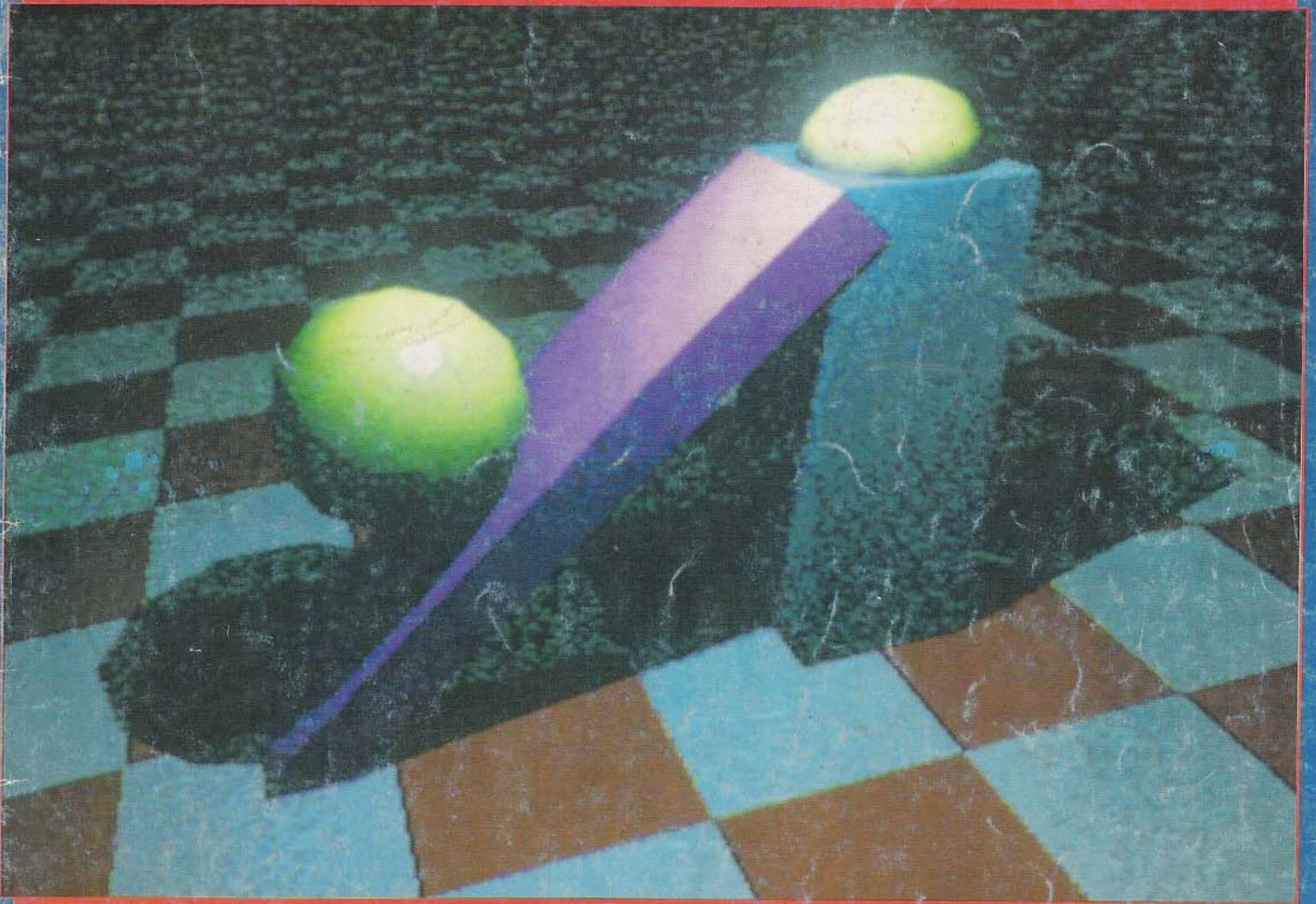


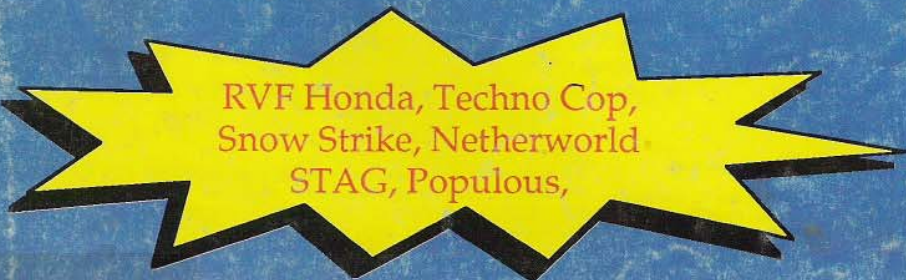
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The Australian COMMODORE and AMIGA REVIEW



Sculpt Animate 4D

- Video Studio
- Education Software
- Masterpiece Fonts
- Assembly Language



RVF Honda, Techno Cop,
Snow Strike, Netherworld
STAG, Populous,

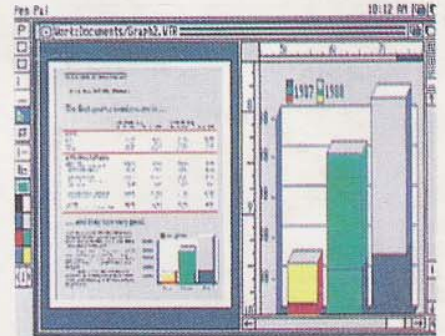
- JiffyDOS
- Digitalker
- Turbo Rom
- Macros

A picture is worth a thousand words.

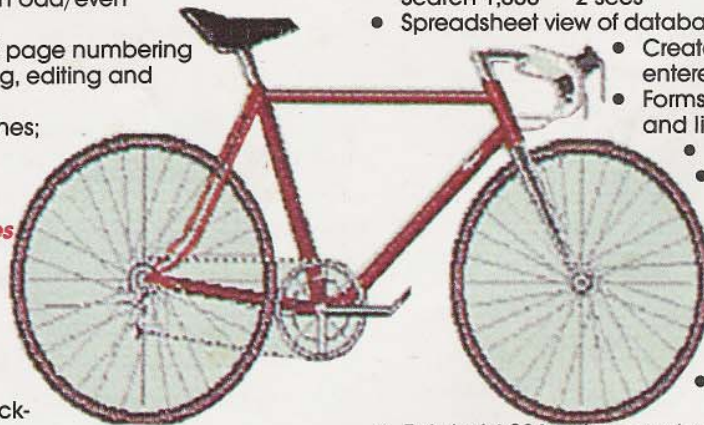
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The Australian COMMODORE and Amiga Review

VOL. 6 NO. 11

November 1989

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CONTENTS

Editorial	Macintosh emulation - why?	2
News		
C-64ers	New Commodore 1230 printer, music software	4
Notepad	Tiny Tiger II, Mac-2-Dos, Pen Pal, GVP Accelerator, mouse problems	6
Letters	Bridgeboard queries, bar charts, GEOS extra RAM	8
Features		
Sculpt Animate 4D	Powerful graphics and animation package	10
JiffyDOS	Disk drive enhancement system for Commodore C-64 and C-128	18
Reviews		
Digitaltalker	Speech programming utility for the 128	13
Book Review	Amiga C for Advanced Programmers	24
VideoStudio	A package of the most often used video production facilities	28
Cockroach Turbo Rom	Replacement ROM now in cartridge form	32
Masterpiece Fonts	Fonts and clip art for desktop publishing	34
Pilot's Logbook	Record flying hours etc	38
Education Software	Programs for young students	40
Local Software	Australian programs	44
Programming		
Macros	Predefined keystrokes	46
Assembly Language	Tutorial	50
Entertainment		
That's Entertainment	News, Letters to the Editor, Hints and Tips, High Scores	56
Game Reviews	RVF Honda, Techno Cop, Snow Strike, Netherworld, STAG, Populous, Buffalo Bill's Rodeo Games, Savage, Raider	59
Adventurer's Realm	Times of Lore review, new releases, problems, hints and tips	69
Advertisers Index		72



Australian Commodore Review
21 Darley Road, Randwick, NSW 2031
Phone: (02) 398 5111
Published by: Saturday Magazine Pty Ltd.
Editor: Andrew Farrell
Entertainment Section Editor: Phil Campbell
Advertising: Ken Longshaw
(02) 398 5111 or (02) 817 2509

Production: Brenda Powell
Layout: Tristan Mason
Subscriptions & back issues:
Tristan Mason (02) 398 5111
Distribution: NETWORK Distribution
Printed by: Ian Liddell Pty Ltd

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Bringing the world of Amiga to you fast!

Editorial

Recent user group meetings of Amiga users have seen numerous demonstrations of the amazing ability to emulate the Apple Macintosh. Indeed, this is an exciting development which is a wonderful feather in the cap for the Amiga community. However, there is a downside.



I talked to a number of users who were mad keen on getting into desktop publishing now they had seen the Mac-Emulator working. The Mac-Emulator is quite capable of running programs such as ReadySetGo, a fine page layout program for the Apple Macintosh. However, output is limited. Appletalk is not yet supported. You must output to a file and then use a special utility to print via the Amiga serial or parallel port. A little awkward, but workable.

The sad part is, many of those who are rushing into the Mac-Emulator arena are forgetting that in many respects the Amiga is a potentially better machine. Some I talked to about desktop publishing had not tested Professional Page from Gold Disk. I was aghast.

To help put you in the picture, there is a spreadsheet for Mac users called Excel. I am told by an ex-Mac user that Maxiplan on the Amiga is considerably faster. Indeed, Excel on the Amiga is faster. But, Gold Disk have just released a new program, a spreadsheet, in the United States, called The Advantage which is at least four times faster than Maxiplan.

Now which program would you rather be using? So, if you plan on getting into Mac-Emulation - fine - but do yourself the favour of at least checking to see what software the Amiga has to offer which is probably just as good!

It appears this whole Mac-Emulation business could turn into quite a problem for Apple. A company has released a disk drive which connects directly to the Amiga, and enables both Amiga and Macintosh disks to be used, providing you have the right software. No interface required.

Further to that, a rumour exists that hackers have already removed the need for Mac ROMS by placing the ROM code on disk with the Mac-Emulator. In essence this means a Mac could be had, illegally, for the cost of an Amiga and the new Amig-a-Tosh drive and Mac-Emulator without expensive ROMS. It would be no surprise to see Apple make legal moves to stop this situation exploding, however the difficulty would be that the people making the hacked disk available are almost invisible. □

Andrew Farrell

The Commodore compatible Floppy Disk Drive That won't Drive you up The WALL!

Now the choice is clear — you can either buy the best Commodore compatible disk drive on the market made professionally by 'Hyundai' one of the world's leading computer, electronic, and car manufacturers. Or you can buy a cheap Taiwanese made drive; or you can buy the latest version of the Commodore disk drive which does not have many of the features listed below and only carries a 3 months warranty. **NOW MAKE YOUR CHOICE!!!**

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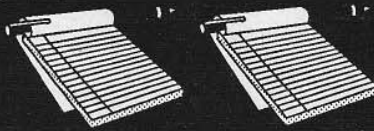


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C64ers



New Commodore 1230 printer

● Usually model numbers go up, but this time it's down for the new model number of Commodore's replacement for the MPS-1250 (a rebadged Citizen). We do not know yet if this move was due to the bad reviews we gave the 1250 - in fact we do not yet know much about the printer except that it is also a rebadge job. Hopefully, a full review next month.

Music software

● Further to our recent series on music software for the Amiga (see August 89 issue) we've learned from Computermate Products that they now have a whole range of Dr T's music software for the C-64. As in the Amiga range, *Dr T's Keyboard Controlled Sequencer* is the mainstay of the C-64 series and there's also a specific C-128 version.

Incidentally, Computermate (02)-457-8118 has quite a number of programs specific to the C-128 including: *Basic Compiler*, *Basic-8*, *Basic-8 Toolkit*, *Cadpak*, *Cobol C*, *Colorez*, *Family Tree*, *Fleet System 4*, *Fontmaster*, *Home Designer*, *NewsMaker*, *Poster Maker*, *Sketchpad*, *Spectrum*, *Superbase*, *Superscript*, *Super Disk Utilities*, *Pro Tutor Accounting*, *TAS (Technical Analysis System)* etc, as well as the full *Geos v2.0* range. (Owners of earlier *Geos* versions may update to v2.0 also).

There's a good range of books too, such as: *C-128 Internals*, *C-128 Tricks and Tips*, *C-128 Basic Training Guide*, *C-128 Peeks & Pokes*, *Second Book of C-128*.

See the *Digi-Talker* review in this issue for a brief outline of the extended C-128 programming environment - *Basic 8* - which is complete "as is" and which also allows the use of such utilities as:

Spectrum 128, a full-featured deluxe paint program for 80 column mode & 600x200 resolution. Airbrush, mirror, 3D solids, pixel editor, flip, block fill etc. as well as a text mode with adjustable font sizes etc.

Colorez 128, which is a utility to convert 40 column graphics to 80 columns in

HiRes, 640x176 pixels. 16 colours are available and it's all icon-driven.

Home Designer 128, a sophisticated CAD package for creating detailed drawings to scale. User-defined height and width, object rotation and copying, Imperial measurements supported, zoom mode and all the usual drawing options plus scaled printing on a dot matrix printer.

SketchPad 128, which again uses the 80 column mode for crisp graphics. Smooth freehand drawing on a 600x200 pixel screen plus Enlarge, Scroll Screen and SlideShow options. Cut and paste of graphics, also uses *Print Shop* graphics direct from PS disks. Text mode with many fonts plus full printer support.

NewsMaker 128 is a desktop publishing system which requires the fitting of the extra 64K Video RAM chip to your 128. It works with a 1571 drive and 1351 mouse and a second drive (1571 or 1581) to produce "professional quality" posters, flyers, newsletters, signs etc. May be used as a stand alone program or in conjunction with word processors or graphics software.

All of these programs, and others in the Free Spirit range, have been written to take advantage of REUs (Ram Expansion Units) and the CBM 1351 mouse. They'll still work OK if you don't have those items.

'89 Games & Hobby Expo

● We're not too sure on what to expect to see, but it may be worth a visit if you're into games in a big way. The Melbourne venue attracted some 30,000 attendees and now Sydney will be blessed with its own Games & Hobby Expo where computer games are promised to feature to some degree. Visit the R.A.S. Sydney Showgrounds from November 10-12 and head out to the Royal Hall of Industries. For further details call (008) 334 625. □

Update

If you remember in last month's Update, I talked to you about Piracy and went into some detail on Piracy "1" and Piracy "2". I would like to talk to you this month about Piracy "3".

This is when a software importer deliberately brings in popular software that has already been licensed through another Australian importer. These people are taking advantage of the advertising, promotion and back-up being given by the bonafide importer, and to my mind are unscrupulous and immoral dealers in computer software. Not only are they trying to profit on the backs of legitimate distributors, but they are in fact like Pirates "1" and "2", breaking the law.

So why not sue them or have them arrested, I hear you ask? Well, obviously the police have more important things to do, and when a legitimate distributor does take these people to court, it drags on for years, by which time the damage has already been done.

Why unscrupulous and immoral? Because they do not and are not willing to spend their money on advertising the product; they very often don't put warranty cards of their own in with the software, knowing that the consumer will probably trace the product back to the legitimate importer demanding and probably getting, the service back-up from them, rather than from himself; (I personally have received a number of telephone calls about several products that Packtronics have exclusive rights to and have only discovered that we were not suppliers of this software by mention of specific retailers that we do not do business with).

Once again, you the public suffer in the end (as does the retailer) who buys from these people, for example they will bring in product that is not 100% suitable for PAL version, which is necessary for our television/monitors here; or they will bring in versions which have not been thoroughly tested, and may still have bugs in them, or even viruses, which many of them don't even bother to test for; they sometimes sell older versions of a programme when the newer version has already been released by the legitimate importer. Once again these problems, as in Piracy "1", "2" and "3", mean that you the consumer may pay more than you should for the software that is being legitimately sold.

And now for the GOOD NEWS!!! "PEN PAL" is now here - this is the PAL version, and we have been guaranteed that it is bug free. We also have just received delivery of some great new games, books, etc; see page ???

Advertisement

Another pretty face.....

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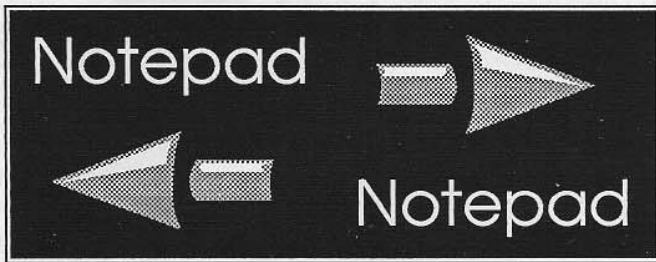


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Programmers turned pirates

● We receive dozens of disks filled to the brim with copy programs for the world over. Many have similar features, but very different front ends or user interfaces. Lately, accusations have been flying hard and fast between the authors of various copy programs accusing each other of pinching code. The latest addition to the fray appears to be a new Virus program which at the grass roots level contains many lines of code identical to another well known program. Both the programs concerned are or will be destined to be commercial programs.

Read and write Macintosh disks!

● *Mac-2-Dos* is now available. This utility program includes an interface enabling you to connect a Macintosh type disk drive. Files may then be transferred to and fro between both formats. Various translation filters may be set and Macintosh disks may even be formatted. Ideal for desktop publishers requiring the use of bureau equipment connected to Apple hardware. Thanks to Central Coast Software for our advance review copy. No pricing or local distributor as yet, although several importers such as Computermate already carry CCS products - we expect they will include this useful addition in their range.

On the same theme M.A.S.T have released a disk drive that works as both an Amiga and a Macintosh disk drive and connects without the necessity for any type of interface. Hackers have already reduced the Mac-

Emulator to a disk (no ROMS!)... so now, although somewhat illegally, you can have your Mac-Emulator with just a disk, and the disk drive - no ROMS, no Interface! Don't ask us where you get it.

Information for Annuals

● We're at it again. Our Annuals have proved to be a big success and this year is another chance to ensure your User Group, Bulletin Board System or Product is included in the relevant listings to be updated and published. Contact our editorial offices quick smart to ensure inclusion (02) 817 0011.

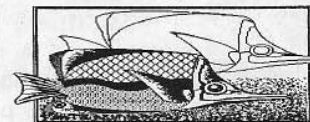
The trouble with mice

● Mouse problems are becoming a trademark of new Amiga users. It seems the problem stems back to poor design. The mouse buttons of the newer mice employ a low quality membrane type switch similar to the old Atari joysticks and other cheap brands. These bubble membrane switches slip, wear out and generally misbehave, driving the user around the twist. Now there's a fix! The Micro-mouse Conversion Kit provides real microswitches as a replacement for these low quality switches.

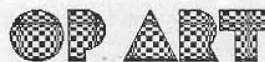
The printed circuit board and instructions sell for \$19.95 and are an excellent alternative to a new mouse that may break in another three months. Installation of the modification is simple, requiring a Phillips-head screwdriver, soldering iron, razor blade

and a nail file or emery board. The job only takes a few minutes. An excellent idea, thank you Mr Alan Keys. Order your kit from Master Systems P/L, Shop 3/40 Station St, Bayswater, Victoria or call them on (03) 720 6722. P&H is \$1.55.

Optical Dreams and Computer Colouring Books



● *Artscape* are never short on new ideas for Amiga graphics. Their latest releases include two rather unusual additions. The *Australian Animals Colouring Book* contains a number of line drawings which may then be painted in using your favourite paint program. Brushes, fill patterns and clip art are included to liven up the finished product. There is also a handy tutorial explaining how to go about jazzing up your line drawing using the included bits and pieces. A nicely presented package that is yet another credit to *Artscape*.



Optical Dreams contains a variety of dazzling black and white images, cyclic images and colourful creations all designed for enhancing your own images. Many of these are virtually optical illusions. Great for weird special effects and out of the ordinary fills. For further information contact *Artscape Studios* on (02) 9771829 or write to PO Box 751, Manly, 2095.

Authoring system

● *Commodore* and a third party, *Insatt Corp*, are working on an authoring system which will allow non-programmers to design computer software and concentrate on being creative. The system will use an icon based script system to access functions. Animation, art, sound,

text, speech and dataprocessing will be handled. It is planned the system will interface with CD and CD ROM players, cassette players, genlocks and various other peripherals. The end result is that an end user can easily design and modify simple applications. The overall emphasis will be on educational applications in the style of *Hypertext* and *Hypertext*.

Spirit Technology Down Under

● In case you have not noticed the ads, *Spirit Technology* is now represented in Australia. Power Peripherals are the people to talk to - and dealers carrying their products of course. Apart from a great range of A500 and A1000 memory boards, there are a number of excellent A2000 peripherals including a realistically priced hard drive controller. In the pipe-line is an interesting product to enable PC cards to slot into the Amiga-BUS such as smart modems and drive controllers. This means you don't need the Bridgeboard to run PC boards and the possibility of a PC slotless A2000 looms larger than ever. For information call (03) 369-7020.

New Products

Pen Pal

● Two suppliers will have the PAL version around about now - we had a quick preview of the program and it appears very impressive. The only thing lacking was a thesaurus. Speed of operation and ease of use were excellent - watch for a full review next month. (NTSC versions may still be floating around.)

GVP Accelerator

● *Computermart* in Western Australia are handling the complete range of GVP products including a number of new items. For true 32bit

power the A3001 running at 25Mhz or A2501 at 16Mhz are the best way to go. Six models are available, all of which include the 68030 processor, 68882 maths coprocessor and 4 Megabytes of 32bit RAM. Computermart say the board will run virtually all software except for about one in 30 games. Even screen refresh is faster on some entertainment programs. The board is switchable for fussy programs.

The GVP A2501 16Mhz with no hard drive sells for \$5699, and the 25Mhz model is \$6159. For an extra \$1000 you get a 40MB Quantum drive - a little expensive for 40MB in our books. 80MB drives are also available.

For further information call (09) 328 9799 or BBS on (09) 328 4217.

MAST Tiny Tiger II

● A new animal is about to walk the hard drive market - more powerful and more flexible than its predecessor. Using a Fujitsu drive mechanism, with 20ms access and a 64K RAM cache the Tiny Tiger may optionally be connected to M.A.S.T.'s own proprietary parallel interface or to any other SCSI adaptor. The M.A.S.T. interface is reported to load *DeluxePaint II* in 2.1 seconds. The bus-based, auto-booting Infinity Machine with DMA support should be available by the end of the year for those power users needing additional speed.

The Tiny Tiger II comes with a host of features. The drive may power on at boot-up, or it may be switched on later. The SCSI address is switch selectable and the unit includes a pass-through connector. On the front panel are some great status indicators including a numeric display of the current SCSI address, parity off/on, write protect, termination and autpower. The power off/on LED also illuminates the capacity of the drive. For further information con-

tact M.A.S.T. on (02) 359-0444.

PixelScript 1.1

● *If you're using Professional Page, or any other PostScript compatible program, PixelScript will allow you to output high quality text to a dot-matrix printer. The program supports all major desktop publishing programs, includes an AREXX interface, handles structured graphics, enables previewing and is now much faster the original version. Distributed by Computermate (02) 457 8118.*

Elan Performer

● A professional presentation package which handles graphics and animation of different formats. Sequence images and animations, control speed and timing, control frame-by-frame in forward or reverse playback with ANIM, RIFF, IFF, HAM and RGB format images. Distributed by Computermate (02) 457 8118.

New MIDI products

● Digital-X Australia have a strong range of new MIDI products which will shortly be available in Australia. The MIDI-XPLUS sampler is a two in one device which is a MIDI-Interface and Sampler. Internal sampling of the device runs at 100Khz. Pretty impressive! MIDI-X2 provides two MIDI outputs and connects to the serial port with pass-thru.

MIDI-Matrix allows a number of different MIDI devices to be switch controlled to the Amiga, or by-passed. You can also assign output to the Amiga or assign it as a thru port. Takes all the hard work out of MIDI cabling. For further details on these products contact Digital-X on (02) 221-1987. □

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TO THE EDITOR

Bridgeboard queries

● I have recently become an owner of A2286D Bridgeboard.

My kit was accompanied by documentation only covering MS-DOS and GW-BASIC and no specific information about the A2286D was given.

I have opted to ask your magazine for advice as the salesman told me that I required a C.G.A. for a colour display with the Bridgeboard, whilst Commodore tells me that it already produces C.G.A. output.

My question is, can I get a copy of the "Bridgeboard Manual".

S Lee
Strathfield NSW

Ed: You should have definitely received a Bridgeboard Manual with your purchase. Go back to the dealer you purchased from and insist you get one. You do not need a CGA card, the colour PC icon in the PC drawer produces a colour display - check the PC preferences too.

A500 modulators

● I'd like to say that this mag is the best.

I have an enquiry about the Amiga 500. You know how it has a modulator which connects to the TV, well, what does it do? Does it make the TV act as a monitor or not? Help would be greatly appreciated.

P Tzamourtzis
Leongatha VIC

Ed: The modulator turns the composite or RGB video signal in your computer into an RF signal which the tuner on your TV is expecting through the aerial socket to which you connect. This does not turn your TV into a monitor. A monitor will give you a significantly improved display.

Bar charts?

● I was wondering whether you could help me track down a software package.

For the past couple of months I have been looking for software compatible with an A500 computer which produces graphics similar to that which is produced by the *Crick-et Graph Package* on the Macintosh machines. That is, simple line charts, bar charts, area charts etc, with options to vary fonts, legends etc, and data entered into a spreadsheet style data editor. The closest I have come to it is a package called *Chartmaker* produced by South Park Software in California in 1986, nobody seems to know of this package. Have you heard of it? If so where? Or if not, is there any other software available which can achieve the same end?

The object of the exercise is to produce laser printable figures for inclusion in publishable articles.

L Laurenson
Churchlands WA

Ed: Try Maxiplan Plus or The Advantage from Gold Disk. Both have excellent chart facilities. We do not know of a local supplier for South Park products.

GEOS extra RAM

● Could you try to give me some information regarding the RAM Expansion Unit that is mentioned in the GEOS User's Guide, (page 3-17, version 1.3). I have spoken to Commodore in Melbourne, asking if they stocked the REU, and was told it wasn't a Commodore product. Yet the GEOS User's Guide specifically calls it the "Commodore RAM Expansion Unit (REU)", adding that, "this device adds 256k of RAM. Another 256k may be added to yield 512k additional RAM storage."

My family and I use the Com-

modore 64, 1541-II disk drive, GEOS 1.3 (Pro-Pack), together with the MPS 1250 printer to produce and print school projects, letters, etc, and at the moment I am publishing a news letter for a club that I am a member of.

So if you can help me with this question about the REU, where could I purchase it, and price, it would be very much appreciated. Thank you for an excellent mag, it's been very informative, especially the Annual.

P Edrupt
Watsonia VIC

Ed: Ask any Commodore dealer for a C128 128k RAM expander - they work on most C64's - power supply depending. GEOS fully supports this RAM expander.

A1000 future

● I own an Amiga 1000 and find it to be a great machine but I would like to know why some software eg: Capone, and hardware, harddrives etc, is not designed for the 1000.

Is the 1000 considered obsolete or what?

What is so different about the two machines?

A friend (500 owner) saw a stand for the 500 that fits over the CPU and provides a neat place for the monitor. He would like a name of a supplier if that is possible.

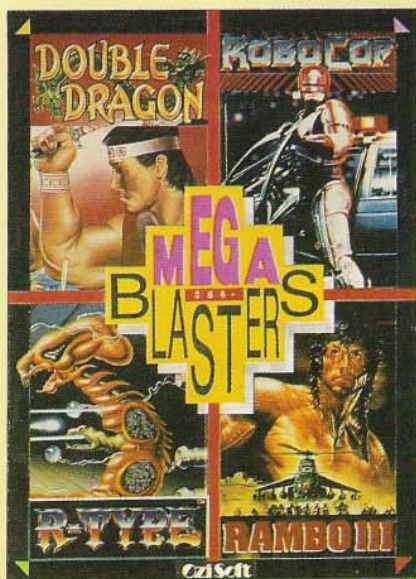
S Gooch
Grafton NSW

Ed: Limited support for the A1000 still exists from people like M.A.S.T. and Spirit Technology. However, as the A1000 is no longer in production, many hardware products will not be available for it in the future.

The A500 and A2000 sport improved board design and a lower chip count than the A1000.

A stand for the A500 is available from Computermate (02) 457 8118.

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Sculpt Animate 4D

by Brett Sullivan

Sculpt Animate 4D is a powerful graphics and animation package from Byte by Byte. Sculpt 4D is designed for the serious video producer and uses the Amiga's maximum graphics capability to produce dynamic images.

THE PACKAGE CONSISTS of one Player disk and two Program disks, one of which is designed for the 68020 accelerator board. Accompanying the disks is a 14-chapter manual with appendices and a reference section. The manual is clear and explains rather difficult concepts with simple analogies. However, it is not something to be read then stored away. Since there is so much flexibility in the program you will constantly be referring to the manual for the first few weeks (or months!). The learning curve with *Sculpt 4D* is higher than *Videoscape 3D* but slightly less than *TurboSilver*, a similar 3D ray tracing program.

Working Screen

- After entering a password (if you

do not modify the disk or the system, however, it will not usually ask you for a password) the working screen appears. *Sculpt 4D's* operations are all accessed through menus and windows or through equivalent keyboard controls. The working screen comprises six main menus; Project, Edit, Tools, Observer and World. Project is used to essentially load and save images, scenes and animations.

The work screen includes a Tri-View, North, Down and West, which displays flat orthographic projections of the objects and scene. Scenes and objects are built in these views. The tools available for constructing objects are located under the Edit and Tools windows. Objects are composed of vertices, joined by edges then filled with faces. Faces are com-

posed of triangles, the simplest geometric shape. Pre-packaged shapes such as cubes, spheres, cylinders etc are available and can be used instantly. Often these shapes will be used as the basis for a more complex shape.

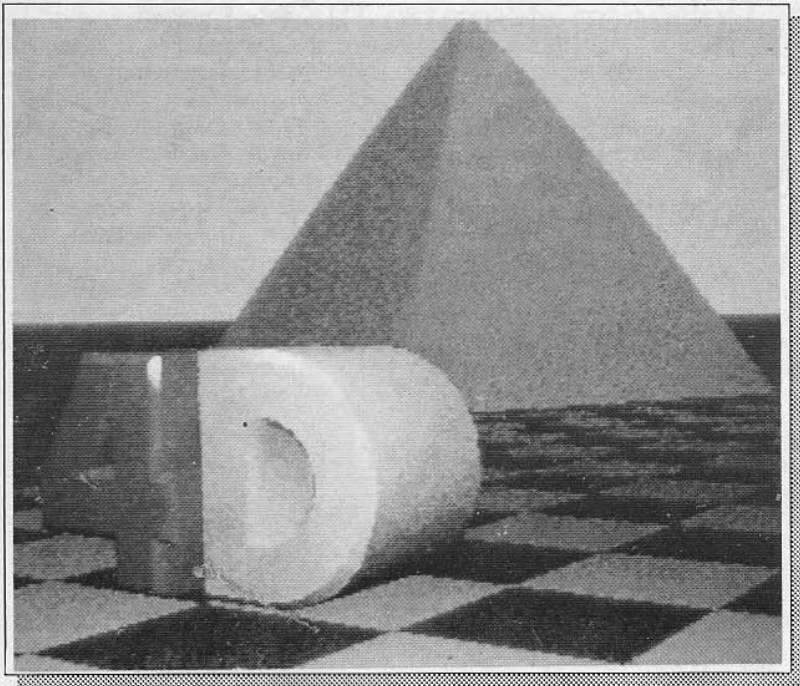
Manipulating the shape you have created requires you to select its vertices. Sometimes it can be difficult to find the right vertices if you are working within a complex scene, but fortunately you only have to find one vertex, click on Connected, and the entire object will be selected. Objects can be duplicated, reflected, expanded, contracted, rotated and distorted.

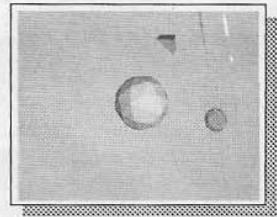
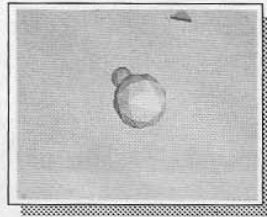
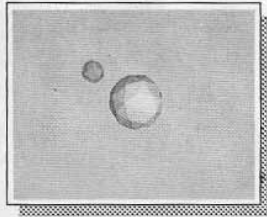
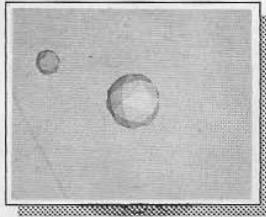
Distortion can be achieved in a number of ways. Firstly, only certain vertices may be selected and they may be moved causing the faces of the object to stretch or shrink, or the cursor may be placed at the centre of those vertices and then uniformly expanded or contracted. The neatest method in creating irregular volumes is to use the magnet tool. Once certain vertices are selected then a magnet can be applied so they move in a direction of repulsion or attraction. The strength of the magnet is determined by how far it is from the vertices. This is great if you want to blow up surfaces or create dints and depressions.

Curves

- What about building curved objects? One method is to use the Curve tool. This tool simply connects vertices by straight lines as you plot the vertices. Even though it may appear to look like a curve it is essentially a sequence of straight lines.

A better approximation for curves can be utilized with the Spline feature. Before computers, when a designer wanted to produce a curve a thin strip of plastic was bent to generate the desired curve. This strip was called a spline. The designer would mark a few points on his paper, called knots, indicating where the curve was to pass. The spline defines the shape of the curve between the knots.





With *Sculpt 4D*, vertices on the curve are selected to become knots and when the spline command is activated a smooth curve is produced. The knots themselves can be modified to produce different curves. The curve's speed and slope at the knot can be varied (direction of the tangent to that point) as well as turning the knot into a cusp (where two curves meet but do not share a tangent, i.e. like the horns in a crescent moon).

A 2D object outline may be rotated about any axis and through any degree, or may simply be extruded in one axis to produce a three dimensional object. A goblet, an hourglass, or chess pawn are perfect examples of spinning one curved outline through 360 degrees. A rectangular

box is simply a square or rectangle extruded along one axis to give some depth. A variation of the spin command is also provided that allows helical or spiral objects to be built e.g. a screw thread or coil spring.

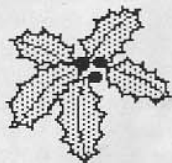
Colour and texture

● Once an object has been created its faces must be given some colour and texture. Pulling up the Modify Faces requester presents texture options and typical RGBHSV colour sliders. An object need not be all one colour, but a collection of as many colours as there are faces. The textures available are luminous, dull, mirror, transparent (reflects 20% of light and lets the rest pass through),

shiny, and metal (combination of shiny and mirror).

Another option in this requester is whether the faces should be smooth or not. If the faces are smoothed then they will reflect light as though the surface was smoothly curved instead of faceted. The method used to calculate the curvature is called Phong smoothing. Phong smoothing, however, will only smooth faces and not outlines.

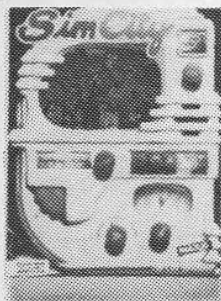
Generating objects is only one part in producing a scene. A scene also comprises an observer, a world, and some lamps (light sources). The observer has its own menu in which half the options concern the final rendered image while the others control location of the camera, its target,



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lens size in millimetres (which can be manually adjusted), tilt and exposure. There are several rendering modes used for the final render - wire frame, sketch, painting, scanline painting, scanline snapshot, snapshot and photo. Photo mode is the full ray tracing HAM mode while the others are successive stages from wire frame to ray tracing. Another option is how large you want the image to be. There are six sizes ranging from Tiny to Video. A Video sized image may take 100 times longer to render than a Tiny image. Accompanying these features are anti-aliasing options and a dithering control to adjust the graininess of the picture.

Patience is something which must be acquired when *Sculpt 4D* is in rendering mode. A Tiny sized ray traced image may take 3-15 minutes, whereas a video sized image can take from one to 48 hours depending on the complexity of the scene and the textures of the objects. Image doing a 5 second animation (125 rendered images)! The 68030 accelerator board with 4M of 32 chip fast memory makes rendering time roughly ten times faster. An accelerator board may be a wise investment!

The final menu is World. World consists of sky, ground and background illumination. The sky can be one colour or a graduation between two colours. The ground can be one colour or a dreaded checkerboard floor! The illumination requester is used for filling 'light' in dark areas and vice versa but the default setting is perfect for most work.

The last section of the scene to be considered is the light sources, known as lamps. There is no limit to how many lamps can be used but more lamps will require longer computation time to generate an image. The colour of the lamp and its brightness can be adjusted as well as moving it in an animated sequence.

Animation

● Creating animations is a rather complex procedure. Objects, lamps, the target, and the observer may be assigned paths to move along. Paths are drawn in the same way as objects. *Sculpt 4D* provides a hierarchy system for assigning paths to objects, similar to the child and parent relationship in *Videoscape 3D* except it may be 16 generations deep and a generation may have up to 255 offspring. With a Tri-View full of paths and objects it becomes difficult to tell whether a line is a part of a path or an object.

Animation can be done in two ways: global or key frame animation. Global animation uses one scene whereas key frame animation is the transition from one scene to another. Both of these approaches can be used at once but this can get quite complicated. When animating, care must be taken with the number of frames to be rendered because 10 frames may be the maximum you will fit on one floppy disk!

Sculpt 4D also has the ability to write scripts for scenes and animations. Scripts may also be written to customise the

working screen setup, as well as assigning certain keys to perform menu tasks.

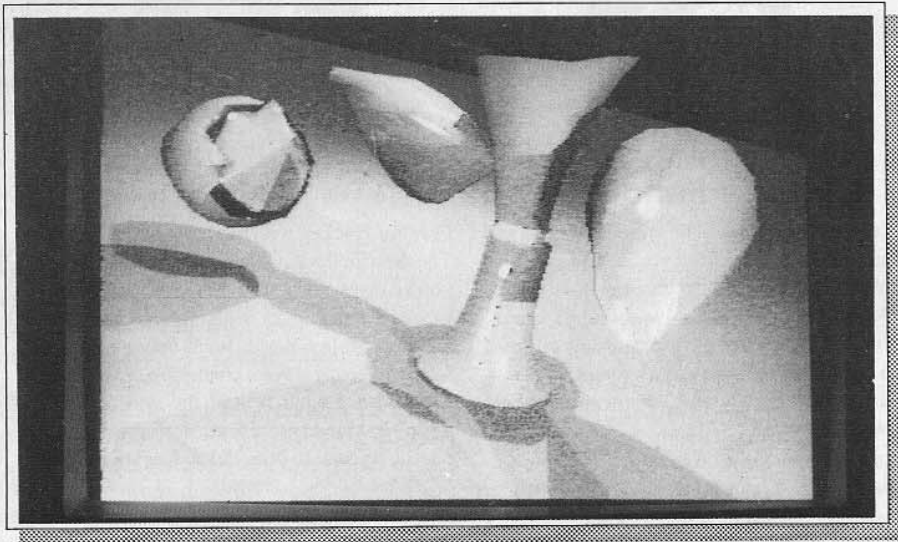
Sculpt 4D allows control of the number of bit planes being used (number of colours). This can be useful when you want to import images from *Sculpt 4D* to use in other software packages. *Sculpt 4D* pictures are in IFF format, however the animations are not in standard PlayAnim format which is disappointing. If you specify 24 bit planes (16,777,216 colours) this allows you to record separate red, green, blue image data to disk files. Most users would not have a use for this data but it is provided so that specialised hardware and image processing software may use *Sculpt 4D* images. *Sculpt 4D* animations may be displayed on professional graphic workstations achieving broadcast quality resolution. The *Sculpt* images will not be limited to the Amiga's resolution!

How is the new version different from *Sculpt 3D*? The rendering time is three to six times faster; there is an extra disk for the 68020 accelerator board; grid and coordinate options are available, objects may be 'hidden' in the Tri-View and fonts may be designed and typed in. These and a host of other subtle additions make *Sculpt 4D*'s user interface much friendlier than its predecessor.

The problem with *Sculpt 4D* is that it does not handle refraction, unlike *TurboSilver*. *Sculpt 4D* objects are hollow whereas *Silver* can create solid objects. Also *Sculpt 4D*'s rendering process is not as fast as *TurboSilver*. At a price of \$850 *Sculpt 4D* may be a wise investment for the serious video producer, but is really out of the price range for lower end users. To get the the most efficient use an accelerator board, minimum 3Meg memory, and a hard disk are necessary.

Once you know your way around *Sculpt 4D* you can produce some impressive animations. Shadows, highlights, reflective and transparent surfaces look incredible once objects start moving. With *Sculpt 4D*'s powerful object modelling tools, its rendering options, and its ability to write separate RGB files to be used with higher resolution systems, serious animators will need to consider investing in *Sculpt 4D*. □

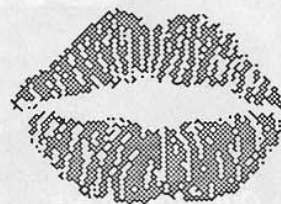
Available from Computermate (02) 457 8118.



Digi-talker

- A Utility for the C-128

by Eric Holroyd



THIS SOFTWARE, along with many other programs published by the Free Spirit company, makes extensive use of *Basic 8* which is a "programming environment" written specifically for the C-128 to utilise its 80 column graphics display.

Basic 8 allows 640 x 200 resolution in monochrome and 640 x 192 in 16 colours without the need for any additional hardware and also permits drawing in 3D. It has many of the features we've come to expect in Art and Drawing programs, such as Windows, Fonts, Brushes and Patterns and programs written under *Basic 8* can be used with a *RunTime Library*. This means, of course, that they'll run on a standard C-128 using its normal *Basic 7* and will get the extra information they need to run from the RTL.

I remember typing in a very long listing from *RUN* magazine about three years ago which was called Ultra HiRes and which had some great demos of what the C-128 was capable of in 80 column graphics mode. This was written by Louis WALLACE and David DaRUS who teamed together to become WALRUS Software. Get it? They seem to have expanded greatly on that original program to produce the *Basic 8* environment which now adds over 50 new graphic commands to the standard C-128's *Basic 7*. The software comes on two disks containing the language and a set of utility programs plus *Basic Calc* and *Basic Write*. There's a 200 page manual of instructions on how it all works too.

I had to explain all that to set the stage for the *Digi-Talker* utility which is a stand alone utility which the programmers have put together making extensive use of *Basic 8* and the *RunTime Library*. Because of that it's compatible with both versions of *Basic* and runs on a stock standard C-128.

If you own a Ram Expansion Unit or a mouse you'll be able to use them with *Digi-Talker*. If not you can use a joystick in port 2 and load in the various bits and pieces from disk when required rather than having them in RAM. Two drive use is fully supported too.

Digi-Talker is basically a programming

utility which lets you put speech effects into your own programs. It's not a digitiser, but uses an extensive library of sounds on disks known as ClipSound libraries which have a great number of sounds to choose from. What happens is that you have your program load a machine code file to memory (and there's one each for *Basic 7* and *Basic 8* programs), then use lines in your program to load and play the sounds you want. There are programming examples in the manual and it's all very easy. The new *Basic 8* commands @BUFFER, @LSTRUCT and @SEND are used in these lines and let you have a voice say "Press any key when ready" when your program requires it. The *Digi-Talker* disk itself does just that with a female voice and has a male voice saying "Thank you" when you do!

Sounds

● Here's just a few of the many sounds to choose from on the *Digi-Talker 2* disk set: File not found; Insert disk; You have selected; Please; Thank you; Press; Welcome; Press left (or right) mouse button; Up; Down; Left; Right; Yes; No; Answer is; You have made a mistake. There's a full set of numbers as well as all the colours available on the C-128 so that you can have your program speak the name of the colour selected. Words may be "chained" together by using, say, "twenty" and "five" to say "twenty five" or perhaps "You have selected" and "Light blue" to let the user know that "You have selected light blue".

The manual tells us that the sounds were created on an Amiga 2500 using *AudioMaster* software and the Future-Sound digitiser. The Amiga IFF sounds were then changed to C-128 format and transferred across. It's claimed that this method results in better sounds than could be made with a C-64 or C-128 digitiser.

I have a C-128D with a Commodore monitor which has the loudspeaker in the side. It's only a small speaker and is quite adequate for the beeps and clicks of normal program sounds but didn't do justice to the *Digi-Talker* sounds (as

would the ghetto blaster I've got hooked up to the Amiga). The sounds were quite clear, although they had a slight "hiss" similar to a radio program or a (good) telephone line. If I were to use *Digi-Talker* on a regular basis I'd be hooking up the C-128 to some better speakers to get the best value out of the sounds, but then again I'm very fussy about sound quality and like to hear it at its best whenever possible.

Demo programs

● There are some very good demo programs on the *Digi-Talker* disk which use both versions of *Basic* and which were very well presented via a "point and click" system known as WIOS (Walrus Icon Operating System) which works Macintosh or GEOS style to load the file selected by its icon. I was most impressed with this and found it very easy to work with. It includes a clock where you set the current time with the + and - keys, then the clock stays on screen to keep you informed how the time is getting away from you again!

I ran the "Fifteen Puzzle" which is a fully working game of that good old puzzle and which uses *Basic 8*'s HiRes colour graphics and *Digi-Talker*'s speech routines to let you play with a very nice picture by Wayne Schmidt. Moving the pieces around has the "voiceover" saying "Up", "Down", "Left" and "Right" and is a good demo of what the software is capable of. Another demo requires an REU and uses the game of *Concentration* (for 1-4 players) in much the same way.

All the sounds on the ClipSound disk may be edited by using the Editor supplied and you may change the pitch of, say, a voice from a very deep male to a very high female. Edited sounds may be saved for further use.

I found this a very entertaining and useful utility, and feel that it has a lot of merit in making programs that talk to users. I can imagine that it would be of particular interest in educational programs aimed at younger children and the possibilities there are endless.

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Joystick Ergo Stick	50
Joystick Super 3 way	65
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Leroy's Cheat Sheets C128 each	14
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M 3 Mouse 64/128Proport	85
Mach 128 Cartridge	75
Mousepad	14
Joystick Winner (Model 770)	25
Quick Brown Box 64K	190
RGB to RCA Cable	
RS232 Deluxe Interface	86
Ribbons for Printer !!!	
Ribbon Reweave Re-link w/who exp	9
Serial to Serial Cable 6 ft	15
Super Graphix Gold Prntc Intrfc	229
Warspeed 128	72
Serial to Serial Cable 12ft	15
Super Graphix Senior	145
Video Ram 64K cart. full	90

BOOKS

1541 Troubleshoot & Repair Guide	45
1571 Internals	45
Anatomy of C64	45
Anatomy of the 1541 Book	45
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C128 Assembly Language Prog	40
C128 Internals	45
C128 Programmer's Ref Book	55
C128 Tips & Tricks Book	45
C128 Troubleshoot & Repair Book	45
C64 Basic Programming	60
C64 Programmer's Ref Guide	45
C64 Tips & Tricks	45
C64 Troubleshoot & Repair Guide	45
C64/128 Assembly Lang Prog Book	40
GEOS Get Most Book	40
GEOS Inside & Out	45
GEOS Programmer's Ref. Guide	45
GEOS Tips & Tricks	45
How to Program in Basic	60
K Jax Book Revealed 2	55
K Jax Book Revealed 1	55
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Machine Language 64 Book	40
Superbase The Book 64/128	45
Troubleshoot & Repair C64 Book	45
Twin Cities 128 Compendium 1	40

GENERAL PRODUCTIVITY

Bankstreet Writer	72
Business Form Shop/64	60
CMS Accounting/128	230
CMS Inventory Module 128	115
Chartpak 128	60
Chartpak 64	60
Datamanager 128	89
Datamanager 2 (64)	40
Fleetsystem 2 + 64	59
Fleetsystem 4	79

Fontmaster II/64	72
KFS Accountant 128	215
Leroy's Label Maker	45
MicroLawyer/64	86
Paperclip 3	54
Paperclip Publisher	54
Partner 128	15
Partner 64	65
Personal Portfolio Manager 128	86
Personal Portfolio Manager 64	58
Pocket Filer 2	79
Pocket Planner 2	79
Pocket Superpak 2	145
Pocket Writer 2	84
Security Analyst 128	70
Superbase 128 - V3	90
Superbase 64	59
Sprbase/Sprscpt/Book 128 Pak	130
Sprbase/Sprscpt/Book 64 Pak	110
Superscript 128	90
Superscript C64	59
Technical Analysis System 128	86
Technical Analysis System 64	58
Wordpro 128 w/Speller w/Filepro	79
Wordpro 64 w/Speller w/TurboLoad	79
Vizistar 128	69
Write Stuff 64	40
Write Stuff 64 w/Talk	49
Write Stuff C128 Version	49
Vizwrite 128	59

GEOS

Becker Basic for Geos 64	72
Desk Pak Plus	45
Fontpak Plus	45
Fontpak 128 w/Speller w/Filepro	79
GEOS 64 v.2	89
GEOS/Programmer 64	110
GEOS Write Workshop 64	67
Geocalc 128	96
Geocalc 64	67
Geochart 64	48
Geofile 128	96

PERSONAL

Boston Bartender's Guide	23
Bridge 5.0	43
Cardio Exercise & Hearttab Combo	140
Celebrity Cookbook 64	43
Dr Ruth's Game of Good Sex	43
Dream Machine Analyze 64	43
Great War	29
Family Tree 128	86
Family Tree 64	86
Hearttab	90

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EDUCATIONAL

Alphabet Zoo	35
Learn the Alphabet	12
Big Bird's Special Delivery	16
Calculus by Numeric Methods	49
Counting Parade	12
Designasaurus	55
Easy Sign (Sign Lang Alphabet)	29
Ernie's Big Splash	16
Ernie's Magic Shapes	16
Evelyn Wood Dynamic Reader	30
Facemaker	32
First Men on Moon Math	39
Grandma's House	12
ESP Tester /64	36
Jungle Book (Reading 2)	37
Kids on Keys	37
Kidwriter	44
Kindercomp	39
Linkword: German	39
Linkword: French	39
Linkword: French 2	39
Linkword: Italian	39
Linkword: Russian	39
Linkword: Spanish	39
Little Co Puter People	39
Mathbusters	12
Mavis Beacon Teaches Typing	65
Peter & Wolf Music	39
Peter Rabbit (Reading 1)	39
Reader Rabbit	60
Sky Travel	72
Stickybear's ABC's	43

CREATIVITY

Animation Station	129
Award Maker Plus/C64	60
Billboard Maker/64	43
Blazing Paddles	55
Bumpersticker Maker	72
Business Card Maker	60
Cad 3D/64	72
Cadpak 128	90
Cadpak 64	63
Certificate Maker	35
Certificate Maker Library	30
Colorex 128	22
Computer Eyes	190
Create a Calendar	45
Doodle 64	60
Flexidraw 5.5/64	60
Flexilont 64	45
Graphics Arts Disk1/12 each	72
Button & Badge Maker	72
Picasso's Revenge	69
Home Designer 128	59
Home Designer/Circuit Symbol Lib	19
Icon Factory 64	59

UTILITIES

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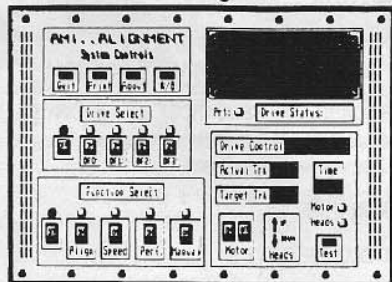
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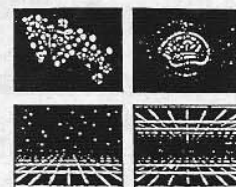
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JIFFYDOS

A disk drive enhancement system for Commodore C-64 and C-128

by Eric Holroyd

DURING THE LIFESPAN of the incredible 64 and its bigger brother, the 128, there have been many speed up devices made available to users to get better performance from snail-emulating Commodore drives. They are very good drives, let me hasten to add, but the in-built data protection and safety features all take time to do their stuff as users everywhere will know.

Numerous "add-ons" in the form of cartridges and/or replacement ROM chips all have something to offer in the speed-up department, some with better results than others, and some with a slight degree of incompatibility with some aspects of Commodore's DOS (Disk Operating System).

To overcome this most units offered a switch to revert to normal DOS if a problem was encountered. I've used, and reviewed, several speederuppers and have always appreciated such a switch, as (to further compound the problem) many software publishers use complicated copy protection routines which rely on normal DOS to work.

A further point to consider is that many previous systems only work on some aspects of the computer's operation

such as Loading and Saving of normal PRG files but not on SEQ or REL files so if you're using a word processor, spread sheet or database which saves its data as SEQ, REL or USR files then the speed up system doesn't help you at all.

Replacement ROMs

● The creators of JiffyDOS, Creative Micro Designs (USA), seem to have done an admirable job in taking all these factors into consideration and have come up with a system of two replacement ROMs, one for the computer and one for the disk drive, which are quite simple to fit (and the fitting instructions are very easy to follow, I found). Both new ROMs are supplied complete with switches to allow you to revert to Commodore DOS if any of the problems already mentioned above are encountered. No extra cables are required and JiffyDOS doesn't use up any memory, nor does it tie up the cartridge ports.

The new system speeds up, by up to 15 times, ALL disk operations ie Loading, Saving, File Scratch, Disk Formatting of file types PRG, SEQ, REL and USR. It doesn't bypass any of the original DOS's error-checking routines either.

The makers claim better compatibility than any other speed-up system and offer a full 30-day money back guarantee if you're not completely happy on this score too.

When ordering, you need to specify the components of your computer system as there are subtle differences in the DOS of various Commodore units. Each new ROM is specific to a Commodore model and JiffyDOS has been made available to suit virtually any combination of computers and drives, both C-64 and C-128. The brochure lists a number of drives we've never even seen here in Australia, such as the Indus GT, Cardco CSD-1, Amtech 1541 and several others I've never come across. I mention this as it made me think that they really must have gone into it in some depth to cover all these different units.

Just as a matter of interest, JiffyDOS is also available to use with the 1581 drive which is a terrific drive by all accounts, but which Commodore, in their wisdom (??) have never seen fit to make available to their faithful band of supporters here.

DOS wedge

● In common with most other speed enhancers, JiffyDOS has an in-built "DOS wedge" of simplified commands to save the user time in entering command strings. These are mostly one or two key-strokes and use the commercial "@" symbol as a prefix. Thus @\$ displays a harmless disk directory, @N formats a disk, @V validates a disk, @L will lock or unlock a file and there are many other useful "shorthand" commands. One I really liked was the @B one which stops the annoying "headbump" or rattle that some copy protection systems use. There are commands to load and save programs, send a screen of text to the printer, list a BASIC program to screen or printer and even OLD (Un-NEW) a program. This last one is very handy for use in conjunction with a reset switch to examine BASIC programs.

JiffyDOS's two ROMs contain the lat-



est Commodore upgrades which will be of great interest to C-128 users (like me!) as there were bugs in the original ROMs which affected things like drive initialization and RELative file operation which were fixed by Commodore's upgrades. Unfortunately, this made some disk back-up programs such as *Fast Hack'em* incompatible, but the guys at Creative Micro Systems have fixed that up too, so that JiffyDOS users can have the upgrade benefits and still use their copy programs to make archival backups of their valuable software.

Faster times

● Here's some figures to show what you can expect with the new system:

We'll start with the **LOADING** times of a sample 202 block PRG file

C64/C128 - 64 mode		Seconds
1541	Standard DOS	124
1541	JiffyDOS	12
1571	Standard DOS	124
1571	JiffyDOS	9
1581	Standard DOS	124
1581	JiffyDOS	8

C128 - 128 mode		Seconds
1541	Standard DOS	124
1541	JiffyDOS	12
1571	Standard DOS	14
1571	JiffyDOS	9
1581	Standard DOS	12
1581	JiffyDOS	8

SAVING of a sample 100 block PRG file via JiffyDOS showed on average that the save took place in approximately one third of the time taken via Standard DOS. This also applied to reading and writing of REL files, a feature which will delight serious users as many business programs use this file type.

Now here's the times taken for **READING/LOADING** a 125 block SEQ or USR file;

C64/C128 - 64 mode		Seconds
1541	Standard DOS	84
1541	JiffyDOS	15
1571	Standard DOS	84
1571	JiffyDOS	13
1581	Standard DOS	63
1581	JiffyDOS	9

C128 - 128 mode		Seconds
1541	Standard DOS	82
1541	JiffyDOS	14
1571	Standard DOS	31
1571	JiffyDOS	12
1581	Standard DOS	20
1581	JiffyDOS	10

Similar figures apply to the **WRITING (SAVING)** of SEQ & USR files so all in all the speed improvements are pretty impressive to say the least.

To sum up I'd say that this is a worthwhile improvement to any Commodore 64 or 128 system, which becomes an integral part of your computer and drive as opposed to an add-on. It all works very well and I didn't experience any difficulty with either installation or general usage. The DOS Wedge, it's the Commodore version 5.1 with 14 extra commands, is very useful and I found the whole thing to be well thought out

and put together. The function keys are programmed to perform various directory and disk functions and can be re-programmed by 128 owners or disabled by 64 owners wishing to use other function key definitions.

I'm certainly very pleased with it as it's the first enhancement unit I've come across that caters specifically for the C-128, which is one of the best home computers I've ever seen for general business use. I use mine every day, in preference to my Amiga 1000, as I've yet to find an Amiga word processor that I can work with as easily as I can with *Fontmaster* or *Fleet System* on the 128. Other 128 users would no doubt find the same benefits as I have with JiffyDOS and of course it still offers all the faster speeds in C-64 mode too if you want to play games. □

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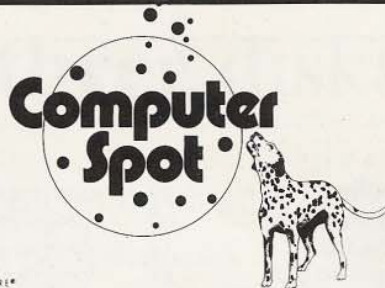
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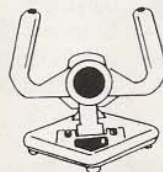
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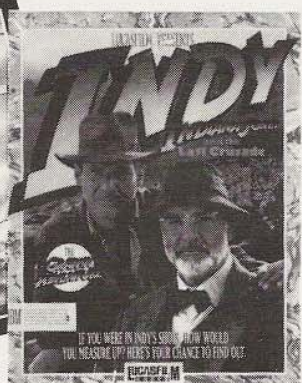
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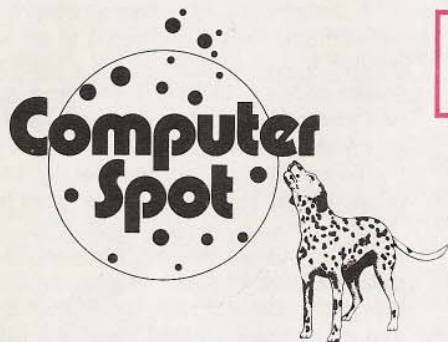
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Book Review: Amiga C for Advanced Programmers

by Oben Candemir

Programming the Amiga in anything but C was once regarded as heinous. However due to the Amiga's popularity and its ability to expand with its owner's needs, this marvelous machine has a wide range of uses. Programming in C still enjoys a high place among users' lists of uses, and it is these people (the less experienced ones at least) that this book is aimed at.

Like its namesake it really does not cater for the beginner in C and does little to make them comfortable. Therefore I might make it clear now that anyone who is entertaining the idea of learning to program in C on the Amiga should look for other titles. However the book does give a fairly narrow but deep look into the Amiga for those users who are already acquainted with the C programming language.

Among the topics it covers are:

- using the Aztec C Compiler
- using the INCLUDE DEFINE & CAST directives
- using the debugger facilities of the Aztec Compiler
- a rather 'standard' guide to using Intuition
- the full source code to a Text Editor which the authors have written.

I say 'narrow' in describing this book as that describes it very well. For one thing, most 'advanced' C programmers already know how to use their compiler and if they don't then the manual supplied with it is a far better and detailed manual. This initial chapter on using the Aztec Compiler being 76 pages long, left me thinking that this side of the book was just a 'fill-in preamble' and not really of benefit to the aimed audience of the book. Incidentally that gives rise to the other problem, that the book doesn't give alongside its programming source codes the ways to modify the code so that it will compile on the Lattice C Compiler. I found this to be a disappointing situation as I own the Lattice Compiler and found that to run some of the source codes I had

to waste time searching for any incompatibilities.

Text editor

● The second, and major criticism I have about the book is that it is based around the programming of a Text Editor written by the authors. While this may provide a good example of how to develop a large scale project, I think that the authors have at times sacrificed informational material in order to demonstrate this. For example the only real informational part of the book which is the chapter on Intuition and its functions such as menus, gadgets, IDCMP, images etc. have all been explained and described in source code with the Text Editor in mind. However the informational content of this section in areas is very good and on some topics is actually clearer than the standard ROM Kernel Manual on Intuition. I liked in particular the detailed explanation of the terms which the Intuition programmer must be accustomed to, eg. VANILLAKEY, GIMMEZEROZERO and other weird terms. This section on Intuition goes through pages 81 to 336.

The next part deals with the Console Device in some detail to provide preliminary information on the Text Editor's workings.

After that, a small section on Memory management follows again with the purpose of being a pre-requisite for the Text Editor.

Don't get this wrong, the tutorial the book provides can be used in other programs but most C programmers who are 'advanced' would already have rudimentary knowledge of these things in the first place, but then again ...

Unfortunately that's where the good stuff ended for me. The remainder of the book ie. pp 381-649 deals with the large scale development of a Text Editor. This section may be of great benefit to any 'advanced' C programmers who have ambitions of producing such large scale

projects. It puts into practice with fair detail what the chapter on Intuition taught earlier. The authors say this however:

"We selected a Text Editor as a demonstration program because it uses a relatively large number of operating systems functions.

YOU DON'T HAVE TO WORRY ABOUT PROGRAMMING THE OPERATING SYSTEM; YOUR PROGRAMMING TASK JUST INVOLVES MEMORY MANAGEMENT, TEXT OUTPUT AND KEYBOARD INPUT. As"

I thought that this was a cop-out by the authors. They've bothered to fill Appendix A - an odd 83 pages - with the source code of the Text Editor and have told the reader that they don't have to worry about most of it!?

To round up I just want to say a few other things. The book fails to give true 'bang-for-bucks', its only real good feature being the section on Intuition. There is no mention of graphics programming, using the exec library, DOS functions, and many more which I could list. Still I think that this book has an audience among the more beginner type 'advanced' C users. With some major revisions and additions though I think the book could have lived up to its name a little more fully. Therefore my only advice can be to look before you buy! □

Amiga C for Advanced Programmers by Data Becker, published by Abacus. Distributed in Australia by Pactronics (02) 407 0261. RRP \$69.95.



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VideoStudio

by Eric Holroyd



This is a two-disk suite of programs providing a dozen of the most often used video production facilities in a package that's claimed by the makers to be "easy to use" and "no previous computer experience is necessary".

I MUST ADMIT that I was sceptical about the latter statement (the first is true. It is easy to use!) but when I read through the tutorial I found that here at last was a computer program manual that includes all the vital info for first time users and spells out just what to do right from the word GO.

This kind of manual is long overdue, as I feel that too many utility publishers presume too much prior knowledge on behalf of the user, and it's a joy to work from. For instance: there's a bit headed "Before switching on ..." which talks about the CLI and the Amiga in general, and which also says that you need to know very little about the computer's operation to be able to use *VideoStudio*. It also discusses things like: PAL encoding, RGB signals, UHF adaptors and Genlocks AND takes the mystery out of them all.

Anyone who saw the "Not the Nine O Clock News" program with the skit about the middle-aged guy going into a hifi shop to buy "a gramophone" and being mercilessly sent up by Mel Smith and Griff Rhys-Jones will understand how I (and, I suspect, many others) feel sometimes when faced with a computer salesman who either doesn't quite know or

doesn't want to know how to answer my questions about these sorts of things. It usually finishes up with me being put off buying the item in question because I still don't know any more about it. This one's okay, the book is really a great help in understanding the program and how to run it on your Amiga.

VideoStudio may be used with or without a genlock, but truly professional results require one. To explain what a "genlock" is let me first of all get you to wave a pencil or ruler up and down between you and your monitor. You should get a kind of "strobing" effect which will give you several shadowy images of your pencil. If you don't see it too well, try with one eye closed.

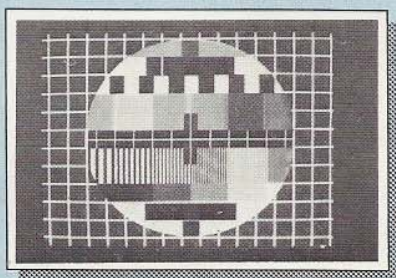
The reason for this effect is that the screen "flashes" at the rate of 50 times per second. This flash is fast enough to fool your eyes into thinking that it's a constantly displayed picture. Now, if you want to "mix" video signals into a picture they'll need to "arrive" at the tape at exactly the same time. Such video signals have marker signals at the beginning of each line and of each frame or picture. The markers are very accurate and are produced by two circuits: the

line sync generator and the frame sync generator. To mix two pictures then, you need to "lock" the marker signals of one to the other so that both pictures will start to be displayed at the same time. This is what the "genlock" does, it locks the sync generator signals of one picture to another.

Sync generators on the Amiga are governed by the main system clock and it's much easier to change signals coming from the clock than it is to fiddle with individual generators. The genlock unit will subtly alter the Amiga's speed to match its signals with those coming from your video camera or recorder. That's it! And the explanation comes from the author of *VideoStudio*, an electronics designer who was apparently dissatisfied with early video titling software for his Apple II. When the Amiga came along he chucked out the Apple, then rewrote and refined the software to its present high level.

IFF is the Amiga standard pioneered by Electronic Arts which lets you use pictures generated in one paint or art package in another. *VideoStudio* uses the IFF format to produce a 625-line PAL interlace output compatible with all VCR and TV formats. *Deluxe Paint* is the one recommended by the author, but he does say that *Photon Paint* or any other paint package which works correctly in PAL interlace and overscan modes will work okay with *VideoStudio*.

The entire range of the Amiga's 4096



colours may be used to produce your video and there's a good library of Wipe/Fade patterns for use with genlock. Another library of Border patterns allow live video to be "framed" such as "widescreen cinema", "rifle sight", "binoculars" etc and as well as IFF pictures from your paint package you may use pictures made by a video digitiser or frame grabber. Picture files may be faded in and out and may also be overlaid over live video in any

position you fancy.

This is much more than just a video titler, although in that regard it has many good features. There are 20 high-quality fonts which may be used in bold-face, italics or underlined. Some fonts allow Outline and Dropshadow effects too. Fonts from other packages may also be used. Multiple fonts may be used and scrolled smoothly horizontally or vertically. There's a Sub Titler too, plus a

copyright warning screen which you can customize to your own requirements.

It seems to me to be a most comprehensive suite of post-production facilities which should be welcomed by both the growing band of video hobbyists and the professional video producers who use the amazing Amiga. □

Review copy from Computermate (02)457-8118.

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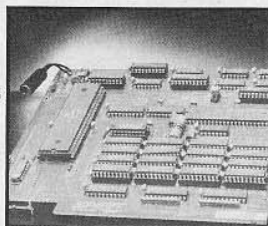
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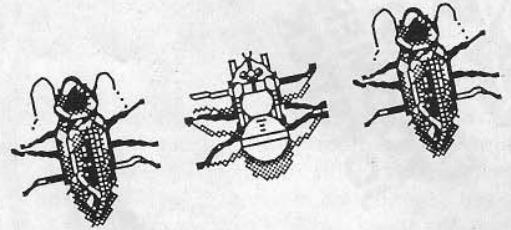
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Cockroach TurboRom Cartridge

by Eric Holroyd



THERE ARE MANY satisfied C-64 users who fitted the Cockroach Turbo Rom to their computers to get away from the notoriously slow CBM Drive Operating System and get their machines to work at an acceptable speed. I speak from experience, having had the replacement chip fitted to both my original C-64 and the C-128 when I upgraded to that fine machine. The Turbo Rom didn't do anything to the speed in 128 mode (the 1571 drive is pretty quick in 128 mode anyway) but with the machine in 64 mode it made life bearable again. You can only read *War and Peace* so many times whilst waiting for a 64 program to load in normal mode!

With the advent of the C-64C it became impractical to fit the replacement chip as Commodore had changed the design of the computer yet again, this time with the circuit board being soldered all around to its backing board. This means that, in order to do any replacing of chips, the entire board needs to be "un" soldered so that the chip itself can be desoldered from underneath the board.

Cartridge instead of ROM

● Labour and service costs being what they are, that means a fair sized labour bill which may be higher than the cost of the ROM. So, Cockroach Software decided to do something about it by putting the entire code of their Turbo Rom onto a cartridge that can be simply inserted into the C-64C's cartridge port to provide the Turbo Rom's features without any fitting costs. Simple.

The cartridge offers a good number of convenience features as well as the speed up in Loading and Saving times, which incidentally are approximately six times faster than with the standard CBM DOS. There's a set of shorthand commands which use the commercial "@" sign as a prefix, such as @F diskname,ID to format a disk (instead of "open 1,8,15,"N0:diskname,ID":close 1) and @V to validate a disk. Other commands let

you rename or scratch files, read the error channel or reset the disk drive etc etc. I've always liked the convenience of working in such an easy way and can't imagine having a 64 in normal mode ever again.

It's easier also to send commands to the printer for listing programs etc: the command @P opens a channel (same as open 4,4:CMD 4) so that when you have a BASIC program in memory you may just type LIST after issuing that command and it'll be printed out for you. Enter @O to close the printer channel.

It's apparently not easy to effect a screen dump feature from a cartridge and whilst the original Turbo Rom has such a feature (Commodore and F7 sends a text screen to the printer) the new cartridge doesn't. In its place however, is a full disk copier which lets you do multiple copies on a single drive. It does this by storing the data in a buffer and by following the prompts you can write the buffer to as many disks as you wish. This copy system is TurboRoach v2.0 and I found it to work very well. A full disk backs up on one drive in 100 seconds. Talking about times, formatting of a disk, with full verification, takes only 20 seconds and is the most reliable fast formatter I've ever come across.

As well as the copy feature, the Cockroach people have added a reset switch to the cartridge. Press the button with a Basic program in memory, then enter "@OLD" and you'll be able to LIST the program even if it had had RUN/STOP, LIST or RESTORE etc disabled by the programn.r. There are many hacker's tricks that need a reset switch so this in itself is a nice addition.

In the unlikely event (as those air hosties doing the safety demos say...) of something proving to be incompatible with the Turbo Rom Cartridge it's a simple matter to return to standard Commodore DOS. Just enter "@ZAP" to disable the cartridge and load the program as normal.

In closing I'd have to say that I think the idea of putting something as tried

and proved as the Cockroach unit on to a cartridge is a great idea and if I didn't already have the replacement ROM fitted to my older style C-64 I'd be first in line for one. □

Review copy from Cockroach Software, PO Box 1154, Southport, QLD 4215. (075)916-188. RRP \$.

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Desktop Publishing with Masterpiece Fonts

QWERTY

QWERTY

QWERTY

by Tim Walsh

ONE OF THE newest and most exciting applications for the Amiga personal computer is the area of desk-top publishing. With the release of desk-top publishing programs like *Professional Page*, Amiga users are now producing desk-top publications rivalling those produced on the more popular (and expensive) IBM and Macintosh systems.

Amiga leads the field in certain areas of desktop publishing. The most recent version of *Professional Page* (version 1.2), for example, includes colour separation capabilities which Amiga's competitors are busily trying to reproduce. (Rumour has it that the Aldus Corporation will be including a colour separation facility in the next version of *Pagemaker* due for release in early 1990 - although you'll still have to sell your grandmother to set up a full colour desktop publishing system to rival the Amiga.)

Fonts and clipart

● Whilst the Amiga is light years ahead in some areas of desktop publishing, its performance in a few other areas is dismal. Let me drop two buzz words

regarded as holy amongst desktop publishers: "font" and "clip art". For the uninitiated, "clip art" is the term given to computer generated graphics (colour and monotone) which can be imported and manipulated in art and desktop publishing programs. Access to suitable ready-made clip art can save hours of valuable computer time (why draw it if somebody else already has?). If your artistic talents, like those of this writer, are limited to drawing stick figures and smily faces, then access to professional clip art is a must.

"Font" is the term given to a complete alphabet of type of a certain size and style. To create interesting and marketable publications, therefore, a desktop publisher needs access to a wide variety of clip art and font packages.

Unfortunately, few such packages exist for the Amiga. One welcome exception is the recent release of the *Masterpiece Professional Font Collection* by Arock Computer Software. The Collection is the product of several months of research and product development by its author (name unknown). The goal was to assemble the "best possible collection

of fonts and clip art ever offered for the Amiga".

For \$199.00 US the buyer receives a 20 disk collection of fonts, clip art, brushes and utilities along with a 100 page manual which gives details about operating instructions and full size illustrations of the fonts and clip art. Included are 110 different font styles - "This doesn't mean 10 sizes of 11 fonts. It means 110 different fonts", the author emphasises; four disks full of colourfonts - useful for title pages; four disks of high resolution clip art; two disks of colour brushes; and some necessary and quite useful utilities. The manual contains a warning: "This package is for the serious user".

To operate it you need a minimum 1 meg RAM (1.5 meg RAM preferred), two or more disk drives ("hard drive nice, but not essential"), and *DeluxePaint II* (or newer). My Amiga 2000 has only the standard 1 meg RAM and I soon discovered that this was insufficient to load some of the meatier colour fonts which require in the region of 0.5 meg RAM each! (A 2 meg RAM and 40 meg hard disk system would better handle this baby.) The fonts in this package are huge! The words you are reading have been printed in 9 point font size. The fonts in this collection start at 57 and reach a staggering 160 points in size!

"Why are they all so big??", the author asks. Why indeed?! "I decided to make only one size of each font for obvious space reasons and for another equally logical reason, large fonts reduce very well with the brush reduce function of *DPaint II*", comes the reply. I tried this and, yes, most of the fonts do reduce quite well. For desk top publishing purposes, font sizes of between 8 and 100 are quite useful, the smaller fonts for text and the larger fonts for headings and titles.

With reductions to less than 50% of the original size using the brush reduce function of *DPaint*, many of the fonts begin to lose their clarity. Therefore, not all of these fonts are suited to desktop publishing purposes. They are, however, best



sued to desktop video applications which was the author's original motivation for assembling this collection. The large size of these fonts lends them ideally to patterned and colour fills using the abilities of *DPaint* and the colour brushes that come with the collection.

Loading

● A number of problems arise for the desktop publisher when trying to load new fonts into his/her desk-top publishing program. To gain access to the highest quality print they should preferably be PostScripted fonts. Text assembled in PostScript fonts can be downloaded to a PostScript laser printer enabling high resolution print out. Non-PostScript or bit-mapped fonts, such as the ones in this collection can only be printed onto dot matrix, inkjet or non-PostScript laser printers - assuming you can load them into your desktop publishing program.

My attempts to load some of these fonts into *Professional Page 1.2* using the *PPage Any Font* function were met with total failure - either my understanding of AmigaDos and CLI commands is inadequate or this part of *PPage* still has a few bugs. Amiga desk-top publishers are severely restricted in their access to PostScript fonts. Macintosh and IBM users have access to over 300 PostScript fonts via various font packages (although their prices have to be seen to be believed).

Yet the most recent release of the best desktop publishing program for the Amiga - *Professional Page* - failed to contain even one! (This problem can be overcome, however, with the installation of an IBM/Macintosh bridge board and the loading of IBM/Macintosh PostScript fonts into your Amiga - see *PPage 1.2* manual.) Another drawback of the Amiga ("What?! Another one?!") are the problems that arise when you try to change from one set of fonts to another stored on a different disk or directory. To do this, you need a workbench program which contains the "assign" command. *Deluxe Paint II* does not contain this function, a point which is not made clear in the manual which accompanies the font collection under review.

The manual contains some confusing instructions on how to load this function into *DPaint II* using the utilities disk but after numerous attempts, this author gave up and reverted to booting up with *Workbench 1.3* which does contain the "assign" function. The end result was a clumsy procedure of disk changes in order to load fonts from one of the font disks into *DPaint II*.

To load a font from a different disk involved rebooting and starting the whole process all over again. Clumsy, but the product is worth it; access to some pretty amazing fonts. The clip art in this collection is a surprise. It consists of a collection of borders and drawings dating from the 1700's to the late 1920's. The drawings were digitised using a scanner at a resolution of 100 dots per inch (dpi). As a result, some of the patterns are a little fuzzy and need touching up (scanning at 300 dpi would have been better).

Their use as clip art for desktop publishing is probably a bit limited due to the predominantly classical style of the graphics and borders, but there are some beautiful and quite useful

graphics in the collection. To sum up, this collection is worth purchasing for the fonts alone, especially for those of you involved in desktop video.

As a desktop publishing package it can be quite useful. It is definitely the most comprehensive font and clip art collection currently available for the Amiga. There are some points that need clarification in the manual, especially the chapter entitled "Assigning Fonts" and there is a useful tool on the utilities disk that didn't even get a mention - a versatile disk manager which operates like a workbench. The *Masterpiece Professional Font Collection* is an important addition to the limited range of font and clip art collections available for the Amiga user. As interest in Amiga desk-top publishing increases the demand for professional fonts and clip art will increase.

Currently, that demand is going largely unmet. This font and clip art collection goes part of the way in meeting that demand but much more is needed. The *Masterpiece Professional Font Collection* will be available soon from the major Australian Amiga software distributors. A demonstration disk is available to user groups and interested persons for \$5 by contacting Prime Artifax on (02) 817-0011. □

Review copy supplied by Arock Computer Software, P.O. Box 731, Springfield, Missouri 65801, USA.

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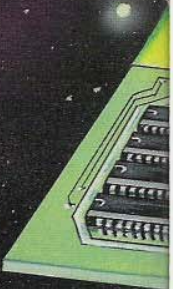
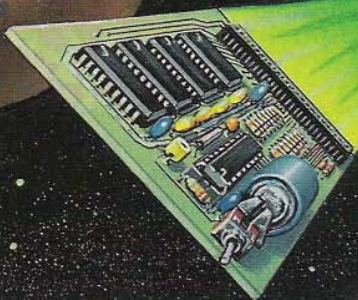
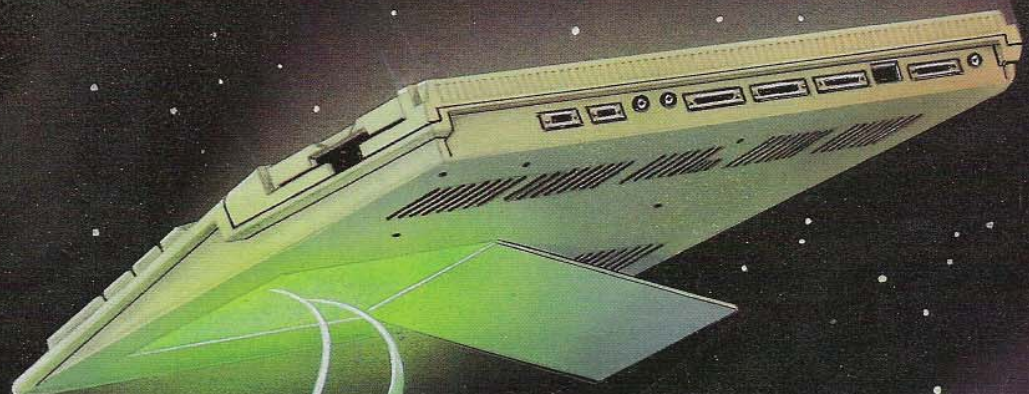
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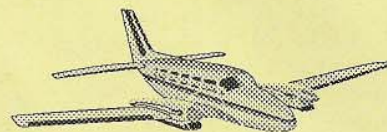
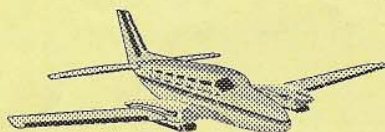
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Pilot's Logbook Program

by Graham Winterflood



Although this new release will not be of interest to everyone as it is aimed at a limited market, it is the first program the author is aware of which approaches this particular subject. The program is specifically designed for use by pilots (or flight engineers maybe?) to keep an updated record of flying hours on disk.

There are two versions available, an 80 column version for the C128 and a 40 column version for the C64.

Pilots are required by law to keep a written record of their flying hours, and a logbook is where this record is kept. The program is not designed to replace the written logbook, it is aimed at making the task of keeping an accurate logbook much easier for the user.

The layout of a logbook is something like a spreadsheet in that it has vertical columns for the entry of flying times under different headings such as IN COMMAND or CO-PILOT. However a pilot often needs to know how many hours he has flown on a specific aircraft type, and this information would not be readily available from a spreadsheet, as times for different types can be spread over many pages in a logbook. The program solves this problem by storing data for each different type in an individual file on disk. Flight times for up to 134 different aircraft types can be stored by the program.

A summary of flying times is usually done at the end of each month, and this is looked after by the program as well.

There are actually two parts to this software. One is an initialization program to set up the necessary data files on disk, and the second is the main logbook program.

Initialization

• The initialization program must be selected in the first instance. This enables the user to type in column headings to match his/her logbook, choose screen colours, and to select decimal format or hours and minutes format. This will be a

useful feature for most pilots, some who will be entering times in hours and minutes, and some who will be using hours and decimals. Once the preferences have been selected, data is entered for each aircraft type.

When all the data has been entered, the main program may then be used to update flying times as required, either on a daily basis or at the end of each month. Instructions which come with the program detail how to set up the data in the first place, and once set up the program is easy to use.

Menu

• Both parts are menu driven, and menu options are selected by moving the cursor over the required option and pressing return.

If the wrong option is selected by mistake, the ESC key (C128) or F1 key (C64) returns to the main menu. There are 16 columns available for flight times represented by 16 boxes on screen, and a separate window is used for flight time entry. Moving the cursor to the right or left enables the user to select the appropriate column, similar to a spreadsheet. When all times have been typed in, the cursor is moved to the exit box and files are automatically updated by the program.

Information available via the menu includes column totals, monthly totals, and individual type totals. A printer menu enables the former totals to be printed out, as well as a list of all aircraft kept on file. A special feature of the program is the ability to alter most of the information stored on disk. For example, the column headings and screen colours may be changed, and the mode may be switched from decimal format to hours and minutes and back via a preferences option. The flight times for an aircraft type may be edited if a mistake has been discovered in previous data, and the column totals will then be recalculated by the program. New aircraft types may be added at any time using the main pro-

gram for data entry.

The only time the initialization program might be used after the first setup, would be to backup a data disk via a menu option, or to format a data disk. Otherwise all data is processed by the main program.

Taken overall, this should be a useful program for pilots of all persuasions, and addresses two problems. One being the drudgery of adding up many columns of figures, especially when they are in hours and minutes, and the second of keeping all the data organized into type totals as well as running totals.

The software has been written in Australia and is available through Roseneath Computers (see advertisement elsewhere) or phone Sydney (02) 520 4190. □

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Educational Software

by Damian Disney

WHEN YOU FIRST heard about personal computers, they were probably mentioned in connection with their educational value. You thought that you would become the new age family, with children to rival Einstein's intellectual capacity. Another year has gone and your youngest child has just failed kindergarten.

Unheard of, nobody ever flunked their first year of school. Things don't look good. What is worse is they hate to read or exercise anything but their rapidly growing bodies. It's time to put the computer to its original well intentioned use, as an educational aid.

In the time you have had your computer(s) how many times have you or your family used it purely as an educational tool? Probably never. You got your first arcade game and you never looked back. Starting with this issue we plan to review educational material on a regular basis to help you fulfill your original intentions for your state-of-the-art acquisition and raise your self-esteem amongst your fellow parents.

It is said that the greatest potential for learning is developed during the first three years of life and hence it would seem that the sooner you start to teach your child to learn the better his abilities will be in later years.

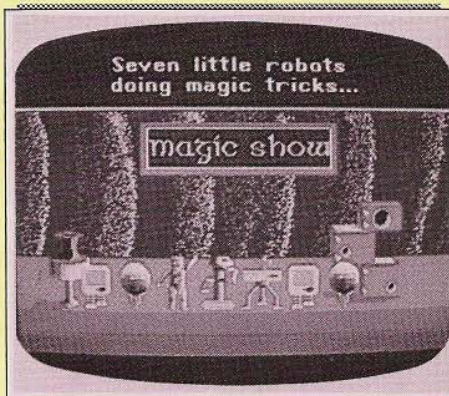
Dataflow supplied us with a few programs from their wide range of educational material. Their software starts with material for pre-schoolers and goes right through to high school. Various programs are designed to improve reading, comprehension, spelling, mathematical skills and logical thought processes. All are designed to add fun to learning whilst being distinctly educational also.

Kinderama

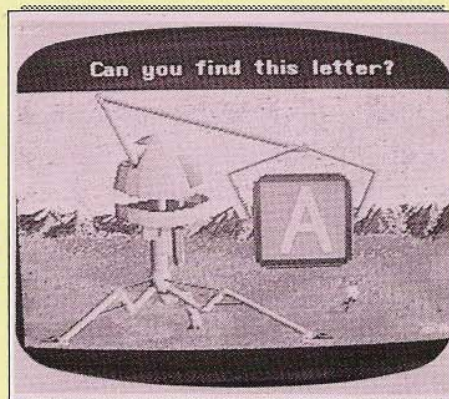
Pre-school to 6

● An early introduction to robotics for the budding young scientist, this program contains the five core subjects for undertaking this course.

Orientation involves "The Robot Story", a futuristic version of ten green bottles that helps the young student understand the basics of subtraction as the robots succumb to a series of misadventures. The child also learns to read the rhyme as he becomes familiar with it.



A random robot generation plant comes into operation for "Count the Robots" - this helps the young one to learn to count up to ten. An amusing yet functional animation for young minds. After three incorrect answers, the correct answer is displayed and the child must type this to continue.



Letter recognition is an essential step in developing reading skills for young children. "Robot Letter Match" helps the

child to use the keyboard to match either upper or lower case letters to those that are displayed on the screen.

Simple addition problems are introduced in "Robot Addition", where up to ten robots trundle on to the screen in two groups and the total is asked for. The benefit of the visual aid is that it encourages the child to understand the question being asked without relying on fingers as calculators, albeit at the expense of sticky fingers on the screen.

"Robot Construction", first steps in cybernetics for young scientists, develops hand-eye co-ordination as an array of monstrosities are put together by H.G. Wellian minds.

Kinderama is a simple yet fun early learning aid that makes excellent use of the graphics capabilities of the Amiga. The sections are short enough too, to keep the attention of young minds and encourage them with favourable comments for correct answers.

RRP Amiga \$59.95

Aesop's Fables

Ages 6-9

● Aesop was the Greek author of the oldest and most famous collection of animal fables, whose aim was to point to a moral or highlight basic human weaknesses and foibles. These simple lessons are used as the basis for reading, comprehension and language skills in *Aesop's Fables*.

The core of the program is 12 of the more common fables such as "The Rabbit and the Turtle" and "The Sun and the North Wind". After selecting a fable, you can choose to either read it or to answer reading and comprehension questions about it. Two or three still frames accompany the fable that keep your attention and add some interest.

After reading the fable you can select either reading questions or vocabulary questions. The reading questions are based on the story that has just been read and help to develop comprehension skills. The vocabulary questions stem

continued on page 42



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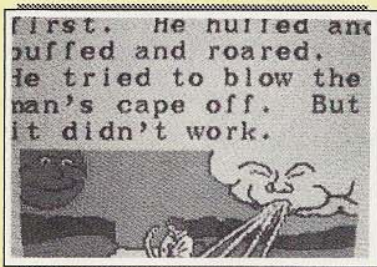
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from words that have just appeared in the story and develop skills in alphabetizing, rhyming, meaning in context, synonyms, antonyms and analogies. There are over 700 questions and answers in all. Plenty for even the most active mind.



Aesop's Spells is an exercise that teaches memory and spelling skills. Sets of pictures are displayed with words and then individual pictures are displayed and its name must be spelt. Spelling Skills is a very flexible module that allows you to either enter a new word list of your own choice, access one you have previously saved or to use one that the computer generates in three levels for beginner, intermediate or advanced. A requester appears asking for how long you would like each word displayed before you are asked to spell it. This along with being able to use your own word list makes it very useful for teaching. For fun and a good deal of mental exercise there is also a memory builder where you match picture to picture, picture to words, words to words and contractions to words.

Aesop's Fables encourages early learners to enjoy reading independently while developing a variety of comprehension and language skills.

RRP Amiga \$69.95

The Word Master

Ages 8-14

● A complete vocabulary building package under the guise of the oriental word master. This program runs through a vocabulary placement test for six grades that recommends a learning level for the student. It then runs into a review of words that are dependent on the results achieved in the placement test. Definitions are also supplied. After this brief review comes the master's vocabulary

challenge where the words from the review must be matched to their correct meaning.

A reward at the end is provided in an arcade style game, the master's maze. A sentence is displayed at the top of the screen with a blank that must be filled in with one of the words scattered through the maze. Selection is made by guiding a little golden Buddha over the correct word.



A worthwhile program particularly with its wide selection of learning levels and logical teaching layout, but limited by not allowing individual spelling lists to be added.

RRP Amiga \$69.95

Spellbound

Ages 6-11, Grades 1-5

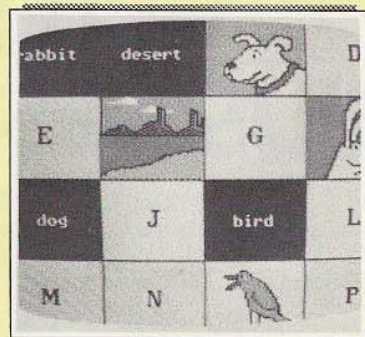
● Right from the outset this program looks, or rather sounds different. This program talks to you in a normal American style voice. Reading the instructions is like an A to Z lesson in phonetics.

Although there are 16 different spelling lists incorporated, *Spellbound* has been designed for you to customize with your own spelling lists. After you enter your own word you ask the computer to say it and it spells out phonetically how it has said it. Obviously it doesn't sound the way you would say it, so it needs to be altered to sound correct. Not so easy if you have ever explored "say" on your extras disk. Help comes though from a phoneme chart in the pull down menu that covers vowels, diphthongs and consonants. According to the instructions you should get a good handle on it all in a day or so!

Even with all the help provided it could take you an hour or so just to enter ten words from your child's spelling lists. Realistically then it is best to make use of the programmer's blood, sweat and tears and use one of the premade lists. From this range there are well over 1000 words already nuzzled out phonetically.

Teaching is done by three programs: Mix-it, Match-it and Spell-it. Mix-it has a jumbled word that needs to be re-typed correctly. Match-it asks you to match the spoken word to one of three possible choices. Spell-it requires you to spell the word spoken by the computer. This last one is quite difficult because the sound is sometimes not articulate enough to understand the word spoken. Particularly frustrating when you're racing against the clock for "top honours".

Spellbound is a great idea that attempts to utilize the very innovative feature of computer speech as a teaching aid. The word lists, however, need more work to give them the same polished sound as the program's requester voice. Your talking with your children is still the best way to teach them to speak properly.



The range of software for educational purposes is quite large although not widely advertised. Much of the material goes unnoticed in shops, being eclipsed by games or not carried at all because of not being best sellers. If you want your children to get more real value out of your home computer then try getting them a constructive game rather than a destructive one next time. □

Our review copies came from Data-flow (02) 331 6153. RRP Amiga \$59.95.

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Local software

by Tim Strachan

Please write in or phone and let us know if you, or anyone you know, has an original program you'd like us to review, as we'd like to let others know about Australian software. There must be more out there, and you have to let people know about it. Call (02) 9593692 or write to: P O Box 759, Crows Nest, 2065.

Noerrors V. 1.0

● Many Amiga users round Australia would have used programs by Nic Wilson, particularly his NOVIRUS program, one of the earliest and best virus-killer programs, still available as a commercial product (see below). Nic's latest program, NOERRORS, was designed to find and hide physical errors on a floppy or hard disk. A physical error is what gives rise to the "Read/Write Error" message in AmigaDos, and is often a sign that the disk is dead and headed for the trash can.

NOERRORS, when run, will let you format the offending disk from within the program, and will find the problem areas, allocate them to a special file, thus hiding them from Amigados. The rest of the disk should then be usable, a boon for anyone short of disks or unable to afford a constant supply of them. A further capability of the program is that it can perform the same function on a hard disk, particularly useful for those hard disks which are not set up to map the errors on the disk to undamaged areas - in such a case, you've got a problem, which is solved by NOERRORS. Use of the program is fully mouse-driven, with a single screen and a logical, intuitive lay-out. Use it and save money in new disks.

Novirus

● After the release of Novirus in various Megadiscs, the program was released in an updated version as a commercial product. Fully written in

Machine Language and refined over a period of nearly two years, this is a complete anti-virus/utility program, with regular updates to "brain files" (as new viruses are found and incorporated) available free if you send in a disk, or if you get the latest Megadisc.

The program does all you need in the way of virus protection, and does it in an intuitive way, with built-in help messages, automatic display of boot-blocks and other information, and all operations are via the mouse. Extra utilities in the program include: the ability to "grab" and "restore" boot blocks (such as those for games); installing custom bootblocks on disks to autoconfigure non-autoconfigure ram, or to turn off such ram; ability to view memory at any location; installation of a custom "scrolling" bootblock, which, if it disappears, lets you know that something nefarious has happened, and quite a bit more.

I'm told that by about the end of October, Version 3.0 will be released, fully rewritten and with support for hard disks, meaning it will be able to find any "link" viruses and any possible boot-block damage. It will be sold at the price of \$39.95, and there will be a nominal update fee for registered users. There will be a complete manual. If you have any suggestions for further additions to the program, please write to Nic Wilson at the address below.

Review copies from Nic Wilson Software, C/- 138D South St, Toowoomba, 4350. Tel: (076) 358539. Noerrors: \$30.00, Novirus: \$39.95. □

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MACRO'S

- A tutorial on C64 keyboards

by Paul Dwerryhouse

Just what is a macro? Well, it's basically a set of predefined keystrokes that a computer can re-perform. Many Apple and IBM wordprocessors use them, however I have yet to see a Commodore wordprocessor that does.

TYPE IN THE program at the end of this article, which will give your C64 a macro, and can be defined by you. Don't forget to save it! I just had a nasty experience with someone turning off our power whilst three-quarters of the way through this article. Needless to say, I forgot to save it, and lost the lot. Finally type RUN.

If all is well, there should be a pause, and the computer will come up with DATA LOADED and a red border. If there is an error, check all lines carefully.

The macro really acts like a tape recorder with no rewind or fast forward buttons. To start recording keystrokes, press Control-z.

Type in the keystrokes needed (there is a limit of 255) and finally press control-x to stop recording (the border will turn red again). To play back the keystrokes, just press F1. For example: Press control-z, and then type LOAD"s",8 [RETURN]. Now type LIST [RETURN] and press control-x. Press F1, and the border will turn yellow, and the computer will print up LOAD"s",8 and the disk drive will whirr, loading the directory.

The computer will print LIST and the directory will be listed to the screen. Note that Basic will operate normally throughout all three modes: Normal (red border), Record (green border) and Playback (yellow border). If you don't like the colours that I have chosen for each mode, then just poke a number between 0 and 15 (inclusive) into the following locations:

Normal mode - 52037
Record mode - 52077
Playback - 52174

You may even be able to use this macro with commercial programs, however I doubt it will work with *Easyscript*. Try it anyway, because you never know.

If you have hit RUN/STOP-RESTORE, then type SYS 52000 to restart the macro. Any keystrokes in memory will still be retained.

How it works

● The start of the program just directs the Interrupt vector so that 50 times every second the computer will jump to location 52024 (\$CB38), where my program is situated. The beginning part also prevents all keys apart from the cursor keys from repeating when held down. This is done by placing a zero in location 650

In Basic:

POKE650,0 - Only cursor keys repeat
POKE650,64 - No keys repeat
POKE650,255 - All keys repeat

At 52024, the computer first checks what mode it is in, by way of a flag at 52023 (\$CB37). This holds either a 1, 2 or 3, corresponding to normal, record and playback modes respectively.

If it isn't a 1, it will jump off to routine two. More about that, later. Now, the computer will set a counter to zero, colour the border red, and will take a look at location 215, which holds the ASCII value of the last key pressed. This value is then compared with the value 26 (which is the ASCII code of control-z). If the same, the flag location is stored with a two, which stands for the record routine, and the computer will jump off to \$EA31 (the real interrupt routine). If the value is a 133, then the key pressed has been F1, and the flag is stored with a 3, which means playback. If neither of these, the computer just jumps straight to \$EA31.

In the record routine, the computer firstly checks the flag. If the number held here is not a two, then the computer skips on to the playback routine, which is outlined further on. If the number is a two, the border is coloured green, and the computer checks location 197 (\$C5). The number returned here stands for the key currently being pressed - but the code is not in ASCII, and it cannot distinguish between unshifted, shifted, com-

modored or controlled keys. The codes are as follows:

A	10	1	56	F1	4
B	28	2	59	F3	5
C	20	3	8	F5	6
D	18	4	11	F7	3
E	14	5	16	=	53
F	21	6	19	,	47
G	26	7	24	.	44
H	29	8	27	/	55
I	33	9	32	NO KEY	64
J	34	0	35		
K	37	[RET]	1		
L	42	[DEL]	0		
M	36	[HOM]	51		
N	39	[CDN]	7		
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S	13	+	40		
T	22	-	43		
U	30	\	48		
V	31	@	46		
W	9	*	49		
X	23	^	54		
Y	25	:	45		
Z	12	;	50		

This number is then compared with the number returned last time the keyboard was checked by this routine. If they are the same, then the key has not yet been released, so the routine jumps out, back to basic. If different, this value is then stored for next time, and the computer then checks this value to see if it is 64.

This means no key is being pressed, and the computer jumps out.

Otherwise, the computer moves on to the decoding routines. This is explained here:

In kernal memory (\$E000...\$FFFF) there are four tables set out in order of the codes outlined in the table above. The tables show what ASCII value should be printed when certain combinations of keys are pressed; for example, B and shift, or H by itself.

The tables are:

Unshifted - 60289...60353
Shifted - 60354...60418
Commodore - 60419...60483
Control - 60536...60600

Just before these tables are checked out, location 653 is examined. This returns a value stating which combination of shift, commodore and control keys are being pressed: 0 means none, 1 means shift, 2 means commodore, 4 means control. A 7 (4+2+1) means all three.

Supposing the value in 653 was zero (no shift) and the value in 197 had been 31. This would mean that the program

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would check the 31st location of the first table (the unshifted table). This location is 60320, and the value held here would be 86, and this is the ASCII code of V.

It is also possible to use these tables to redefine the keyboard.

First the Kernal must be moved from ROM into RAM (this is just a sidetrack; you don't need to do it for the macro program):

```
10 FORX=57344TO65536
20 POKEX,PEEK(X)
30 POKEX-16384,PEEK(X-16384)
40 NEXT
50 POKE1,PEEK(1)AND253
```

After running this, type POKE 60299,66 and try pressing the A key. It should come up with a B! To return to normal type POKE 60299,65. The value 60299 is determined from 60289 (unshift table) + 10 (code from table above for A). 66 is the ASCII code for B, and 65 is ASCII for A.

It is possible to use this technique to change the keyboard to the DVORAK layout, rather than QWERTY, or the German QWERTZ where Y and Z are interchanged.

But back to the program. The computer now checks the new ASCII value to see if it's 24, which would mean control-x. If so, the computer puts a one in the flag location, which means go to the normal mode. Otherwise, the current ASCII value is stored somewhere after SCBEF, depending on the value in the counter mentioned earlier in the article. Then the counter is ad-

```
8 printchr$(147)chr$(5)tab(7)"Macro,"
9 printtab(7)"by paul dwerryhouse":print
10 print:print: for x = 52000 to 52207
20 read y : pokex,y : a=a+y
30 next
40 if a<>27228 then 500
50 print"data loaded"
60 sys52000
70 end
100 data 120,169,56,141,20,3,169,203
110 data 141,21,3,169,1,141,55,203
120 data 88,169,0,141,138,2,96,0
130 data 173,55,203,201,1,208,38,160
140 data 0,140,99,203,169,2,141,32
150 data 208,165,215,201,26,208,8,169
160 data 2,141,55,203,76,49,234,201
170 data 133,208,5,169,3,141,55,203
180 data 76,49,234,0,0,173,55,203
190 data 201,2,208,97,169,5,141,32
200 data 208,165,197,205,100,203,240,64
210 data 141,100,203,201,64,240,57,170
220 data 172,141,2,208,6,189,129,235
230 data 76,162,203,192,1,208,6,189
240 data 194,235,76,162,203,192,2,208
250 data 6,189,3,236,76,162,203,189
260 data 120,236,201,255,240,18,172,99
270 data 203,192,255,240,14,201,24,240
280 data 10,153,239,203,200,140,99,203
290 data 76,49,234,169,0,153,239,203
300 data 169,1,141,55,203,160,0,140
310 data 99,203,76,49,234,169,7,141
320 data 32,208,172,99,203,185,239,203
330 data 240,13,166,198,157,119,2,230
340 data 198,238,99,203,76,49,234,169
350 data 1,141,55,203,76,49,234,0
500 print"error in data"
```

vanced one. If it equals 255, then the routine ends as if control-x were pressed.

Now onto the playback routine. First the border is coloured yellow, and register Y is loaded with the counter. If this is the first time into playback, then the counter will have been reset to zero. Then the computer goes through each location from SCBEF onwards, using the counter. Each interrupt it does one character. The Accumulator is loaded with the ASCII of one character, and location 198 is looked at. The number held here represents the amount of characters currently in the keyboard buffer, which resides from 631 to 640. So the computer will place the character into location (631 + contents of 198) and then increments location 198 by one. In simple terms, this places a letter in the keyboard buffer, and the computer is tricked into thinking that a key has been pressed.

Finally, when a zero is encountered in memory, the routine ends, and goes back to normal mode by putting a zero in the flag (SCB37).

Summary of locations:

215	- Last key pressed (in ASCII)
197	- Current key (not in ASCII)
198	- No. of chrs in buffer
631...640	- keyboard buffer
650	- Repeat keys flag
653	- Shift/commodore/control comb
60289...60600	- Keyboard tables

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Assembly Language Tutorial

by Oben Candemir

Welcome to the first of a series of articles on assembly language programming.

IN THE PIONEERING days of computers, programmers would type in long sequences of 0's and 1's in an effort to conquer the electronic circuitry of the first bulky computers. Although this practice has long been obsolete some programmers still subject themselves to similar ordeals these days by opting to program in assembly language. Why? Because it's such a thrilling experience to control the innards of the computer at the lowest level!

Higher level languages insulate the user from the bare bones of the Amiga. Although this offers 'user friendliness' it deprives one of the remarkable control available of the computer's memory, and resources. The decision to program in assembly must be a carefully weighed decision though. I know that I'll never go back on my decision, as I have tasted the power of assembly.

Let's now see what makes assembly language work and what assembly language is.

At the most basic level the 68000 of the Amiga receives at the rate of 7 Mega-Hertz a series of 0's and 1's and acts on those according to pre-hardwired instructions. It is remarkably good at doing this, in fact that is the only thing it can do. Then what about the instructions like PRINT and PRINTF which the computer uses in Basic and C?

What happens here is that these instructions are interpreted or compiled into the 0's and 1's and only then can it be processed.

This may seem funny as Assembly language too is compiled (actually called assembled) and then run; why then is it so fast and compact? The answer is that the insulation which higher level instructions provide bring with them the penalty that one instruction may translate into 15 or more equivalent assembly language instructions. This means big code size and

slow run time. In contrast assembly language instructions are one for one with the CPU's own language ie. binary code.

As assembly language programmers you are going to require a detailed understanding of the Amiga's memory. This is because assembly language is mostly about moving values to and from memory locations. Before elaborating too much on this let's look at the Amiga's memory.

RAM - Random Access Memory

● For the Amiga to be able to do anything RAM memory must be present. RAM allows values to be put in and later withdrawn from it. The characters in a Word Processor, the graphics in a game are all stored in RAM.

RAM is a temporary memory storage though. It is cleared when the Amiga is turned off. To load something in to the RAM in the first place requires a program to be present in the Amiga even when it's off. This program is stored in ROM.

ROM - Read Only Memory

● The ROM holds all the information and programs required to operate the basics of a computer such as loading the Workbench, Kickstart, Windows, etc. The 'personality' of the Amiga is stored in the Kickstart ROM or in the case of the A1000 ...

WOM - Write Once Memory

● Only the A1000 has this peculiar form of memory. At switch on time, the A1000 beckons the user for a Kickstart disk. The ROM contains a program to

read data from the Kickstart disk to this memory. After this it acts like ROM in that it cannot be written to. Actually this is like RAM which is locked once it has been written to once.

Registers - the CPU's own memory

● The 68000 is connected to the RAM and ROM memory via the 'BUS'. The Bus is driven by a digital clock, and it is this which determines the speed at which the 68000 can access memory. There is always some delay in this transfer of information the bus performs, as every device and component is attached to the processor via the bus. However the 68000 has general purpose data and address registers which it accesses at full speed.

More about this later, suffice it to say that these registers are also able to store values and most of assembly language is about managing these registers.

BUS - a little more information

● The 68000 chip is a 16/32 bit hybrid chip. Which means that it can process 32 bit long binary numbers but can access them from memory only 16-bits at a time. So it would get a 32-bit number in two fetches. The Bus of the Amiga is 16-bits wide and runs at 7.16 MHz.

Memory is commonly measured in sizes called KiloBytes. A kilobyte consists of 1024 bytes and not 1000 bytes as some people may think. This is because of the binary system in which the computer operates (more on binary later). Two raised to the 10th power gives 1024. Each byte of memory is in turn divided into 8 bits. Now these individual bits can be either ON or OFF depending on whether it is supplied with electricity or not. Let's call these two states 1 for ON and 0 for OFF. Now because each can be only in one of two states a byte is able to hold $2^8 = 256$ different values. The 512K memory of the Amiga has actually $512 * 1024 = 524288$

continued on page 52

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bytes. And therefore has $8^{524288} = 4194304$ bits. Because of this, memory can have $2^{4194304}$ different combinations which means ENORMOUS POSSIBILITIES!!! Double it for 1 Meg !!

Memory is commonly referred to as such:

- Bit** - Basic component of memory. 1 or 0 state
- Byte** - 8 bits
- Word** - 16 bits or 2 bytes
- Long Word** - 32 bits or 4 bytes

Now that we have explored the memory let's talk a little bit about the different number systems we'll need to be totally fluent with. These are Binary and Hexadecimal.

The decimal number system is commonly used by everyone because of certain quirks in history. Leaving this aside the assembly language programmer must be fluent at other numbering systems.

The first being binary. A number such as 427 in decimal is made up of three digits which represent $(4 \cdot 10^2) + (2 \cdot 10^1) + (7 \cdot 10^0)$.

The decimal system offers a selection of ten digits ie. 0 thru' to 9.

The binary system

● The binary system offers only two digits namely 0 and 1. Therefore a number like 10110 would represent:

$$(1 \cdot 2^4) + (0 \cdot 2^3) + (1 \cdot 2^2) + (1 \cdot 2^1) + (0 \cdot 2^0) = 16 + 0 + 4 + 2 + 0 = 22 \text{ decimal}$$

In assembly language a binary number is preceded by a % percentage sign so that our previous example would be %10110.

Let's try another one. The easiest way is to divide the digits into columns like this:

A single Byte								
Value	128	64	32	16	8	4	2	1
Digit	8	7	6	5	4	3	2	1

Our number therefore would fit in like this:

0 0 0 1 0 1 1 0

Adding up the values which are 1 we

get 22 as before.

The hexadecimal system

● Probably the most important system. This is the Base 16 numbering system. However, this time we are faced with a problem; we know what the first ten digits will be ie 0-9 but how about the other 6 digits? We represent these by the letters A, B, C, D, E, F.

Thus we'd have:

Decimal	Hexadecimal
0	0
1	1
..	..
8	8
9	9
10	A
11	B
12	C
13	D
14	E
15	F

The dollar sign \$ represents a hexadecimal number. As before we convert hexadecimal to decimal by using the columns trick. Let's take an example. \$6D would be:

$$(6 \cdot 16^1) + (D \cdot 16^0) = 96 + 13 = 109$$

Note: D = 13

Or in columns:

	A Word			
Value	4096	256	16	1
Digit	4	3	2	1

However in this case we multiply the digit by the value to get the right answer. Try the above number in the columns as an exercise.

To convert hexadecimal to binary is easy. Split the hexadecimal number up into its components.

Number	- \$6D
Components	- \$6\$D
Binary	- %0110 %1011
Combined	- %01101011

The opposite ie. to convert binary back to Hexadecimal is easy as well. Break up the binary number in to 4's and convert individual parts into hex digits and combine.

OK, so we've looked over the number systems and other details of assembly programming. When are we going to see the actual commands? Not yet! In order to effectively program the Amiga a whole load of other things must be learnt. Included in this is the configuration of the Ami's memory. Although we've looked at memory generically we haven't gone into the Ami's memory configuration. Let's see this as well:

CHIP RAM: The chips which support the processor ie. the three custom chips Fat Agnus, Denise, and Paula can only access the lowest 512K of RAM because of their design (largely due to the costs of a wider address bus). They work independently of the CPU and therefore greatly ease the processor's workload. The disadvantage is that any graphics and sound must be stored in this memory to work. We'll see later why this is a problem. Suffice it to say that this lower 512K has been termed Chip RAM.

'FAST' RAM: The RAM apart from the Chip RAM, if any, makes up this. It is called 'fast' because only the processor has access to it exclusively. Meaning that the BUS is comparatively faster here.

The Amiga's memory looks like this (note all numbering is now in Hexadecimal; if one thinks in hexadecimal and gets used to it, then there is no real need to convert back and forth between decimal and hex, SO THINK HEXADECI-MAL):

\$000000 - \$07ffff	- Chip RAM
\$080000 - \$1fffff	- Reserved for future expansion.
\$a00000 - \$beffff	- Ditto
\$bfd000 - \$bfdfff	- CIA Port A & B registers.
\$bfe001 - \$bfef01	
\$c00000 - \$dfefff	- Potential FAST RAM
\$dff000 - \$dfffff	- Custom Chip Hardware Registers.
\$f00000 - \$f7ffff	- Reserved
\$f80000 - \$ffffff	- System ROM - Kickstart

Now you may ask why the Amiga can't access locations above \$ffffff - the last address used on the Amiga? The reason is that although the 68000 is a 32-bit hybrid chip and can process 32-bit numbers its ADDRESS BUS is only 24-bits wide and therefore the last address is \$ffffff. This means that the Amiga can only have a maximum of 16 Megabytes of total memory. As an interesting sidenote the 68030 which has a full 32-bit address bus can access a total of 4 Gigabytes!

I just hope that you're getting the hang of hexadecimal and the concept of memory locations. So there we have it; the first Assembly Language tutorial is almost finished. As a last point I just want to say that any effort you use now to learn will be heavily paid back in full when you are writing assembly programs which kill their C counterparts by leaps and bounds! Till that time let's just sit back and learn ...



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The Mega Entertainment Section

Edited by Phil Campbell

That's Entertainment

A round-up of this month's entertainment news and views.

Challenger Remote Control Joystick

● I have just started testing the new Challenger Infra red remote control joystick. We've been controlling our video recorders with infra red transmitters for years - why not our computer games? First impressions are good - the stick itself has a comfortable grip and a positive click action.

A mouse-shaped receiver unit sits on top of your monitor, and picks up the joystick signal from up to 5 metres away. Everything works well, and the freedom to move around while you play is great. My only reservation is the speed of the auto-fire option, which seems a little slower than some hard-wired controllers. Even so, at only \$59.95, this baby is a steal. Contact H&R Wholesale on (02) 897 1044, for further details.

New titles

● Just in from Questor is the amazing 3-D Pool. I always wanted a pool table,

and this is about as close as I'll ever get. Looks excellent - instead of walking around the table to line up your shot, you just click on your mouse and the table spins smoothly around. Full review next issue.

Mindscape are expecting the first shipment of *It Came From The Desert* any time now - this is the latest Cinemaware title, and overseas reaction already guarantees it will be a real block-buster. Based on the typical B-grade Sci-Fi movie featuring marauding giant ants and other goodies, I can hardly wait to see it.

Still no news from Ozisoft. Maybe one day when they've settled into their new offices somebody might give me a call and let me know what's happening!

Rainbow Warrior, the first greenie game ever, is looking good. I've only had time to have a brief look - first impression is that the manual might even be printed on recycled paper. It's got that typical brown smudgy look.

Seriously though, there's plenty of game for your buck, with six game mod-

ules that all look pretty difficult. More details next month.

Screen-7 is a new name on our shores - this new label is being imported by Mindscape, and promises "great gameplay, and exceptional value for money." *Jaws* and *High Steel* are the first titles - *Jaws* looks good, but I couldn't figure out *High Steel* for the life of me. Both are on their way to more intelligent reviewers, so you will find out what they think soon.

Feds bust software pirates

● Software pirates watch out! Federal Police recently closed down an illegal Brisbane software duplicating operation and confiscated 20 Amigas, as well as a pile of software and other equipment. One software distributor has already been asked to identify their titles among the confiscated material. Seems that it was almost all Amiga games - so beware of those sleazy classified ads offering "latest Amiga software" for \$5.00. And congratulations to the Feds - they carried out the entire operation on their own initiative. □

Letters to the editor

Public Domain games

● When are we going to see reviews of the better Public Domain games? Also, how about scoring each review with points for graphics, sound, playability and value for money? It would also be good if you could include the price and year of manufacture.

John Noble,
Normanhurst, NSW

We always try to include pricing information with every review - sometimes we slip up! Year of manufacture is not a bad idea, but generally it's safe to assume that we are reviewing the newest and best games available. As to awarding points, the main problem is getting some level of consistency between reviewers - it ends up being very arbitrary. Anyway, I'll give it some thought. Your request for a review of Public Domain games is hereby granted ... see next issue.

Hints on Dragon's Lair

● Would you please forward a hint sheet for *Deja Vu*. Meanwhile, success with *Dragon's Lair*. The Princess has been saved! A "How To" sheet is enclosed.

Ted Albert
Sydney, NSW

*Thanks Ted. I trust your *Deja Vu* hint has arrived already. I think we'll split your mega-detailed four page solution to *Dragon's Lair* over the next few issues.*

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Amiga Hints and tips



Dragons Lair

● Ted Albert has saved the Princess in Dragon's Lair - not only that, he's sent us a detailed account of how he did it. Here's how to get through Disks 1 and 2.

First, Ted recommends that you use the numeric key pad rather than the joystick - control is far more positive. Use the "0" key to slash, "2" to move down, "4" for left, "6" for right and "8" for down. Now follow these instructions ...

Drawbridge

● When snakes lunge, SLASH with sword. While Dirk's sword is slashing, go UP through the hole.

Poison Chamber

● When door flashes, go RIGHT out the door.

Drawbridge

● As before.

Disk 2

● Crumbling paths and snake chambers - two of each in either order.

Crumbling Paths

● When path flashes, jump towards flash (either LEFT or RIGHT)

Snake Chamber

● If door is on right, move clockwise as follows: When snake appears from ceiling, SLASH. When cabinet flashes, go UP to cabinet. When door flashes, go RIGHT to the door. BEFORE stairs flash, go DOWN to stairs. AS Dirk walks towards the stairs, go LEFT onto the bench.

AFTER Dirk lands on the bench, go UP and out. If the door is on the left, go the other way after the slash - ie, UP, LEFT, DOWN, RIGHT.

Watch out next month for Disks 3 and 4. And thanks to Ted for his efforts.

Michael Scanlan says that he finds the hints and tips section very helpful.

He's kindly donating a few of his own ...

Ikari Warriors

● Type "Freeride" on the high score table for unlimited lives and ammunition.

Thunder Blade

● Type CRASH at the helicopter scene and press the HELP key to skip a stage.

Test Drive

● Keep the fire button pressed while going round the corners.

Better Dead Than Alien

● Use the following Sector Codes to start at higher levels ...

Level 4 - Plug

Level 5 - Mayonnaise

Level 8 - Potato

Level 9 - Woomera

Level 15 - Jabberwocky

Level 19 - Tiddly Pom

Level 22 - Euphemism

Level 25 - Quarantine

Michael included a few more, but I don't want to spoil all your fun! □

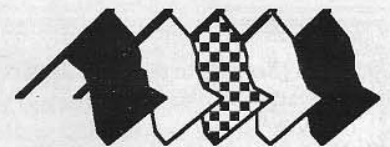
Commodore 64 hints and tips



● Chris Byrne, of 29 Opal Street Mt Isa, Qld 4825, is keen to swap C-64 tips by mail. He sent us the following samples from his huge collection of Pokes -

Beyond The Ice Palace

● Reset the computer, then POKE 5918, 173 [Return] for infinite lives, POKE



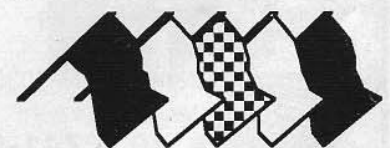
High Scores

Amiga

Arkanoid - 976,548 Kamikaze Andy
Bubble Bobble - 1,009,000 M Scanlan
Denaris - 53,900 Peter Evans
Dragon Ninja - 105,030 R Zagami
Double Dragon - 116,204 R Zagami
Gee Bee Air Rally - 307,466 Kamikaze Andy
Hybris - 947,818 Kamikaze Andy
ISS - 1,420,450 G Smyth
Karate Kid II - 41,336 Owen Webster
Leatherneck - 83,300 Owen Webster
Major Motion - 50,658 Owen Webster
Menace - 996,481 Kamikaze Andy
Mindwalker - 306,214 P Schumacher
Mousetrap - 10,120 Craig Webster
Operation Wolf - 344,800 John Boyle
Outrun - 3,053,976 R Zagami
Offshore Warrior - 626,345 Jacob Booth
Pacmania - 556,280 Ian Malcolm
POW - 106,065 R Zagami
Sidewinder - 385,800 Ian Malcolm
Silkworm - 336,000 Luke Tattersall
Speedball - 10,335 GS and PS
Starwars - 2,296,786 Ian Malcolm
Sword Of Sodan - 364,750 Kamikaze Andy
Test Drive - 96,841 Michael Scanlan
Tetrix - Level 100 Luke Tattersall
Typhoon - 54,255 Owen Webster
Whirligig - 7,428 Jonathan Scowen

Commodore 64

Bangkok Knights - 36,800 N Van Heeswyk
Bubble Bobble - 590,690 Chris Byrne
Fast Break - 136 to 9 Chris Byrne
Handball Maradona - Level M N Van Heeswyk
Int. Karate - 113,700 N Van Heeswyk
Operation Wolf 98,500 Chris Byrne
R-type - 548,310 N Van Heeswyk
Robocop - 82,250 Tim Lockwood
Street Fighter - 127,050 Chris Byrne
Target Renegade - 330,450 Chris Byrne



RVF

HONDA

Phil Campbell jumped into his tight-fitting red leathers to file this report on RVF Honda ...

MY WRISTS ARE cramped, my backside is sore and I am in last place. The bike in my rear vision mirror has already passed me twice.

What can I say? My Honda RVF 750 is a purpose-built racing machine, with ultra lightweight pistons and valve gear, titanium conrods and four 34mm venturi Keihin constant vacuum carbies. But I'm losing anyway.

This is *RVF Honda*, an impressive new Amiga motorcycle racing simulation. The action is fast and furious, the technical details are precisely accurate, and the game is lots of fun to play.

When the game has loaded, you are offered a number of options - choose a rider, choose a track, practice or race. As usual, I left everything exactly as I found it and got straight into the action.

The lower section of the screen displays the instrument panel of your bike - speedo, tacho and temperature gauge, with a digital display showing the current gear. The track is shown in the upper part of the screen. On the Amiga version the scenery is nice, but my racing career would be looking a lot better if there weren't quite so many trees beside the track. I have hit them all at least once.

Your Honda is joystick controlled - not a method I would try in real life, but effective enough for now. Pushing forward on the joystick opens the throttle; the longer you keep the stick forward, the harder the RVF will accelerate.

To change up a gear, simply press the fire button while you accelerate. To change down, press while pulling the stick back. This is a simple enough procedure, but timing is all important. The optimum time to change up is when the rev needle enters the orange section on your tacho. Be careful, though. After one or

two spills your instruments may well stop working. From then on, it's a matter of playing it by ear.

Races start with a crowded field. To do well, you really have to get to the front right at the start and stay there. No mistakes, no spills, not even a sideways glance. The guys you are racing against are robots, computer controlled, and they don't put a foot wrong. If you lose your early advantage, you may as well press the "ESC" key and throw in the towel.

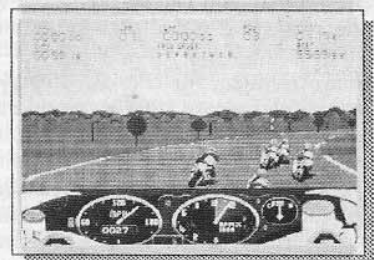
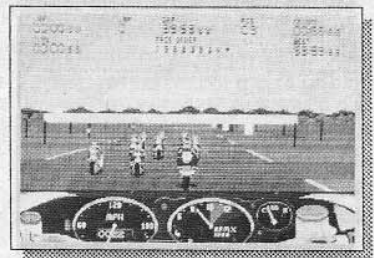
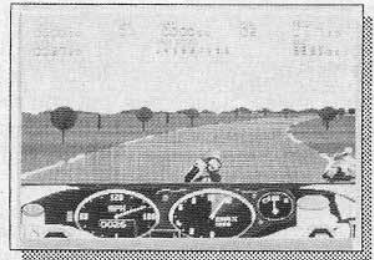
There are 24 tracks, graded according to difficulty. I guess I will never see Donington Park or Hockenheim - these courses are reserved for the World Championship. Detailed League statistics are maintained on the game disc, together with championship and lap record tables. Here is my only claim to fame - I now hold the course record for Tetbury. I clocked 1:01:72 for the 2.82 km track, shaving almost four seconds off the previous best. So why can't I win a single race?

RVF Honda is a top-class game. If you like the thrill of speed, the sound of high revving engines and the smell of burning rubber, then you are bound to be impressed. Animation is excellent, with a lot of cute little details - if you stop midway through a race, for example, your red-leathered rider steps off the bike, shakes his head and checks the throttle control. Crash sequences are good too - your bike and rider spiral through the air and land in a convincing heap.

Sound effects are realistic, with engine sounds digitally recorded from a genuine RVF Honda. As a final touch, a special Datalink cable lets you play the game with a friend. Not by modem, unfortunately - the cable is connected to the

parallel port, so the two computers must be side by side. Even so, it sounds like a lot of fun.

Distributed by Questor (ph 02 662 7944) *RVF Honda* has a recommended retail price for the Amiga of \$49.95, a small price to pay for a simulation of one of the most expensive motorcycles in the world. All that's missing is the wind in your face. □



AMIGA

Techno Cop!

In spite of losing his appetite, Richard Silsby decides that TECHNO COP is not a bad game ...

THINGS CHANGE. BABIES are born, people die, new generations grow up and continually make adjustments to society. But there's one institution that has weathered the storm. The Humble Policeman is still with us, even if the days of pounding the beat are almost over. Today's cop moves fast - travelling in the fastest machines money can buy.

Even in the future they'll still need cops. Here is your chance to try on the shoes of a policeman and see if you're fit to hold that shiny gold shield. Being a policeman is always dangerous, but you are stepping into the unknown as we transport you into the future to take up your new posting as The Techno Cop.

You begin your new life as an Enforcer, part of an elite crime fighting force dealing with the scum of society. You are equipped with the latest crime prevention equipment. At your disposal is a computer wrist watch, a criminal radar, a net gun and also a .88 magnum pistol. Eat your heart out, Dirty Harry!

In keeping with tradition, a suitable mode of transport has come your way. It is the Vmax twin turbo Interceptor.

Your mission is to destroy a criminal gang called Death On Arrival (D.O.A).

You have to thwart their attacks on the road so that you can arrive safely at the scene of a crime and apprehend criminals.

When driving, your console displays your speed, revs, score, gear lever, operative level, and most importantly your crime computer. This tells you the distance and projected time of arrival at the scene of the crime. Information about the particular crime is provided, together with the mode in which you will retrieve the criminal - either Dead or Alive.

Along the way you'll come across other members of the deadly gang who will try to put you off the road. You will either have to outrun them, or try to bump or shoot them off the road. At the begin-

ning you have a machine gun mounted to the car, which will come in very handy. As you apprehend criminals you will be rewarded with extra features for your car. Useful things like a turbo charger which when attached hangs out the back of your car, and hydraulic wheel rams can be added to help you bump off the D.O.A.'s. Later you can get a high powered cannon, and finally some nuclear bombs to settle the score once and for all.

Arriving at the scene, you leave your vehicle to go in search of the assailants. To help in your search you can use your computer wrist watch, which has the position of the assailant locked into the radar, a mug shot of what the fiend actually looks like, a life and health counter, and a crime clock.

Watch out though because while in the buildings other gang members will try to stop you passing with the aid of whips, axes, knives, and hammers. It will take all that you have to defeat this bold enemy.

If you get to the crime scene and capture or eliminate a criminal within the allotted amount of time, you gain a life, receive a promotion, get extra parts for your Vmax and score points. It feels good, too.

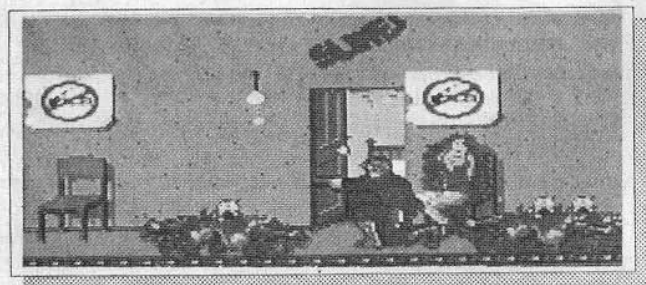
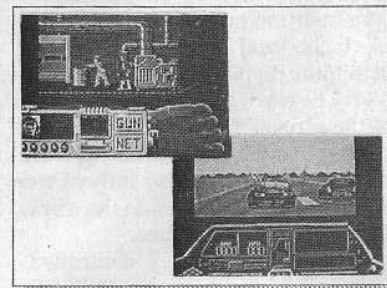
Techno Cop is an old idea that has been presented well. There are a few



turn-offs, though, the main one being how your victims die. If they are shot, they almost explode in blood as they are falling to the ground - which could quite easily turn you off your dinner. This is one game I won't be showing my little sister!

Review copy from OziSoft
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★ SNOW ★ STRIKE™

Life imitates art. Or is it the other way around? PHIL CAMPBELL considers this, and other philosophical questions as he steps into his F-14 to check out...

NEW YORK, THURSDAY: The United States is today preparing to send troops into the main cocaine-producing countries of Latin America in an effort to stop the flow of drugs across borders. In Colombia, US troops will work alongside local government enforcement teams. Meanwhile, a joint Peruvian American anti-drug force has launched an air offensive against cocaine traffickers in Peru...

CALIFORNIA, Friday: Leading American software house Epyx today released *Snow Strike*, a game featuring solo air strikes on South American drug operations. Simulated F-14 fighter jets fly 10 different missions against Colombian cocaine kingpins in a variety of weather conditions. *Snow Strike* is available for Commodore 64 and IBM compatible computers.

Yes, folks, this will surely go down in the history books as the most timely computer game ever released. The fight against the Colombian drug cartels is big news - and here's your very own opportunity to "kick butt" with the 7th Air Wing, right on cue.

Sheer coincidence of course. In fact, the game is set in 1999, ten years hence. Nobody at Epyx was expecting anything to happen so soon. Not that anyone is complaining. In fact the marketing men are delighted.

Only one question remains. Is the game any good?

In an effort to find out, I tried both the IBM and Commodore 64 versions. Surprisingly - to me at least - the IBM version

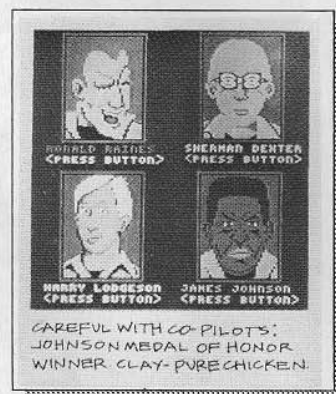
came out in front. Difficult to believe, I know, but EGA mode graphics are excellent, the F-14 flies like lightning, and even the sound effects are way above average. Above average for a little squeaker in a tin box, anyhow.

Commodore 64 users will not be disappointed, however. While not quite as fast or smooth as the high powered PC version, this is one of the most flyable simulators I have played on the C-64. The landscape is simple, but at least it moves smoothly past the cockpit windows. The high pitched jet-engine whine is recreated nicely, and the overall look and feel of the game is high class.

Before the game begins, there are a few chores to take care of - sign on, choose a co-pilot and set your difficulty level. There are six co-pilots, each with different personalities - the right partner can be very helpful in the air, giving timely advice on tactics and weapon selection.

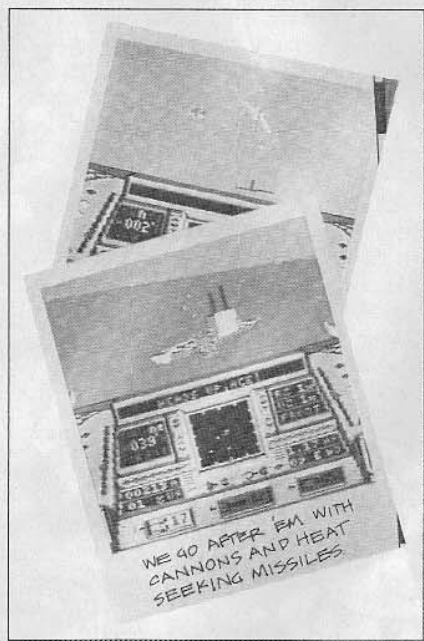
Time to take off - set the throttle position with the number keys, roll forward on the runway and pull back on the joystick to take off. Easy. This is not one of those annoying flight simulators that keep you grounded until you've memorised the manual. Flying by the seat of your pants is quite in order.

Once airborne, though, things quickly get worse. In moments, a red blip on my radar screen indicates an approaching enemy aircraft. A coded warning tone identifies the enemy as a MiG-27 armed with heat seeking missiles.



At times like these I usually try a barrel roll - it works beautifully on games like *Interceptor* and *Skychase*. This time, though, I'm too late. With a resounding boom, the screen fades to black. The Drug Barons can rest easy tonight.

Snow Strike is not only topical - it's a quality game. A responsive jet simulation, plenty of satisfying targets, and enough enemy firepower to keep you well and truly on the hop add up to a satisfying package with long term appeal. □



Distributed in Australia by
Questor (02) 662 7944.
C64 RRP \$29.95.





GREG MUNRO takes us for a guided tour through Netherworld, a game he would still be playing if only ...

"YOU ARE TRAPPED in another world, a world completely different to the one you know ..." raves the somewhat meagre documentation accompanying this strange little number from Pactronics. They're not kidding, I've been trying to escape this "world of fantastic structures and strange, wonderful beings" for several hours now! I can almost find enough diamonds to finish level two (out of at least ten!) before I run out of time or lives.

The game is *Netherworld*, designed and written by Jukka Tapanimaki, who has an imagination to match the name. I hated it for the first ten minutes; then I read the instructions.

Once I knew what I was doing, I was hooked. Suddenly, the gameplay was addictive. *Netherworld* has just the right achievement to frustration ratio. It makes you want to try just once more ... until you find yourself wondering how 2:30 a.m. came round so soon ...

Entering level one, you are entombed in an eerie catacomb, which scrolls horizontally and vertically as you move. The rocks and bricks are suffused with a sickly green light, giving them a corpse-like pallour.

You are in search of the phosphorescent diamonds that are your ticket back to sanity and a normal life. These gems are the local currency. Get enough diamonds, and you can buy your way out of *Netherworld*. Picking up the diamonds is easy - you just run over them with the curious revolving spacestation-shaped thing you are controlling. The problem is avoiding the nasty dragon heads which guard the labyrinth by spitting acid bubbles. The bubbles, and the brilliant green pixels emanating from them, eat into your armour level until your ship disintegrates.

There are other hazards too, such as the mines which whizz around bouncing

off everything in sight. Three ships gone and it's Game Over. As if that wasn't enough, you are also racing against the clock. A mere 100 seconds to find 27 diamonds and get to a teleport hole. Fortunately, you can increase the time available by picking up hour-glass icons. If your time runs out, you lose a ship and have to start the level again.

Netherworld is not all defensive, however, and shoot 'em up freaks will not be disappointed. Your ship fires in four directions simultaneously, and the supply of ammunition is endless. When you shoot some of the bubbles, glowing icons appear. Capture these, and you receive bonus points; extra ships; wallbreakers; or dragonkillers. If you feel like a gamble, you might try the "???" icons. These are wild cards, the result depending on the roll of the electronic dice. Perhaps you'll receive invulnerability or an extra life. On the other hand, you may end up with an uncontrollable ship, or the joystick commands may be reversed!

Level two is still a labyrinth, but the ghastly green glow is replaced by a beautiful yellow-brown ambience, like the colour of autumn leaves. Instead of rocks, there are golden cratered moons,

looking like big one dollar coins, surrounded by bricks. It's like playing inside a Salvador Dali painting. The beasties are aesthetically different, but fulfil the same evil functions as before. Here you must make more use of secret doors, wall-smashing icons and teleport holes, as each area of the maze is completely bricked in. This makes time your greatest enemy, and I usually run out with about two diamonds to collect.

Netherworld seems to have been written for the 64/128 and ported to sundry Spectra and Amstrads; the Atari ST; and lastly the Amiga. Which probably explains why some commands (such as Abort Game) don't work on the Amiga version. You're supposed to be able to start at levels 1, 5 or 9, but I could only select "1". It also wouldn't store my high scores. (Why have a hero table on the disk if you can't write new high scores to it?) The Amiga graphics are good, but not much improved on the 64, so if you have both machines save your money and go for the 64.

Netherworld is a very enjoyable game, but one I'll never be addicted to ... thanks to the virus that has just replaced the boot-block on my copy. AAAAGGGH! □

AMIGA



Review copy
from
Pactronics
(02) 748 4700.
RRP Amiga
\$49.95.

S-T-A-G-

AMIGA

Is it possible? Is this game better than Elite? Seasoned Space-Trader KEN SIMPSON finds out ...

SINCE THE COMING of *Elite* to the Atari 8 bit and Commodore 64 machines, there have been many attempts to match it. *Elite* was unique - extremely playable and brilliantly presented. I have not yet found anything that has come within a half-length of it. Despite having almost the same story lines they have all failed to duplicate that brilliant interplay of arcade and strategy.

I must admit that when I opened the package for *S.T.A.G.* I groaned a bit inwardly - not another space trading game trying to be like *Elite*! This initial impression was not improved when I had all sorts of trouble getting into the game because it wouldn't accept my passwords from the manual. Still - this is one time when first impressions are not quite right.

When you load and are through the initial password and advertising stuff you are presented with a console with multiple icons. By clicking on them you are given custom requesters in which to make decisions or you are put into a new screen such as for maps. The requester interface is not brilliant but is quite acceptable and I found it did not hamper gameplay. This console controls all parts of the game. You replenish stores, make repairs, buy and sell, plan your next "jump" and outfit your craft all from this screen. It is easy and quite intuitive.

The object of the game is to amass as much money as possible to outfit your craft as best you can and therefore to

complete as many missions and blow up as many pirates as you can. Sounds like every other space trading game you've ever played - right? Well, this seems just a bit above the average.

The graphics are excellent. You actually get to see the people you are trading with, as well as the goods you are buying. This makes for interesting viewing at each new planet. I found that they were not repeated very often.

The game sound is excellent too. From the introductory music - which is quite catchy - to the noise of the view screen displaying a picture (a satisfying buzz), it was all very good. I wish all games were as good in this department.

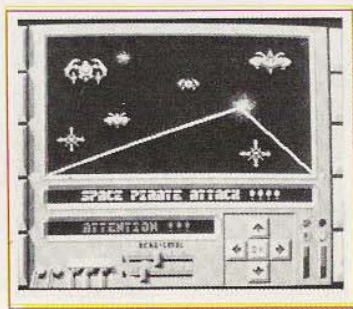
For me, though, the proof of a game like this is in the arcade section, and unfortunately, this is the one area that I found that it was significantly lacking. The flying sequence is quite good as you try to pilot your ship down a twisting corridor of hyperspace without touching the sides. Mouse control of this was difficult to master but not impossible - a good challenge. When you encounter pirates on your journey things change quite a bit. You leave your hyperspace corridor and you are in open space. The pirates come at you from all over the screen and that's it. They come at you from the front. No sneaky side attacks, and once they get to you you're done. To kill you just point and click at them and with a bit of skill and luck you will get them. I found this part nowhere near as

difficult or challenging as many others of this type of game, though the action was fast and furious!

As you improve, as you get more money, and as you improve the quality and outfitting of your ship, you are occasionally offered special "missions" - delivering people to conferences on planets you have to find, or delivering water to thirsty planets likewise. Of course you may accept or reject these offers, and if you do accept you can expect to be harassed. But the rewards are great.

So what of *S.T.A.G.*? I enjoyed it despite the niggle at the beginning. I don't think it is as good as *Elite* overall but in certain areas it really is excellent. If you enjoy haggling over prices of goods, if you are into exploring a mini-universe and meeting ALF's then you may just find this quite engrossing. But if you're out for a quick kill and a bit of heavy joystick action, I don't think this one's for you. □

Distributed by Pacronics
(02) 748 4700. RRP Amiga
\$59.95.



POPULOUS

AMIGA

Since Adam and his wife decided to they could do it better on their own, everyone has wanted to "play God." Here's your big chance! TONY SMITH introduces POPULOUS, one of the most impressive Amiga games yet ...

EVER WANTED TO be omnipotent? How about being able to move mountains? Produce floods? Make earthquakes? Interested? Then *Populous* is the game for you. With a scenario of almost 500 worlds, from lush tropical jungles, to frozen wastelands with sub-zero temperatures, this game is huge. And best of all, you are in charge. You are the Divine Being, non-denominational, invisible, omnipotent and of no sex or colour.

"Genesis" is the first world, containing just a few followers and some houses. Hopefully they will be fruitful and multiply, building into a horde which can attack the forces of EVIL. That's the catch - the bad guys have the same idea, populate the earth and beat up all the good guys.

The implementation of *Populous* is fantastic - so much to see and do, using all the abilities of the Amiga. The screen is full of views and icons and the room is filled with the most amazing sound effects, creating an atmosphere of reverence and awe. My wife can even tolerate the sound effects for long periods, providing the volume is not too high.

Long periods will be the keyword when this game is played - it's very compulsive. The game will really keep you on the hop - you'll need to be good at "multi-tasking" to keep your world running smoothly, building up the low spots and flattening the peaks in order to provide your flock with plenty of building sites.

Clearing a five by five area will allow

a castle to be built, smaller areas will hold huts, cabins and towers. Making sure your messiah is healthy and safe in a castle or tower, watching the other guys to see that they are not sneaking up on you, extending the boundaries to fit in more huts, the tasks are endless (almost).

There's a 'Manna' bar to show your strength, with a pointer that works its way along the bar as your power increases. With the extra power you can perform 'Divine Interventions' such as moving your 'Papal Magnet' to another seat of worship, casting a shallow swamp, a flood or an earthquake at your opponents. Higher powers can cast volcanoes, bottomless swamps, knights and ultimately 'Armageddon.'

Swamps are useful, shallow swamps only swallow one person before they disappear, bottomless swamps just keep on swallowing! Watch out for the Swamp Monster, a green animated blob wandering the vicinity of swamps and swallowing any unfortunate citizens in the area.

Volcanoes cover the land with rocks making building difficult, floods drown a lot of people but some can be rescued if you are quick. Knights are extremely destructive, beating up the enemy and then destroying the buildings before torching them! Armageddon results in all the populations meeting at the centre of the map and having an almighty punch-out, it should only be used if your forces outnumber the enemy comfortably.

On the screen is a small but detailed map of the whole "world". Below is a close-up map of the area under the cursor on the world map. A shield is used to indicate the energy level of the holder and bars at the sides indicate which side is the more Populous.

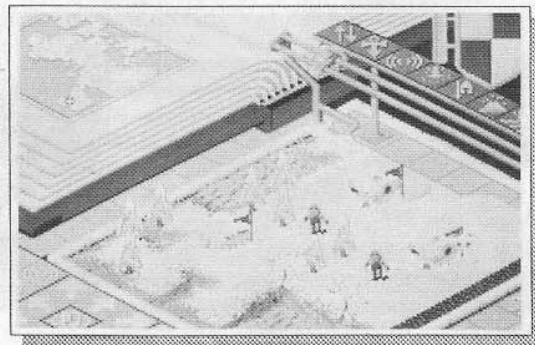
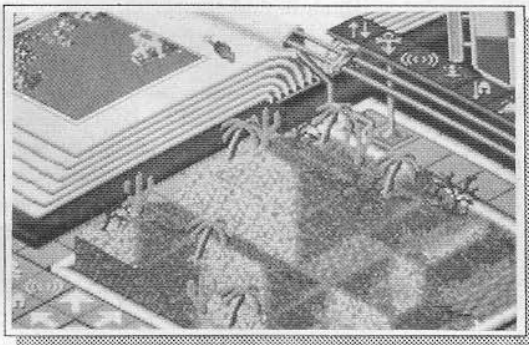
The animation and the detail of the close-up map is great with little men wandering about or following their leader. They cannot be controlled individually but can be influenced by manipulating the "Messiah". He can be encouraged to walk towards the 'Papal Magnet' taking his followers with him. Should he be killed, the Papal Magnet is moved to the place where that the leader was created, clicking on the 'go to Papal Magnet' icon causes the followers to go to the magnet, the first one to touch it becomes the new leader and any others are absorbed and turned into energy by the leader.

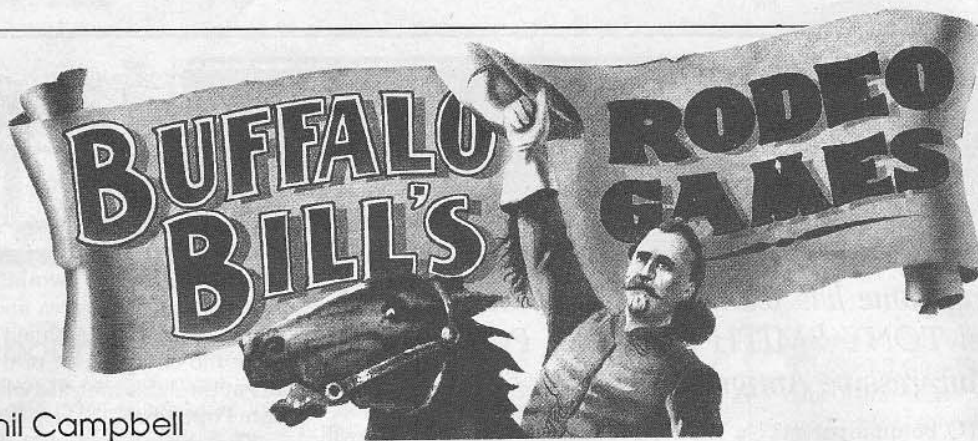
The 'settle' command causes building activity and the 'gather together' command causes the followers to join together to form stronger entities. The 'Fight' command causes the followers to engage the enemy, if no enemies are in the area, more buildings are erected on spare land.

One interesting feature which I saw was a wizard on a flying carpet, he flew steadily across the entire world, with stars around his head, destroying any homes he contacted.

Populous is a must for any budding Messiahs or great leaders among us. Who knows, there may be another Bob Hawke or Adolf Hitler out there somewhere! □

Review copy from ECP
(075) 96 3488. RRP Amiga
\$45.95.





by Phil Campbell

I reckon I've stepped in enough cow-pats in my time to qualify as a genuine cowboy. And that is not all. I have chased cows around large paddocks. Cows have chased me around large paddocks. I am reasonably well acquainted with cows. Okay, I'm not quite the fully fledged gun-totin' wild western style cowpoke, but I am well enough qualified to enter Buffalo Bill's Rodeo Games.

THIS SIX GAME set puts you in the hot seat at an old style Rodeo. Calf Roping and Steer Wrestling events are just the beginning. Try the Stage Coach Rescue for some authentic wild west flavour, then the Knife Throwing and Trick Shooting events to test your accuracy. Bronco Riding should finish the day off with a bang.

The Amiga version of *Rodeo Games* can be controlled with either the joystick or the mouse. Some events lend themselves better to one or the other. Some events lend themselves to neither.

The Rodeo opens with a knife throwing display. You control Sitting Duck, an Indian Chief decked out in war paint and feathers. Your beautiful assistant is spinning on a circular target - genuine rotating shift work. Aim and time your throws perfectly; the slightest slip, and you'll be chalking up another point on the squawboard. This is a very difficult event, and, sad to say, the only way to improve is by trial and error.

If you fail, the results are gruesome - a

red veil dribbles down the screen, followed by a notice with the message "NO BONUS" printed in bold letters. Bad luck. Especially for the squaw.

Trick Shooting is a little less blood thirsty. You only shoot wooden cut outs and glass bottles - though in my case, not many of the bottles. Stage 1 involves shooting at the wooden targets, avoiding young ladies and innocent hostages if possible. This is easy, especially if you play it with the mouse. Your gun-sight moves around the screen quickly and smoothly, though you have to remember to press your right mouse button to reload after every six shots.

In the next stage of the shooting event, you blast bottles thrown into the air. Judgement, timing and skill are all necessary, which ruled me out of contention.

Bronco Riding was all over in less than a second. No kidding. One buck and I was off. Mind you, the pain was a lot less intense than it would have been in real life. Apparently, you have to

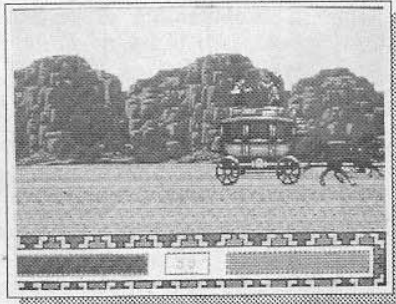
watch a "buck-meter" on the right of the screen while you move your joystick to compensate. Easier said than done.

Good timing is needed for Calf roping and Steer wrestling. I almost brought down the steer - I jumped from my horse at precisely the right moment, grasped him by the horns and wiggled my joystick as instructed in a brave attempt to wrestle him to the ground. Unfortunately, the stupid beast insisted on staying upright.

The Stage Coach Rescue sequence is exciting, and there is a lot to do. A renegade Indian has taken over the coach, and I am chasing him on horseback. As I close in, he throws luggage at me. Dodging back and forth, I finally draw alongside the coach, ready to climb on board and fight to the death. "Time up" says a message on the screen - and that was as far as I got.

Graphics on the Amiga version of *Buffalo Bill's Rodeo Games* are lush. With rich colours and rugged outback landscapes, the atmosphere of the wild west is captured well. The music track bounces along rather nicely too, with a medley of foot-tapping favourites like "Oh Susanna" and "Little Brown Jug" barreling along in the background.

Multi part games like this are something of a tradition. Generally, none of the individual sections are strong enough to stand on their own; *Rodeo Games* are no exception. Put the pieces together, though, and the result is fairly entertaining. It's probably worth a look - and that's no bull. □



Review copy from Questor, (02) 662 7944. RRP Amiga \$59.95, C64 disk \$39.95.

AMIGA



SAVAGE



by Luke Tattersall

Savage! The word alone conjures up images in your mind. Well, let me tell you those images give you a good idea of what this game is like. "Fired by rage, Savage plunges into an orgy of violence, wielding his trusty battle axe in a maniac fighting frenzy, dispatching all who stand in his way."

IT ALWAYS AMUSES me that they try to attach a story to these sort of games. WHY BOTHER? The sort of people that enjoy playing them (and I include myself) are not interested in stories. All they are interested in is blasting things and getting big scores. Yet the designers of the game feel that it is important for the player to know why he has to be so violent.

In this case, the challenge is to rescue a fair maiden from a dark and hostile castle. There are three sections:

- Escaping from the castle
- Returning to the castle to rescue his maiden
- Sending the eagle to rescue the maiden.

The game comes on two disks. The first level is on disk 1 and the next two levels are on the second disk. You can play the second and third levels at any time but unless you have completed the previous level and have the code word you only have one life. The three different levels also involve slightly different skills. This really adds to the appeal of the game.

As you start up the game a loud voice screams and then calls out the word "savage". The intense opening music is sure to set your pulse racing (you really need to turn the music up to get the full feel of this one). All this happens before you have had a chance to wield your trusty battle axe. The music continues throughout the whole game and is a great backing for the action.

Other SFX are good too - the noise of the battle axe and the lightning bolts as you throw them are particularly impressive.

Graphics are very good. The whole

screen is taken up by the action of your game and there is lots of colour and excitement. The background is in no way boring and the "demons and ghouls" you are up against really look the part.

The action on the first level involves you running from left to right to get out of the castle. The second level has you moving from front to back. Your eyes are Savage's and in a 3D perspective you have to avoid obstacles as you race towards the castle. The third level again

has you moving left to right (I must admit I didn't finish level 1 so I was unable to have much of a go on the other levels.)

One aspect of the game that I thought was a little weak was the jumping. In order to progress at some points Savage must jump and land on the top of pillars. I found that sometimes you fall for no apparent reason and other times when you think you should have fallen you manage to stay up. This is by no means a major fault with the game, it is just a little thing that frustrated me at first.

The back cover of the box reads "Can you be the ultimate fighting machine savage?". This game has me accepting the challenge. I found it really exciting. The music revs you up at the start and the action of the game keeps the adrenalin pumping. If you like pure blast-em-up action with just a hint of skill then make sure you have a look at Savage. □

Review copy from Questor (02) 662 7944. RRP Amiga \$49.95, c64 disk \$39.95, cassette \$29.95.

AMIGA CR



Raider

by Greg Munro

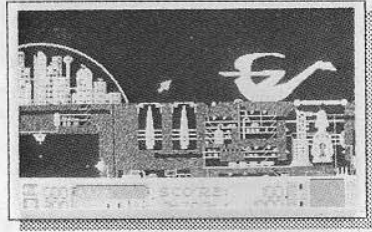
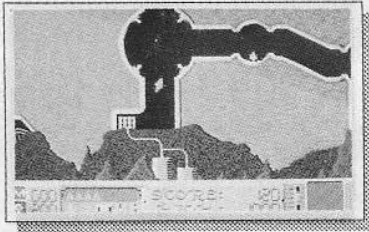
The entertainment editor, bless his little cotton socks, forgot to send me the rules for Raider, so unfortunately I'm flying blind. Not that it matters much - that's what you're doing most of the time in this game anyway: staring at a black screen with just the tips of a jungle mountain range visible below.

MY FIRST IMPRESSION of *Raider* was that it reminded me of a Public Domain game called *Workbench Lander*, in which a small Delta-shaped L.E.M. is maneuvered to a landing on the top of a Workbench window. The ship you control in *Raider* looks and feels just the same, and makes the same sound when you hit the retros to counteract gravity. It also makes the same sound when you hit a mountain or projectile and explode in a lovely red fireball!

The top half of the screen is where the action takes place. The sky is black, providing a stark contrast for the ochre and green of the terrain below. The craggy mountains are seen in relief, with strata of various hues, and jungle trees on top. Small huts perch precariously on hill-sides. The occasional bridge passes underneath, connecting two sides of a ravine. There is no time for sight-seeing though, as you survey the pulsating blue line running up the inside of a hill and supplying power to the gun emplacement that is spewing little green pixels in your direction! You manage to hit the shields button just in time...

The bottom of the screen is a control panel showing score; ships and fuel left; and other things I don't understand because I have no instructions.

Running into things is very easy, requiring absolutely no skill whatsoever. In fact with no previous experience I managed to do almost nothing else for the first half hour or so. The problem is your gun is on the opposite end to your rockets. That means you can only shoot in the direction you are going, which can be pretty tricky when you're firing at things below you. The procedure is: guess where the target gun emplacement is



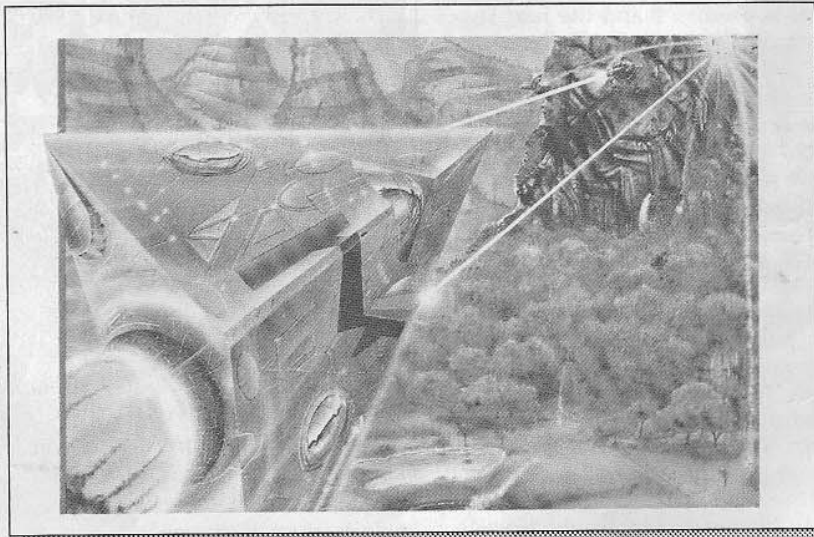
from the projectiles aimed at you from off the bottom of the screen, flip upside down, allowing gravity to do its work, and fire wildly in the optimistic hope that you'll hit something. Even if you do manage to destroy the enemy, you must flip back up the right way and hit the retros again before you become a black smudge on the side of some alien hill. The tendency at first is to panic and get things round the wrong way, ending up propelling yourself straight down at a million kilometres per hour!

As well as the hazards of hills and projectiles, your raiding craft contains a finite amount of fuel, so you need to be sparing with the thrust. A klaxon sounds as you are about to run out of fuel. Fortunately, in the depths of a ravine, you will find a glowing refueling module.

Gently easing your craft down and turning on your shields, you are refueled, to the accompaniment of the inevitable meaningless electronic noise.

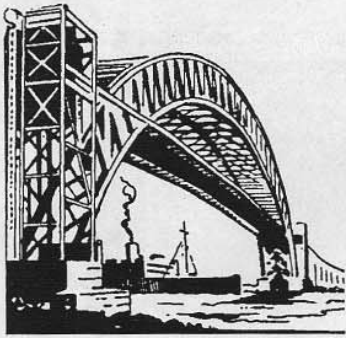
After a certain amount of time, or when you've destroyed all the guns, a golden cog, something like the Rotary logo, appears at the bottom of a deep valley. When you pick it up, it is deposited in one corner of a box on your control panel and starts spinning. I have no idea what it's for, but when you get it you may then advance to level two. It looks like there's room for three other cogs in the box, so perhaps that means there's four levels? Level two continues the same basic gameplay, except the jungle is replaced with futuristic buildings. That's progress! I can't tell you much more about it, as I keep becoming a fireball before I get anywhere.

Raider is the kind of game you can just load and play without bothering with the instructions. To master it is not so easy, however! Graphics are average, and the sound is nothing exceptional, just the standard explosions and beeps. Gameplay grows on you as your skills improve, but it's hardly the year's most exciting game. □



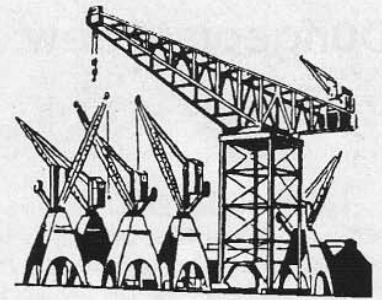
Review copy from Pacronics (02) 748
4700. RRP Amiga \$49.95.

AMIGA



Adventurer's Realm

by Micheal Spiteri



WELCOME ONCE AGAIN to the Realm, the only column in Australia dedicated to the troubled Commodore adventurer.

Only two months ago, we were celebrating three years of the Realm, well this month we are having yet another celebration, this time for *The Dungeon*, Kamikaze Andy's special section for role-playing games. *The Dungeon* is one year old this month!

Role-playing games have made a major contribution to the strategy game market, with role-playing games released totally outnumbering adventure and wargames (this year, anyway!). This means competition, which means in the long run improved quality and advanced software, and I think even the veteran adventurer will admit to seeing some breathtaking role playing games.

If anybody wants to write to Kamikaze Andy with problems, hints and tips for role-playing games, his address is

The Dungeon, 44 Hawkesbury Drive, Willetton, WA 6155

Meanwhile, adventure games are what the Realm is all about, so write to me if you have any problems, hints or tips, or if you have anything to say about anything to do with adventure games, or even if you just want one of the Realm's free hint sheets. Write to:

Adventurer's Realm 1/10 Rhoden Court, Nth Dandenong, Vic 3175

Barry Bolitho is our resident wargamer, and he might be able to help you out if you are stuck in a famous battle. Just mark your envelope wargaming section.

Free hint sheets

The following hint sheets can be obtained from Michael Spiteri by sending a stamped addressed envelope to the following address:

1/10 Rhoden Court, Nth Dandenong

- Zork 1,2,3
- Bards Tale 1,2,3
- Dracula 1,2,3
- NeverEndingStory
- Hitchhikers Guide
- Adventureland
- Borrowed Time
- Hampstead
- The Pawn
- The Hobbit
- Castle of Terror
- Pirate Adventure
- Fairy Tale
- DejaVu

Note: Only four hint sheets per person!!!

New Releases - New Releases - New Releases

● Hottest release this month is *Personal Nightmare* for the Commodore Amiga. If the introduction doesn't scare the pants off you, then the animation within the game will. The game features an original and interesting plot. Apparently, some of the residents of your childhood home village have been possessed by a demon.

You have to find out who is possessed by exploring each of the townfolks' personalities, and then work out some sort of ritual to cure them! Heavy stuff!

Many places to explore, many characters to meet, many unanswered questions. All the right ingredients for a good 3 o'clock in the morning adventure

game! The game understands full sentences, but you can also use on-screen icons to enter some of the more common commands.

Really great graphics and sounds, a well presented adventure from Horrorsoft, distributed in Oz by Questor (02) 662 7944. RRP Amiga \$69.95.

Also check out *Sleeping Gods Lie* (reviewed in last month's Realm), a game that combines role-playing with adventure and elite style arcade graphics. You have to travel across eight kingdoms in search of a sleeping god. Produced by Empire, also available from Questor.

Dungeon review: Times of Lore

TIMES OF LORE IS AN attempt by established rpg publishers Origin to break into the arcade-adventure market, and it has done so admirably! The plot goes like this: The Kingdom of Albareth, once a peaceful and happy realm, is under threat by marauding orcs and malicious priests.

The ruler of Albareth, the high king, mysteriously disappeared with his infant child twenty ago, and since his departure Albareth has slowly fallen into evil hands. The current regent, Lord Dariel, is powerless to prevent the evil from spreading, so it is up to you to find out the fate of the high king and the infant heir, and to restore peace and order to the kingdom.

A series of subquests will help in toughening up your character's skills, as well as provide vital clues to your final goal.

During your journey in Albereth you will meet up with a variety of characters, some of them friendly, but most of them hostile. You must also deal with friendly characters, and this is done via the talk option. Once this icon is selected, you have a choice of chatting (which some-

times reveals important information), or you may ask questions on specific topics.

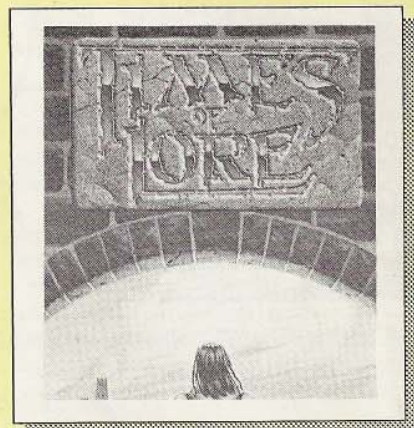
On the C64, the top half of the screen is the graphics window, shown in forced 3-d perspective (much like *Faery Tale*). The scrolling is extremely smooth but often a little slow, due to your character's lead-footedness at the start of the game. Once you obtain a certain pair of magical boots, the scenery zips past.

The bottom half of the screen is filled with various icons (for performing various actions), and a conversation box which displays the text.

Surprisingly, on the Amiga the graphics window is much smaller than on the C64, taking up only a quarter of the screen. The icons are similarly positioned at the bottom of the screen, and both versions feature a burning candle that shows your energy level. Once the candle is extinguished, you die.

Differences between the Amiga and C64 versions are purely cosmetic.

Although *Times of Lore* is a highly satisfying game and good value for money, there are a few cumbersome features.

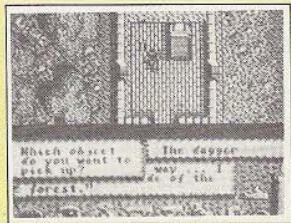
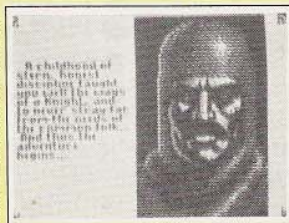


Firstly, the game is totally joystick controlled - even the icons - this is very fiddly in practice! Secondly, the characters are slow - even with the magic boots, characters move like snails!

Thirdly, the method of saving leaves a lot to be desired (you can only save the game in taverns, and you have to pay 10 gold coins to do so!). Fourthly, if you accidentally hit someone who is not an enemy, no one will talk to you for the rest of the game! In fact, everyone will try to kill you. You cannot save your game (the in-keeper is ignoring you, remember?). (MS: That'll teach you to go running around slaughtering fairies!! Are you sure it's not your breath?)

Despite these problems, *Times of Lore* remains one of the best arcade-adventures made so far, and the fairly strong storyline will keep many playing into the wee small hours of the morning.

Available from Questor (02) 662 7944. RRP Amiga \$49.95, C64 cassette and disk \$49.95. □



Realm's Chit-Chat

● I must apologise to a number of people who wrote to me asking for hint sheets. Some of you, I realise, wait up to two months for them (and some are still waiting). Due to time restrictions, I am only able to photocopy supplies of hint sheets once every two months. Sometimes I run dry of a particular hint sheet, and letters requesting those hint sheets are put on hold until I can organise some emergency copies. This has affected approximately 5 percent of mail intake.

The hint sheets that usually run dry are the *Bards Tale* series, *Deja Vu*, and

Faery Tale (demand for these hint sheets seem to increase threefold every month!)

So, if you are still waiting for your hint sheets, please be patient - I have not lost your letter!

Stuart Johnson of Mt Eliza writes "Having read the August issue, I saw the comments about Mortville Manor, and I agree with Kerrie Brady. The speech is slightly hard to understand sometimes"

MS:- This is true, however the game does enable you to repeat what was said if you didn't quite understand. Considering everything in the game was translated from French, it is a lot clearer than expected! □

Zorkers of the Month

● After many months absent, the Zorker of the Month award is back. This time you don't have to play Zork to qualify. This month's award goes to everyone who still insist on writing to Kamikaze Andy's Dungeon for hint sheets, when we have stated clearly that he does not have any!!! □

**Problems, Problems,
and more Problems
(or the Troubled
Adventurers Department)**

● This month, problems have been pouring through the Realm at an alarming rate. Help is needed for all the demented adventurers listed below....

Patient: David Campbell

Illness: Wasteland

Symptoms: Fourth Level of Basil Co-chise - cannot solve.

Patient: Lynden Faull, Derrinallum, Vic

Illness: Lurking Horror

Symptoms: Uncooperative urchin.

Patient: Wayne Annette, Waverton, NSW

Illness: Legend of the Sword

Symptoms: Cannot locate password for underworld.

Patient: George Williams, St.Ives, NSW

Injury: *Multiple Wounds*

Bards Tale I: Cannot find entrance to Mangar's Tower.

Ultima IV: Does not know what pure axiom is.

Faery Tale I: Cannot find the idol in the tomb.

Patient: Anonymous.

Injury: Amazon Adventure & Dragon World.

Symptoms: In Amazon, cannot get past three doors before gasses kill you.

In DragonWorld, cannot get past up-hold when crystal is smashed.

ADVENTURERS

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Tetrix(S/AR) - Blitlab(UT) - FracGen(AT) - BootIntro(UT) - Diet Aid(PR)
Mouse Util(UT) - Atari-Emulator(H) - Furnish(PR) Mackie(UT)
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Patient: Rene De Candia, Nth Ryde, NSW
Injury: *Multiple*

Shadows of Mordor: Cannot catch Smeagol to talk to him. Cannot move the raft.

Mask of the Sun: Cannot get past snake. Cannot find any bowls.

Long Term Patient: Linda Ulett, Bray park, Qld

Illness 1: Lords of Time

Injury: Cannot get through the door in the inventions room (cog 3).

Illness 2: Hitchikers Guide

Injury: Cannot work out how Zaphod enters Heart of Gold after Trilliam intervenes.

Cannot carve name in the monument.

Illness 3: Red Moon

Injury: Cannot chalk off Mazzon. Cannot pass Gasper.

Patient: Darren Koch, Canning Vale, WA

Injury: Maniac Mansion

Symptoms: Does not know how to read the score on Metior Mess.

Patient: Stuart Johnson, Mt Eliza, Vic

Injury: Uninvited

Symptoms: Cannot pass ghost in chapel.

Doctor's Suggestion: Try using the No-Ghost spray.

Patient: Dot (the granny), Shepparton, Vic

Injury: Hollywood Hi-Jinx

Symptoms: Cannot open close hatch on beach, and cannot open compartment under cannon.

Doctor's Suggestions: Try firing the cannon.

Patient: S.K.Pillay, Eastwood, NSW

Injury: *MULTIPLE*

Beyond Zork: Cannot extract Croc's tear from idol. (Exact entry required).

Space Quest II: Cannot seem to get started in this game.

Kings Quest III: Cannot find dried acorns or smooth stone for spells.

Patient: Sam Butler, Chatswood, NSW

Injury: Ultima Series.

Symptoms: Requires as much info as possible to complete game (MS: Doesn't want much!)

Patient: Steve Gonsalves, Tamworth, NSW

Help Hints and Tips

For: Maree Reynolds

From: Dot the Granny

Game: King Solomons Mines

Help: Ignore first ant hill. Drop wet fish at second ant hill.

⇒ Mindshadow

- Punch the leader of the sailors.
- Use the cleaver to cut the chain off the anchor.
- Buy some info from the man in the gutter.
- Give the hat to the woman in the cafe.
- Search the dead man at the booth.
- Shell makes a good spade.

⇒ Uninvited

- Check the mailbox, examine all contents.
- Burn the box you found in the bed-

Injury: Chrono-Quest

Symptoms: Cannot find use for bone, sticks, rock, leaves, scroll, bucket, paper, key, necklace. Cannot enter any buildings.

Patient: Mr R. Goon, Moree, NSW

Injury: *MULTIPLE*

Zorro: Cannot solve cemetery section.

Batman: Cannot open door to mansion or warehouse.

Holy Grail: Cannot get past 'Nic' knight second time around.

Patient: Andrew Kidd

Injury: Goblin Towers

Symptoms: Cannot distract giant in lair.

room.

- Put some water in the pot.
- Lighted candle will deter ghosts.
- The bird can be caged.
- What the dead guy needs is a nice grave.

⇒ Jinxter

- You don't need to pass the bull.
- Cut the wire after holding it first.
- The rusty key will open Xam's door.
- Get a job in the bakery.
- Freeze stool to obtain it.
- You need to wear gloves before you take bracelet.

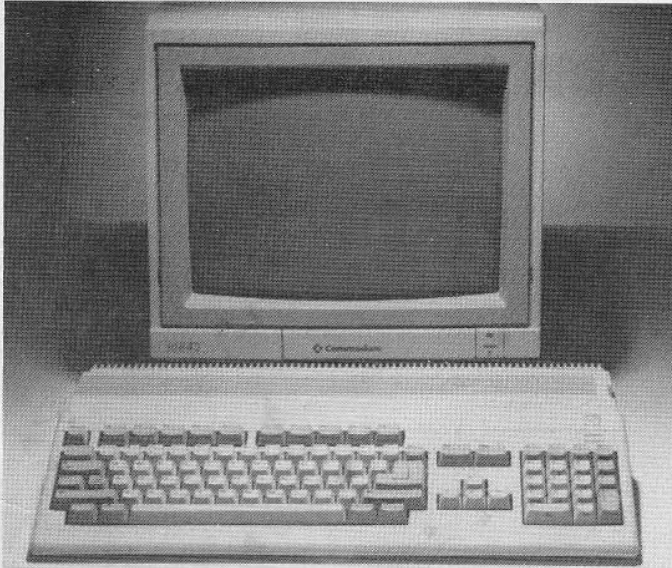
⇒ Police quest

- When entering the jail, leave gun in locker.
- The nightstick in your car will annoy the bikers.
- Dial the operator if using the phone is hard.

Advertisers Index

Adac	71	CPM	44	Maxwell	39
Amiga Live	71	C/WR	53	Megadisc	55
Artscape	53	Dataflow	11	Mindscape	OBC
Briwall	14,15,16	Desktop Utilities	53	Ozisoft	9
Cockroach	71	Disk magazines	55	Pactronics	IBC, 3, 4, 49
Commodore	41, IBC	ECP	30, 31	Parcom	19
Computer Discounts	45	Fairstar (H & R)	33	Power Peripherals	29
Computa Magic	47	Hard Disk Cafe	7, 51	Prime Artifax	54
Computermart	2	Home Entertainment	36, 37	Questor	61
Computermate	5, 35	HPD	48, 51	Roseneath	53
Computerscope	17	Interlink	25, 26, 27	Ultracom	43
Computer Spot	20, 21, 22, 23	Island by Mail	58	Whites	7
		Lazarus Ribbons	32		

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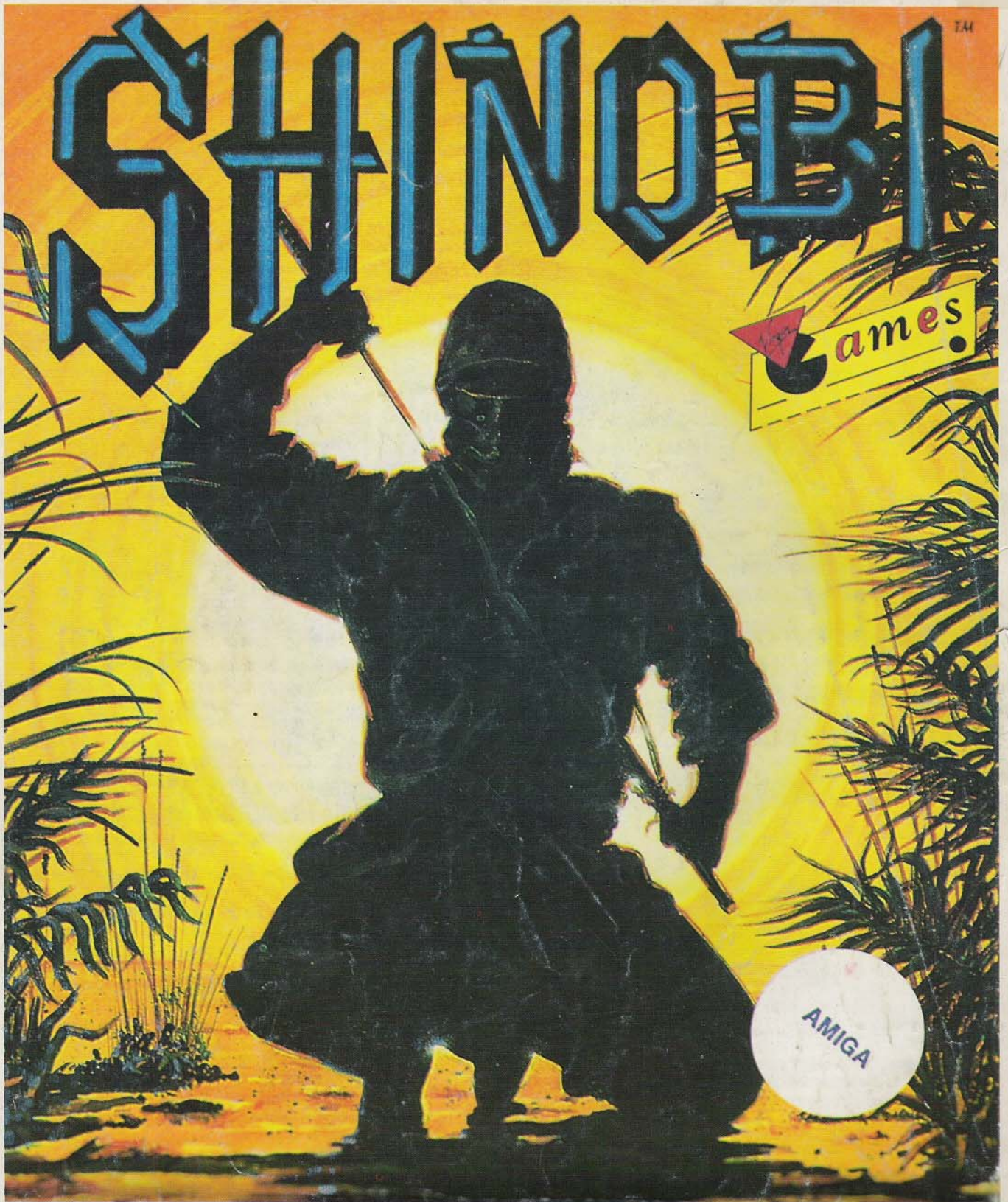
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