move, actually. And that about sums it up.

Here's the plot. You are a magician who has been placed under a curse by a wicked witch and the only way to have the curse removed is to find the witch and force her to reverse it. This will be no easy task. There are seven levels to complete and they become progressively harder - each has a big nasty monster to kill at the end (I have been at it for some time now and have nearly completed two levels - but I am not about to give up. Far from it).

The curse the witch has placed on you has turned you into a bat, but don't worry, you are armed. During the game you're able to change into another flying creature. You could become a flying dragon, a gryphon, an eagle or even an insect. Each creature has different flying

spits out the DRAGONFIRE, but it is the gryphon that has the really amazing weapon called THUNDERBALLS. This one has to be seen to be believed.

Each of the weapons can be changed or improved as you make your way through each level. All you need to do is pick up the weapon bonus (a small shape in the field of play) when it appears. If you pick up the same weapon bonus as the weapon you are presently using then it enhances your weapon and makes it more powerful. If you pick up a different weapon bonus then your weapon changes.

The idea of the different weapons is that different situations call for different fire power. Combine these unusual weapons with what can only be described as great graphics and the whole thing looks really good. It is clear and crisp. I hate looking at games where the characters are not very clearly defined, but this game looks superb. And the

Ratings:	
Graphics	91%
Sound	83%
Playability	85%
Addictiveness	85%
Overall	86%

Distributed by:
Pacronics
(02) 748 4700
RRP: Amiga \$49.95

Another golf game? You bet. And this one scores a hole in one, reports PHIL CAMPBELL ...

PGA TOUR GOLF

Somebody once called golf "the greatest sport man has ever invented." I disagree. Sure, playing golf requires patience, precision and an even temperament. But that's exactly why I don't like it. As was once said, "Golf - a good walk ruined!"



On the fairway, I use the time honoured technique of "hit it and see". From time to time, this produces very satisfying results - once I even finished a par four hole in the regulation four strokes. Usually, though, my golf is both dangerous for innocent by-standers, and bad for my blood pressure.

Now maybe you think these admissions leave me poorly qualified to review *PGA Tour*, the new golf simulation from ECP and Electronic Arts. Quite the contrary. All I need to do is measure the frustration and stress induced by *PGA Tour*, and I'll know immediately how close it comes to the real thing.



Other people, of course, adore computer golf. So far, *Mean 18* has been the most popular version. While other games, like Greg Norman's *Ultimate Golf*, have added sophisticated features - like the effects of ballspin, weather conditions and ground surface on the distance of your shots - *Mean 18* was popu-

lar because it was simple and fun to play. *PGA Tour* is just as much fun, but it features better graphics, improved course views and plenty of other minor attractions. Move over, *Mean 18*.

PGA Tour begins in the pro-shop. Here's where you choose your clubs for the day and set the game options. You can play against any combination of four human or computer opponents, on any of the four *PGA Tour* courses - TPC Sawgrass, Sterling Shores, PGA West Stadium and TPC Avenel in Potomac.

During a "fly-by" preview of the first hole at Avenel, Craig Stadler offers a little advice. "Keep your tee shot left to avoid the right side fairway bunkers. Many pros use a 3 wood off the tee," says the message beside a realistic cameo portrait. The first hole is 352 yards long. My driver has a range of 260 yards, but taking Stadler's advice I switch to a smaller 3 wood. It can only hit 236 yards, but I'm sure the pros know exactly what they're doing.

Playing a shot is a three stage process, almost identical to the time honoured *Mean 18* technique. A power-meter stretches across the lower part of the screen. Tap the space bar once to begin the backswing, again to start the downswing, and once again to control hook and slice. This takes timing. For a straight shot, the final key-tap must be just right.

My first shot looked good. Long and straight - 234 yards. I am well placed for shot number two, which puts me right on the green, and only nine feet from the hole. This is an historic opportunity. It's a Par 4 hole - can I sink it in three and get a budgie? Sadly, no. My putt overshoots the hole by two feet. My

next shot falls short by 18 inches. On stroke five, the stupid ball finally drops into the hole. Not a moment too soon - if I had a club in my hand I'd happily hurl it into the nearest water trap.



This, of course, is a very good sign. It means *PGA Golf* is just like the real thing - golf at its deadly worst. The game is well produced, with realistic animation. The all important backswing and stroke of the on-screen golfer look great, even though his purple trousers and yellow shirt are in questionable taste.

The Amiga version of *PGA Tour Golf* will be on sale this month. It deserves to be quite a hit - right down the fairway with the four wood!

Watch out for it soon. For more details, phone ECP on 075 963 488. The IBM version of *PGA Tour Golf* has a recommended retail price of \$59.95 - the Amiga version should be similar. □

Distributed by:
ECP
(075) 963 488
RRP Amiga \$59.95



Quick Shots

A quick look at what's new in the world of games

EXTERMINATOR

"Djavagood weegend?" "Na - forgot the Aerogard." Older readers will remember those famous words from the ad on the telly. Even if you don't, you know the feeling. Being buzzed by flies and mozzies sure can ruin a good time.

Now's your chance for retribution. Believe it or not, in *Exterminator*, you get to play the part of a pest controller. Okay, so you thought the title sounded like it was going to be another Arnold Schwartz-negger beat-'em-up. Don't be disappointed. This is better.

The action is set in the rooms of a suburban house. Your joystick controls a beautifully animated hand that moves around the screen trying to swat a swarm of pesky insects. It's harder than it

sounds, with nasty wasps and other obstacles often getting in the way. You can swat, you can grab, you can even pound them into the floor - all it needs is a steady hand and darn good timing.

Graphics are nicely done, animation is beaut, and the thrill of the chase should keep you playing for days. □

Ratings:
 Graphics: 79%
 Sound: 76%
 Gameplay: 78%
 Overall: 78%

Distributed by:
 Pacronics
 (02) 748 4700
 RRP Amiga \$59.95
 C64 disk \$29.95



ACAR 70

HOSTAGES

Hostages is a game I've been waiting to play for years. I first saw a pre-production version demonstrated on an Atari ST by a representative of French software house Infogrammes. I never did manage to catch up with the Amiga version first time round, but now it's been re-released on the budget "Action Sixteen" label by Mindscape.

In *Hostages*, you're in charge of an elite squad of Tactical Response Group police. Your task is to rescue a group of hostages held in an embassy by a dangerous group of terrorists. Your first task is to get into the building, avoiding snipers as you dash from building to building and alley way to alley way. Spotlights sweep back and forth, making every move hazardous in the extreme - one step out of place and you're drilled full of holes.

When your team makes it to the roof of the embassy, it's time for some strategic thinking. You'll need to lower your men down on ropes, smash your way into the building and set the hostages free one by one. You'll be involved in some close range combat, and you need a quick trigger finger and a steady hand.

Hostages is full of atmosphere, with good graphics and sound effects - nice game, especially at the new budget price. □

Ratings:
 Graphics 88%
 Sound 82%
 Gameplay 81%
 Overall 83%

Distributed by:
 Mindscape
 (02) 899 2277
 RRP Amiga \$29.95
 A Budget Title



ATF II

ATF II is an action strategy game based upon the Advanced Tactical Fighter, a new generation of high technology aircraft being designed for the 21st century.

Your objective in the game is simple enough - fly your ATF aircraft through a series of dangerous attack missions, supporting your allied ground and sea forces with their ultimate goal of defeating the advanced enemy. But the challenge is formidable - to reach your target despite enemy interceptors and ground defences - and then get home in one piece.

ATF II has a unique blend of fast 3D arcade action and mind bending strategy. There are eight world maps with full relief terrain, continents, islands and rivers. You have a team of eight crew members ready to fly your ship - just choose the one you want.

Before you can actually fly the ATF you have to be briefed on the targets you

have to destroy and also which weapons you are going to use. This is fairly easy and doesn't take long. Other easy-to-use features of the game are an Auto-Landing mode and a Terrain Following command which reduces the risk of air-to-air attacks and surface-to-air attacks.

The enemy planes are well animated and the sound effects make you feel like you're really flying the plane. The graphics are slick, the music is hot and the action will get your adrenaline pumping. *ATF II* is an outstanding game. □

Ratings:
 Graphics: 80%
 Sound: 81%
 Gameplay: 84%
 Overall: 90%

Distributed by:
 Mindscape
 (02) 899 2277
 RRP Amiga \$69.95



Cricket Amiga

Sick of cricket yet? Or are you so badly addicted that you just can't take your eyes off the screen? Well, now's your chance to actually play in your very own test match. It's *Cricket Amiga*, produced and published by Australia's very own Pactronics. Written in the powerful AMOS game programming language, the game is certainly impressive.

The player line-up is certainly up to date, with all the big names like Taylor, Jones, Marsh, Healy, Border and Boon to re-arrange in teams to your heart's content. You can place your fielders in exactly the positions you want, and change them whenever you like. Batting is the key to the game - you'll need good timing and an eye for the ball.

The action is animated,

though the players are small, sound effects and music are top class, and the game is totally produced and designed in Australia, and it's just as exciting to play as real cricket. Hmm - maybe I should rephrase that!

Cricket Amiga is well worth a look, and it's a good chance to support our Aussie programmers! □

Ratings:
 Graphics 77%
 Sound 79%
 Gameplay 72%
 Patriotism 88%
 Overall 79%

Distributed by:
 Pactronics
 (02) 748 4700
 RRP Amiga \$49.95



Explosive action is the order of the day as DINNY CHRISTOPHER and RAYMOND SCOTT road test ...



The car racing world of *Nitro* is not a pretty one. There's no sense of fair play. Greed is not just good, it's great. You're even encouraged to score points by skidding little ol' lady pedestrians! How gross can you get?

And while racing has never been a gentleman's sport, the people who inhabit *Nitro* have added a new dimension to rear-end shunts, sideswipes and ramming. They do it deliberately, violently and without fear or favour. They enjoy nudging you into walls, bridges, barricades and the like. And while you go into a harum-scarum 360-degree skid, they're laughing all the way to the finishing line.



Nitro is a fast, no-holds barred, arcade-style game that sucks you in by clever track and scenery variations and by giving you - the driver - enough options to make you feel you're in total control of the game. And the best part is that three people can play at once, assuming you have two joysticks and the space around the computer screen and desk. The third player uses the keyboard. Great graphics and sound introduce you to *Nitro*.

Then you take over - select a car from Formula 1, turbo buggy or a sports car. There are advantages and disadvan-



tages with each choice. F1 guzzles your limited quota of fuel and performs poorly on off-road tracks. The buggy is obviously faster in the desert and cross-country and the sports car is economical all round.

Four cars automatically line up at the start. If you're the only player, the other three are computer controlled. You view the game from the air. And now you're off. In front of you, the zig-zag track is littered with witches hats, big oil slicks and barricades. Hit them and they slow you down, change your direction and send you spinning. Your opponents are aiming to force you into these obstacles.

Also crossing your path are pedestrians, barrels of fuel, points, nitro booster liquid and even money! They're all there for you to collect. Barrels of fuel keep you racing longer, nitro booster gives you incredible speed for about three seconds and money lets you buy accessories to enhance speed, repair your car, score new tyres, a turbo charger and even a new engine.

There are 32 tracks to negotiate starting in the city and progressing through cross-country, desert and the final and awesome-sounding Apocalypse, when the end of the world is just around the



corner and the city is decaying. Huge potholes crater streets and airforce jets sit abandoned and covered in graffiti. Your aim is to race through all 32 tracks. And the key to victory is keeping up your fuel supplies. We got through as many as 24 tracks before running out of gas and having to restart at track one.

Nitro's graphics are solid, giving a realistic and pleasing-to-the-eye aerial perspective. Accompanying music is superb, but can be turned off if it becomes annoying. There are mixed feelings about how good the controls are - ranging from terrific to average - it's all a matter of personal touch. The biggest complaint is the delay between each race. The computer reloads and you are subjected to a static picture and music for what seems like an unnecessarily long time.

Aside from that beef it got the nod as a game to keep coming back to. In fact all other games were given the shunt for some time while four players of varying age succumbed to its appeal. □

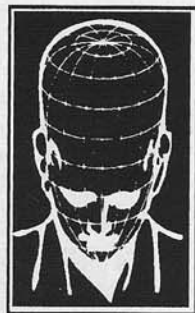
Ratings:

Graphics	90%
Sound	90%
Playability	90%
Addictiveness	98%
Overall	89%

Distributed by:

Mindscape
(02) 899 2277
RRP Amiga :\$59.95

Christmas has come and gone, you've run out of money, and that new Amiga is sitting idle on the desk. What can you do? Here's help, as PHIL CAMPBELL introduces ...



MIND GAMES

Now is the time to buy if you're looking for bargain software. Over Christmas, the shops were flooded with compilation packs - bundles of games packed in a single box at a cut-throat price. And there are still some left.

Naturally, they're not what you'd call "hot new releases". They're usually games that have already earned their stripes - popular titles that are getting a little long in the tooth. But that's okay. In fact, if you're patient but poor, it's often worth waiting to pick up some of those titles you've always wanted.

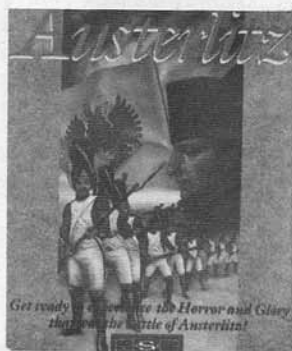
One impressive compilation pack is marketed under the title *Mind Games*. This collection is aimed at players who like to exercise their mental muscles - three computerised "war games" where strategy is everything.

The first two games in the collection let you follow the career of Napoleon in the battles of Austerlitz and Waterloo. The third game is set in the near future, giving a chilling glimpse of some possible scenarios for World War III. All three games demand an agile mind with a cool tactical streak.

Waterloo and *Austerlitz* are both a cut above the average computerised war-game. Usually, the battle-field is displayed as no more than a stylised grid. Both these games, though, display a detailed perspective view of the battlefield. Roads snake off into the distant hills, rivers meander through a checkerboard of lush green fields. If you look carefully, you can see the enemy forces in the distance, and tiny puffs of artillery smoke blossom on the horizon. In short, the display system is a tribute to the programming skill of Peter Turcan.

Your own troops are camped in the foreground waiting for your orders. Here's where the fun starts - and the heavy thinking. In *Austerlitz*, you can play the part of either Napoleon or Czar Alexander I, commander of the Austro-Russian forces. In *Waterloo*, you can be Napoleon or Wellington. Like those commanders, you will instantly realise that commanding a nineteenth century army is far from easy.

Your commands are issued through a remarkable parser,



which interprets complex sentences like "Reille, at 1 15 pm Order Donzelot to Defend the hills 1 mile south of you." Each command is relayed at a genuine nineteenth century pace - once the order is written it is relayed by a dispatch rider to your corps commanders. They then order their divisional generals to move their troops - if they can. Eventually, you'll see the results taking effect on the screen.

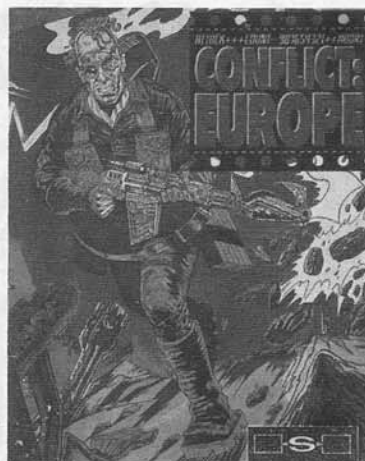
Conflict Europe, the third game in the compilation, demonstrates the advantages of space age technology. These days, orders are relayed around the planet in an instant, and the battle for Europe can be won or lost from the comfort of a high-tech control room.

From the haunting title sequence and dramatic musical background to the darkened control room, this is a war game with atmosphere. The room is dominated by a huge strategic map of Europe, showing the position and strength of all allied and enemy units. It's up to you to relocate them for maximum strategic advantage, to deploy them against enemy units and to replenish their supplies. If things look bad, you've even got clearance to launch a limited nuclear strike.

War games are not my forte, but I found *Conflict Europe* was both gripping and easy to play. *Austerlitz* and *Waterloo* are much more complex, though seasoned wargamers will be as happy as pigs in mud.

The recommended retail price of \$69.95 is good value - in fact, you're getting three top notch games for the price of one. □

Distributed by:
Pactronics
(02) 748 4700
RRP Amiga \$69.95



Daily Double Horse Racing

Feel like some horsing around? Then place your bets as STEVE PIKE takes you racing.

If the TAB hours don't suit or you don't like losing your hard earned cash, this game is for you. You are at the track, experiencing the thrills of racing but you can't go broke, not for real anyway. Unfortunately you can't cash in your winnings either.

Your *Daily Double Horse Racing* betting day starts with a look at the state of the track, which you can set. Once set it stays that way for the duration of the meeting. You then have to enter the copyright code to start the game proper. This is done by asking you to select the jockey of a certain horse in a past race. Included in the instructions is a form guide giving a racing history of over 40 horses. Not only does this serve as a game code, but it is used to determine which neddly you will put your money on. It is detailed and gives the jockey's name, position at stages through race, lengths off lead horse and state of the track.

Before the first race the screen fills up with horses and their respective jockeys showing the odds for that race. You then select the horse you want to bet on by using the form guide. Now to lay down the money.

You are facing a man at the betting window. On your right are some American currency notes. You click on the notes you wish to bet and they are passed to the teller. You don't have to just bet on a horse to win. Although the game

is based on America's gambling system, good fun can be had by trying some EXOTIC bets. You have the opportunity to bet for 1st, 2nd or 3rd, Quinellas and Exactas, and Triples (which we call Trifectas). Obviously the harder the bet you place, the more you are rewarded for your efforts if you win. However, they can also be a quick way to lose your shirt. You may place as many bets as you like, until you run out of money.

Now it is RACE TIME. The screen changes and the top half is the track as you see it. At the bottom are the names of the horses in 1st, 2nd and 3rd. The interesting thing about the track is that all you see is about 3/4 of a furlong (150m) of the track. The way it works is that the track rotates under the horses and the furlong markers glide by in the foreground.

At the end of the race, the winner is declared by speech although only the barrier number is announced. The bot-

tom of the screen is filled with the dividends of the place getters, which incidently are for a \$2 bet. The next screen is a summary of the bets placed by the players. It shows how much you placed, on what horse and the amount you received for your efforts. In my case this was not very much.

Without sounding too critical the use of speech in the game is too sparse. They give you a taste of what they can do but they fall short in that I believe there should have been more speech used. But then who am I to judge, I can't even make my bird talk. In all fairness however, the speech that they do use is clean, crisp and sounds good.

The graphics are very good without being fantastic, but in this sort of game one tends not to notice whether graphics are great, when one is yelling and cheering at a computer screen. However, you do get the opportunity to follow the colour of your horse if you are quick enough to notice it at the odds screen.

This game may not appeal to all computer freaks, but to those who are into the glamour scene of horse racing, this is a simulation that simulates to the max. □

Ratings:	
Graphics	78%
Sound	75%
Playability	83%
Instructions	85%
Addictiveness	72%
Overall	78%

Distributed by:
Pactronics
(02) 748 4700
RRP Amiga \$49.95



DAVID SANNA walks like an Egyptian as he tests a game you'll really get "wrapped up" in ...

The Curse of RAA

Bad news! You've just annoyed the most respected and worshipped of all of the Egyptian gods - Ra. You unsuspectingly made him mad by not making enough sacrifices, and now he has turned you into a tiny, insignificant bug. A scarabaeus.

To make matters worse, he has also condemned you to a pyramid for the rest of your insect life! Things seem bad eh? Well, the great god has given you one last chance to return to your former human self. But I warn you that this task will not be easy. As a scarabaeus you must attempt to solve the many almost insurmountable riddles of your enslaving pyramid.

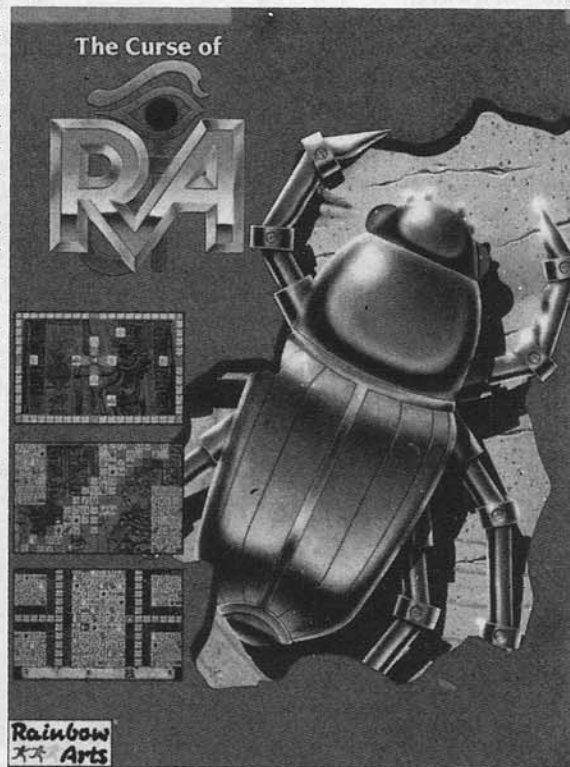
After pressing the fire button at the title screen you will have four main menus to choose from. LOGIC MODE, ARCADE MODE, USER MODE and DEMO MODE. The logic mode is the main game, consisting of 100 levels in which you have to solve all of them to transform back into a human being.

You and you, bug body must go through all of the mazes and remove all of the stones with the same hieroglyphic symbol before leaving the level. For you to eliminate the stones you must stand on one stone and place the cross you carry on the other and move away before they fall down. Easy, you may think, well you just try doing this when the time comes for you to transform into a beetle!!! Sometimes you find that you have eliminated all of the stones around you and you are left on a stone which will not move - then you're in trouble.

The arcade mode has basically the same principle except for three main differences - the first of which is that the computer picks the levels for you to play. The second is that there is a time limit for you to complete the level and thirdly there are lives. The loss of lives is your main adversary in you, quest for human life once again.

The user mode lets you design your own levels and play them once you have

finished. In this option you have access to all of the stones designed in the game of which there are 31. Some of them have moving or disappearing qualities which you should have fun with.



the thinking mode which is needed most for this type of software.

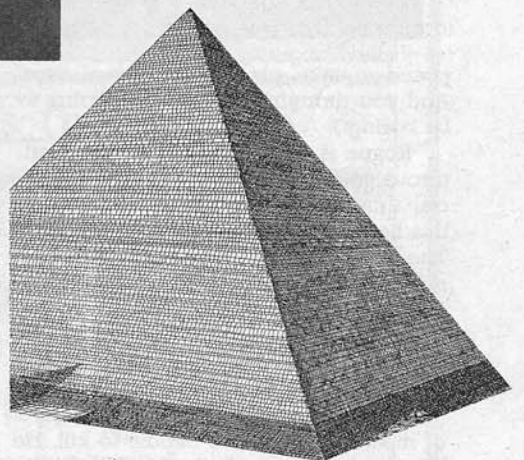
I was very impressed with *The Curse Of Ra*, and couldn't get away from it until I had completed the famous "just one more level". I thought that the demo mode was most helpful and it explained what the manual had missed.

Overall, the game is a great test of both skill and mind - recommended especially for thinkers. □

Distributed by:
Mindscape
RRP Amiga \$59.95
C64 \$39.95

Graphics are very good. The stones are well done and can be seen clearly. The scarabaeus is well drawn and its animation around the screen is smooth and clear. The background graphics of the assorted levels are neatly done and are very realistic compared to ancient Egyptian drawings. There are different drawings for every ten levels in the game so the variety is good.

The opening music piece of this great game really gets you into an Egyptian mood. As you start playing, a different tune is played which gets you into



Regular comic book readers will already be familiar with ROGUE TROOPER. Now he's made it onto microchips, as SCOTT CAMPBELL checks out ...

ROGUE TROOPER

How would you like, when you die, your brain to be "scanned" into your beloved Amiga, to live again in electronic form, until a new, super-human genetically-engineered body could be found for you? Pretty far out, eh? If you think this is just science fiction, well, er, you're right.

This futuristic procedure is also part of the premise of *Rogue Trooper*. The Amiga itself is not the "host" here; tiny micro-chips play this role, which the hero Rogue keeps with him while roaming around the planet NuEarth, fighting the bad guys, play this role. These contain the "minds" of three of his buddies who were "killed" in combat, and while in their temporary home, they help Rogue in various ways. (All this is sup-

posed to take place in 10 years' time. And you thought the 90's were going to be boring!).

posed to take place in 10 years' time. And you thought the 90's were going to be boring!).

Rogue is determined to find the traitorous general who led him and his special unit into a deadly ambush. To do this he needs to complete four missions. The first involves him walking along corridors, going up lifts, and flicking switches on the walls, which help him get past obstacles like electric floors. There are also some feeble robots around, who can be killed with a couple of kicks.

Towards the end of the first sublevel of mission 1 there is a baddie to kill. He has a gun and you don't! But not to wor-

ry, you're genetically engineered to take more punishment than Sir Les Patter-son's liver.

On the next level there are gun caches around, but you have to find the right switch to open them up. On this level there are lots of guards, and you don't have much ammo. In the corner of your info screen, there is a little picture of your face, that indicates your health. If you're not careful, this will end up looking like something out of a splatter film, indicating that you are about to meet your maker (who may well, in your case, be a crazy scientist in a laboratory).

The style of this part of the game is similar to *Baal*, but without the variety that made *Baal* playable. For a game

that promised plenty of macho violence in the manual (with lines like "Generally kick butt, they deserve it"), this is all a bit of a yawn. Especially since I can't get past this bit. I've killed everybody, and flicked everything that looks like a switch, but I can't get out. Trapped!

The later levels sound better. The second involves flying over enemy territory, and you get to buy things. The third requires you to get through to base while being bombarded with hallucinatory gas (sounds like they were sniffing this when they wrote the game).

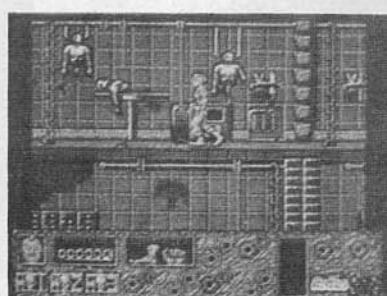
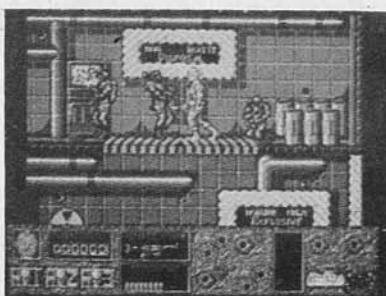
At this level it's "kill everything that moves, and everything that doesn't".

The fourth, however, involves puzzles, and exposing the traitor general.

The game packaging is a bit misleading. It's designed to appeal to the computer-wimps who harbour macho fantasies. It contains a comic all about the adventures of Rogue, and my word is this lad a tough, bitter, uncompromising macho-man. He makes Rambo look like a poetry-spouting hippy peacenik. He's hard done by (and utterly humourless), but he fights back in exactly the way that the frustrated wimps who read such comics can't do in real life.

But the game itself isn't really like this at all. The first level is pretty tame really; it lacks the realism that could make it appeal to fans of nasty violence, and could only offend the most fanatical puritan. (Realism seems to make games either nasty or boring). And the game doesn't have the obvious wish-fulfillment element that the comic has, and which can only make you chuckle.

The graphics aren't bad, but they lack a bit of style. Rogue does at least manage to swagger convincingly with his gun. Many of the lesser-quality games of this sort have a clumsy feel to the action, and while this one is an improvement, it's still a tad slow and awkward.



All in all, an okay game that isn't quite as action-packed as it tries to make itself out to be. □

Ratings:
Graphics: 75%
Sound/Music: 65%
Gameplay: 72%
Overall: 70%

Distributed by:
Pacronics
(02) 748 4700
RRP Amiga \$59.95

Adventurers Realm

by Michael Spiteri

Welcome once again to the Realm, the only column in Australia dedicated to helping adventurers on all of Commodore's great machines. If you are stuck in any adventure game, first check to see if there is a specific hint sheet listed to suit you (free!). If not, then send your problem to the following address.

If I cannot help you, I'm sure someone else can. And make sure you watch out for our soon to be released official Realm hint book. The address to write to for adventure games is:

Adventurers Realm P.O. Box 351, Pakenham, Vic 3810

Role playing game problems are dealt with by Kamikaze Andy in his dungeon, so if you are stuck in the likes of Dungeons & Dragons type games, write to:

The Dungeon P.O. Box 315, Maddington, WA 6109

Always enclose a stamped addressed envelope if you expect some form of reply from us!!

C l e v e r C o n t a c t s

More clever contacts to send your problems too. Always enclose a stamped addressed envelope! Many thanks to these and other clever contacts for your great work!

Name: David Marjanovic

Address: P.O.Box 342,
Revesby, NSW 2212

Help offered: Space Quest I, II, Larry I, II, Shadowgate, DejaVu, Zak, Arazok's Tomb, Pawn, Deja Vu II, Guild of Thieves, Manhunter: New York, and Leather Goddesses.

Name: Steven Fochi

Address: 40 Dover St,
Albanval, Vic 3021.

Help offered: Moebius (+ maps) & Leather Goddesses.

Name: Darren (!)

Address: 20 Crufts Way,
Canning Vale, WA 6155.

Help Offered: Operation Stealth, Pool of Radiance, Champions of Krynn, Dungeon Master, Bloodwych, Bards Tale 1,2, Millennium, Phantasie 1,3, Faery Tale, Knight Orc, Jinxter, Shadow Gate, Kings Quest 1,3, Larry 1,2.

Name: David McKinney

Address: 126 Norton St,
Leichhardt, NSW 2090

Help Offered: Hobbit, ZZZZ, Dracula, Bards Series, Pool of Radiance, Ultima 3-4, Hitchhikers, Dungeon Master, Champions of Krynn, Curse of Azure Bonds, Corporation, Kings Quest I.

Free Hint Sheets

The following hint sheets are free! Ask for up to four different hint sheets, and make sure you have a stamped addressed envelope (Andy does not have hint sheets!!!).

The address is: **Free Hint Sheets, P.O. Box 351, Pakenham, Vic 3810**

Guild of Thieves, Jinxter, Pawn, Fish, Maniac Mansion, Uninvited, Bards Tale I, II, III, Zork I, II, III, Hitchhikers Guide, Faery Tale, Castle of Terror, The Pawn, Borrowed Time, Never Ending Story, Deja Vu, ZZZZZZ, Hobbit and Dracula.

The Dungeon by Kamikaze Andy

Andy casts his eye over the latest RPG from Pacronics, and he likes what he sees ...

Dragonflight

After three years in the making, the much hyped and long awaited German role-player *Dragonflight* has at last been released. When it was first demo'ed a few years back, it captured the attention of adventure fans worldwide. Of course, back then we didn't have as many quality roleplaying games or adventures for the Amiga as we do today.

How good is *Dragonflight*, then, when compared to some of the benchmarks of today such as *Dungeon Master* or *Captive*?

After a great opening sequence, I see that the graphics are as good as promised. The game uses an *Ultima* like

overhead view when you move your party across the land, but with much more colour and detail. These Europeans certainly know how to squeeze the best graphics out of the Amiga!

Once you are inside a city or town, the graphics change again. This time the overhead view is retained, but with some 3D features (much like *Magic Candle*). When exploring dungeons, designers Thalion have used the standard 3D maze perspective but with great detail. There are also several full screen special graphics/animation sequences that occur after you have completed parts of the game. For example, when you free the Unicorn, a picture of the galloping creature is shown moving against a colourful horizontally-scrolling parallax backdrop. Such special sequences can even be stored on disk, in order to replay them for posterity.

What about the plot? Well, you control a party of four (a

pre-chosen party, so you can't develop your own characters) in a quest to restore magic. Apparently after the last catastrophic war between good and evil, the people of the realm decided to shun magic since they believed that it was the cause of all destruction. As time passed, and the power of magic waned, it soon became clear that magic had to be restored. It is up to you, then, to guide your party into forgotten towns, and deep dark dungeons, to search for any lost magic scrolls.

The decline of magic is somehow connected with the departure of the dragons from the realm. As the dragons were the greatest magic users of all, it is also your quest to discover what happened to these mighty beasts, and whether any dragons still exist. A great task indeed!

As usual, combat is one of the main aspects of this game, and your party can only advance in experience points (and gain treasure) by successfully sending the enemy into the grave. The designers have come up with a slightly unusual combat sequence, depicting fights in a horizontal manner (much like arcade games). You use your mouse to click on the direction you want your party member to face or move, then click on the attack button. After you have doled out commands for all four members, the computer takes over and you can see the battle just like an arcade game! I'm not sure about

the overall value of this feature. Innovative it might be, but quite frustrating (and boring) after a while.

Dragonflight is a technically excellent game (much like *Legend Of Faerghail*) with some lovely graphics and music. The completely mouse/icon interface will attract some and repulse others, but you soon get use to it after a while.

What makes *Dragonflight* a better game than *Faerghail* is its depth and strong storyline (evidenced by an excellent manual). A good challenge for experienced role-players.



Ratings:
Graphics: 88%
Sound/Music: 85%
Playability: 85%
Value: 82%
Overall: 85%

Distributed by:
Pacronics
(02) 748 4700
RRP \$ 79.95

Help, Help and More Help

Many thanks to all who wrote in with help for troubled adventurers. Your hints will never go astray.

Game: Future Wars

For: Peter Rickard
From: Noel McAskill

Help: To use photocopier, operate green button, use paper on opening, operate red button, then quickly take and examine documents when they emerge and move to lighted circle on floor.

Game: Holy Grail

For: J.H.Roelofs
From: Donna McDougall

Help: Drop the holy grail in the Throne Room.

Game: Swiss Family Robinson

For: Lisa Granstoun
From: Donna McDougall

Help: All you need to find are the waxberries (candle problem), which do not jump up and bite you, so to speak. The white berries are the waxberries. Put the waxberries and string in the cauldron, light the driftwood, and place the cauldron in the fire.

Game: Legend of the Sword

For: Sue Ducksbury
From: K. Kupresak

Help: Ignore the giant worm. You can only kill it with spears, but it then blocks the tunnel. The iron gates can be opened by using the small key which is found in the troll room in the tree. The proof of the quest involves obtaining the wooden disk which can be gained after you escape from the troll cell. Get drunk on the mead found in the troll's storeroom and you'll get thrown in the cell. You need the gold coin to gain entry into the swamp. The coin can be found in the NW tunnel of the passage under the cottage. The treasure is a trap.

Game: Indiana Jones

For: B.Toyne
From: K. Kupresak

Help: Push the statues (in Venice) until they look like the pictures in the diary. Enter the door and go to the bridge.

Cross it and enter the cave. Then go to the cave with the skull piano. Read the diary where reference is made to the skull.

Game: Moebius

For: Mark Healy
From: Steven Fochi

Help: The easiest way to get to shrine 1 is to go up the palace steps to the doors. Go through the northeast door and go north then west and you should find a well. Enter the well... The other shrine is west of the sw corner of the palace. To get there, water walk west across the water to the land and keep going west until you reach the water then follow the shore north. Before entering the shrine, get a soil sample.

Game: Space Quest II

From: David Marjanovic

Help: To light your way through the cave, hold the gem. To get the gem you must dive down into the underwater cavern in the swamp. Once through follow the alien who will lead you to their leader.

Game: Deja Vu II

From: David Marjanovic

Help: To get into the morgue, you must wear the police uniform. Get this at Sugar's apartment. Change in the taxi. The safety deposit key will open your letter box. The Mercedes key is useless, and the key in the telephone opens the slot machine in Joe's bar.

Game: Ring of Power

For: Sylvia Symonds
From: Mark Bilney
Help: Look in the cupboard on the first floor for the credit card.

Game: Dungeon Master

For: Grant, Angelique & Bodie
From: David McKinney
Help: To kill Chaos you need a completed fire staff. The idea is to catch him in a flux cage and then fuse him with the staff. Be warned, it takes a very long time to kill him.

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FRAME GRABBER™ Real Time Video Image Digitizer

For desktop publishing, video production, computer art or any multimedia application, nothing's faster than FrameGrabber! Digitize live colour or B&W video images from a Video Camera, VCR, or other video sources in *as little as 1/60th of a second...* with a single keypress. Use FrameGrabber's live software video switch to preview the shot on your Amiga monitor - before digitizing¹! FrameGrabber captures live images in 2 to 4,096 colours, in screen resolutions ranging from 320x200 to 640x400, including overscan². FrameGrabber's external control knobs give you full hardware control of Intensity, Hue, and Saturation, to adjust for all types of lighting and video conditions. FrameGrabber uses its own built-in RAM to digitize, leaving the RAM in your Amiga free to run other applications.

Powerful image control software (included) offers the following unique features:

- "Time Lapse" digitizing with user-selectable intervals and parameters
- Captures images for desktop publishing applications with quick "Black & White" mode
- Display thousands of apparent colours in 640x400 resolution with optional dithering
- Store portions of images as IFF brushes with "Save Frame" feature
- Sharp, crystal-clear digitizing of static images with multiple exposure mode
- Instantly create complex VSKIP IFF animations - automatically or manually.

This compact, external unit comes with power supply, software, manual, and 3 foot cable for easy placement and connection to your Amiga monitor¹. Available in NTSC and PAL versions. Optional advanced "Version 2.0" image control software also available - ask your local dealer or call the number below for more information.

FrameGrabber. The #1 realtime video digitizing choice of Amiga users since 1988.



Another fine video product from: Progressive Peripherals & Software

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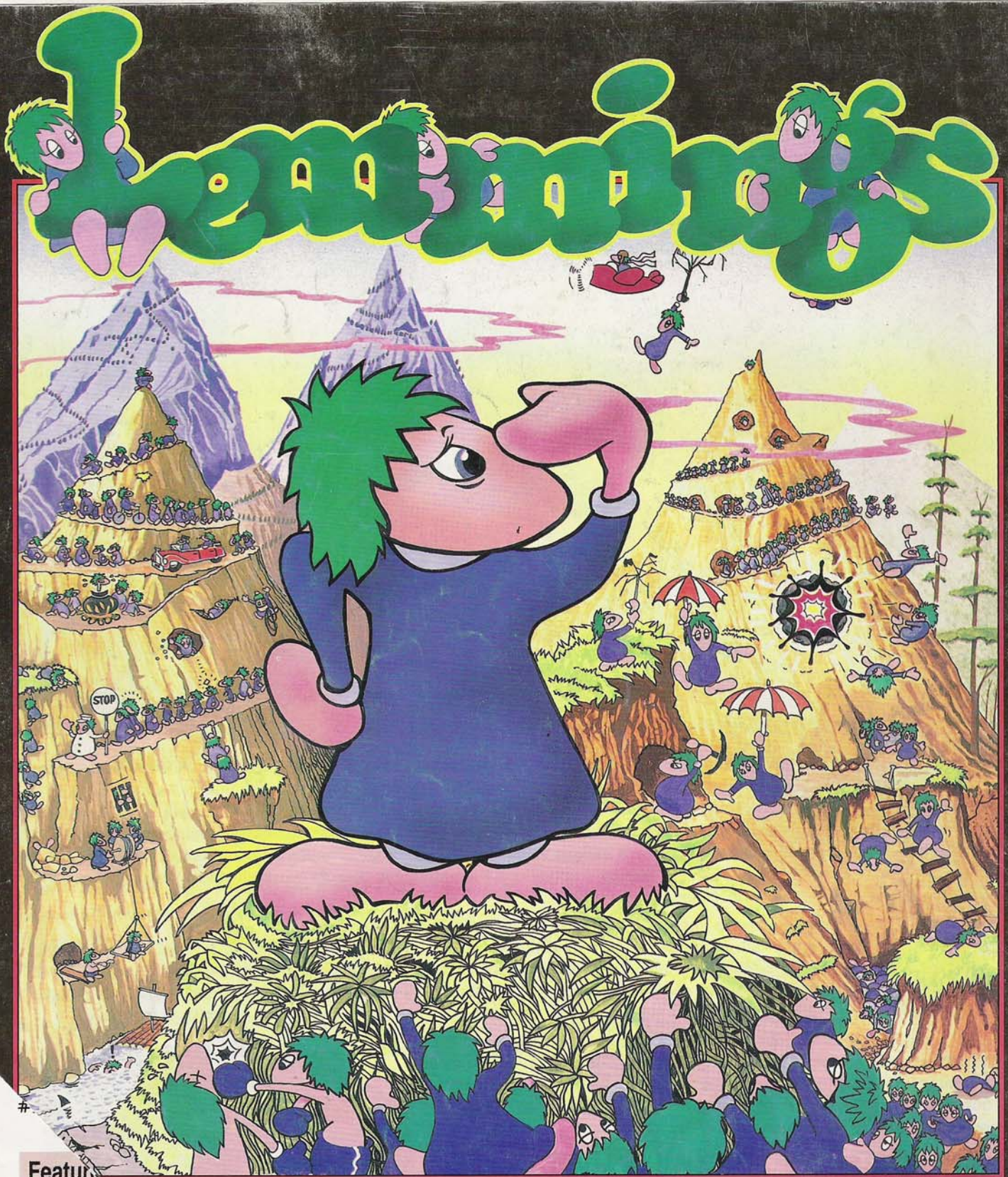
P.O. Box C64, Mt. Kuring-Gai, N.S.W. 2080
Ph: (02) 457 8388 Fax: (02) 457 8739

plus more

Recommended Retail Price Only

¹With standard Amiga 1080, 1084, 1084D and 1084S monitors. Other monitors may require special cabling.

²Res.



Features

- PostScript Font
- Compugraphic Font
- Professional Draw Import
- Outline Fonts on Screen
- Draw Bézier Curves

Price

Soft-Logik Publishing

Save the Lemmings- and



SYNOPSIS



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AMIGA, ATARI ST AND
 PC COMPATIBLES